

GENERAL NOTES

- ALL ASPECTS OF THE PROJECT ARE IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON DEED / PLAT COMPOSITE PREPARED BY ROBERT H. VOGEL ENGINEERING, INC. WHICH SHALL BE VERIFIED AND CORRECTED AS APPLICABLE PER A CERTIFIED BOUNDARY SURVEY PRIOR TO FINAL PLAN PHASE.
- 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 7/28/06.
- TOPOGRAPHY SHOWN HEREON IS OBTAINED FROM CURRENT HOWARD COUNTY GIS DATA.
- SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE DEED SOIL SURVEY, HOWARD COUNTY MARYLAND. FOREST STAND DELINEATION PLAN WAS PREPARED BY MCCARTHY & ASSOCIATES, INC. DATED MARCH 2012.
- FOREST CONSERVATION EASEMENT HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1700 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL. TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY ONSITE AFFORESTATION OF 1.78 AC. FINANCIAL SURETY IN THE AMOUNT OF \$38,987 (77,972.4 x 0.50) WILL BE POSTED WITH THE FOREST CONSERVATION MAINTENANCE AGREEMENT.
- 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.
- 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 41) 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 ONSITE.
- A TRAFFIC STUDY HAS BEEN PREPARED BY THE TRAFFIC GROUP, MAY 2012.
- ALL DRIVEWAY ENTRANCES SHALL UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R-6-06
- WETLANDS AND STREAMS SHOWN HEREON ARE BASED ON A FIELD INVESTIGATION PREPARED BY PREPARED BY MCCARTHY & ASSOCIATES, INC. DATED FEBRUARY 2012. THERE ARE NO PROPOSED DISTURBANCES TO THE WETLANDS OR ASSOCIATED BUFFERS.
- 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 DURING THE FINAL PLAN PHASE.
- IN ACCORDANCE WITH SECTION 16.124 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 TO CURRENT HOWARD COUNTY SPECIFICATIONS.
- EXISTING UTILITIES ARE BASED ON HOWARD COUNTY RECORDS AND FIELD SURVEY.
- STREET LIGHTS ARE NOT REQUIRED FOR THIS DEVELOPMENT.
- ALL SIGN POST USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COURTY 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 TOP OF EACH POST.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
- 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.
- STORM WATER MANAGEMENT TO PROVIDED FOR THIS DEVELOPMENT BY ENVIRONMENTAL SITE DESIGN UTILIZING: ROOFTOP & NON-ROOFTOP DISCONNECTIONS, RAIN BARRELS, PERMEABLE SURFACES. THE PERMEABLE SURFACES FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED. IF REQUIRED, GEOTECHNICAL INVESTIGATIONS SHALL COMPLETED.
- SEDIMENT AND EROSION CONTROL WILL BE PROVIDED FOR THIS SITE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS SUBDIVISION.
- THE EXISTING HISTORIC HOUSE AND ITS ASSOCIATED OUTBUILDINGS AT #13032 HIGHLAND ROAD ARE LISTED ON THE HISTORIC SITES INVENTORY AS HD-2 HICKORY RIDGE AND HAVE AN MHT EASEMENT DATING TO 6/29/77. THIS PLAN CAME BEFORE THE HISTORIC DISTRICT COMMISSION ON JUNE 7, 2012 FOR ADVISORY COMMENTS. THE EXISTING STRUCTURES ARE TO REMAIN.
- HIGHLAND ROAD IS NOT A SCENIC ROAD.
- 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. 344B AND 344C WERE USED FOR THIS PROJECT.
- 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.
- BC&E APPROVAL WILL BE PROVIDED AT THE FINAL PLAN PHASE.
- THE PROPOSED SUBDIVISION AND RELATED CONSTRUCTION WILL NOT AFFECT ENVIRONMENTAL FEATURES OR BUFFERS.
- THE PROPOSED DWELLINGS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
- THE PROPOSED PRESERVATION PARCELS ARE IN CONFORMANCE WITH SECTION 105.F.2. OF THE HOWARD COUNTY ZONING REGULATIONS.

BUILDABLE PRESERVATION PARCEL "A", PRESERVES THE REMAINING PORTION OF THE EXISTING PROPERTY KNOWN AS #13032, IS MHT #20 ON THE HOWARD COUNTY REGISTER; KNOWN AS HICKORY RIDGE, STAT AREA 5-4 KEY RANKING, AS DESCRIBED IN MHT EASEMENT 6/9/77. THESE EXISTING STRUCTURES ARE TO REMAIN. BUILDABLE PRESERVATION PARCEL "A", AS PROPOSED, WILL: A) BECOME THE REMAINING BULK PORTION OF PARCEL 117; B) KEEP THE EXISTING FARM OPERATIONS INTACT C) HAS DIRECT ROAD ACCESS AND WILL SHARE ACCESS WITH PROPOSED LOTS 1-3 D) DOES NOT REQUIRE REMOVAL OF TREE STANDS AND HEDGEROWS AND E) WILL PRESERVE THE RURAL AND SCENIC QUALITY OF THE PROPERTY.

BUILDABLE PRESERVATION PARCEL "A" WILL BE OWNED BY JOHN AND ELLEN MCDANIEL WITH THE EASEMENT HOLDERS BEING MARYLAND HISTORICAL TRUST AND HOWARD COUNTY, MARYLAND

NON-BUILDABLE PRESERVATION PARCEL "B" BECOMES THE REMAINING BULK PORTION OF EXISTING LOT 29 (PLAT 15371). THERE ARE NO EXISTING STRUCTURES ON THIS LOT. NON BUILDABLE PRESERVATION PARCEL "B", AS PROPOSED, WILL: A) BECOME THE REMAINING BULK PORTION OF LOT 29, B) KEEP THE EXISTING FARM OPERATIONS INTACT AS HORSE PASTURE C) SHARES HIGHLAND ROAD ACCESS WITH PROPOSED LOTS 4-8 AND LOT 1 KOANDAH GARDENS ESTATES D) DOES NOT REQUIRE REMOVAL OF TREE STANDS AND HEDGEROWS AND E) WILL PRESERVE THE RURAL AND SCENIC QUALITY OF THE PROPERTY.

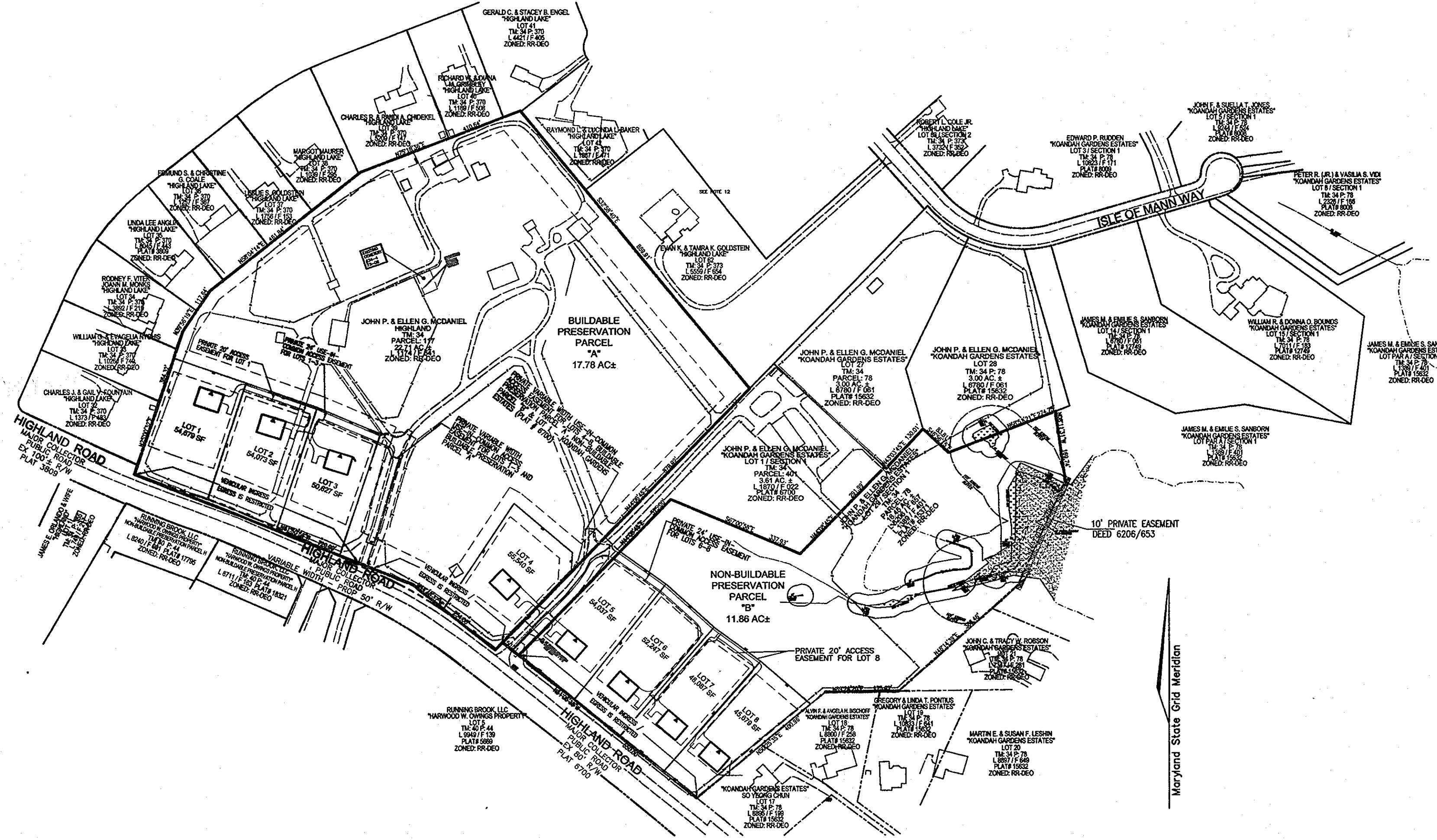
NON-BUILDABLE PRESERVATION PARCEL "B" WILL BE OWNED BY JOHN AND ELLEN MCDANIEL WITH THE EASEMENT HOLDERS BEING HOMEOWNERS ASSOCIATION AND HOWARD COUNTY, MARYLAND

THIS PLAN IS SUBJECT TO WP 13-034. ON OCTOBER 2, 2012, THE PLANNING DIRECTOR APPROVED THE REQUEST TO WAIVE SECTION 16.119(F)(3) WHICH STATES THAT FOR SUBDIVISIONS AND SITE DEVELOPMENT PLANS WITH NO OTHER MEANS OF ACCESS EXCEPT FROM A RESTRICTED ACCESS ROAD, THE DEPARTMENT OF PLANNING AND ZONING MAY APPROVE A SINGLE USE-IN-COMMON DRIVEWAY THAT MEETS MINIMUM SIGHT DISTANCE REQUIREMENTS AND A WAIVER TO SECTION 16.120(C)(2) WHICH REQUIRES ALL LOTS, PRESERVATION PARCELS OR BULK PARCELS FOR SINGLE-FAMILY DETACHED DWELLINGS TO HAVE MINIMUM LOT FRONTS ON APPROVED STREETS WITHIN A PUBLIC RIGHT-OF-WAY WHICH PROVIDES ACCESS TO THE PROPERTY. APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:

- THE APPLICANT MUST APPLY FOR AND RECEIVE APPROVAL FOR A DESIGN MANUAL WAIVER TO ALLOW MORE THAN 6 USERS ON A USE-IN-COMMON DRIVEWAY FOR PROPOSED LOTS 4 THROUGH 8, BUILDABLE PRESERVATION PARCEL "A" AND LOT 1 OF THE KOANDAH GARDENS ESTATES.
- AT THE SUBDIVISION PLAN REVIEW STAGE, THE PROPOSED USE-IN-COMMON DRIVEWAYS SHALL BE DESIGNED TO PROVIDE SUFFICIENT TURNING RADIUS AND WIDTH FOR USE BY EMERGENCY VEHICLES AND COMPLY WITH THE MINIMUM DESIGN MANUAL SIGHT DISTANCE CRITERIA ON HIGHLAND ROAD.
- COMPLIANCE WITH ATTACHED CONDITIONS / COMMENTS FROM THE DEVELOPMENT ENGINEERING DIVISION.
- THE OWNER/DEVELOPER IS STRONGLY ENCOURAGED TO MAINTAIN THE EXISTING CHERRY TREES AND PADDOCK FENCING ALONG HIGHLAND ROAD, LANDSCAPING (REQUIRED AND ENHANCED BUFFERS AND FENCING AS DISCUSSED BY THE HDC) SHOULD BE SHOWN ON THE PRELIMINARY EQUIVALENT SKETCH PLAN STAGE.
- NO SPECIMEN TREES ARE 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 FROM THEIR CURRENT WIDTH TO THE REQUIRED 16 FEET.
- TRASH AND RECYCLING COLLECTION WILL BE AT HIGHLAND ROAD WITHIN 5' OF THE EDGE OF THE COURTY ROADWAY.
- 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.

PRELIMINARY EQUIVALENT SKETCH PLAN

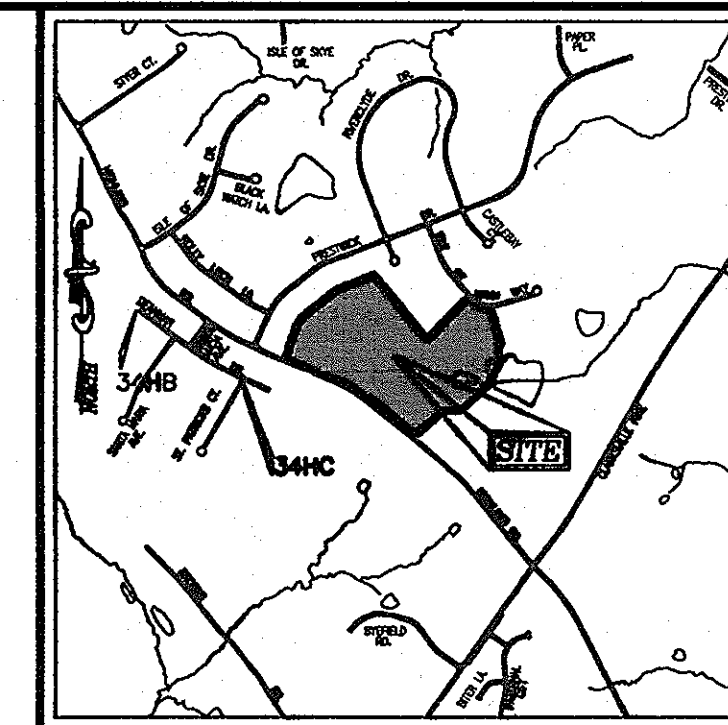
MCDANIEL PROPERTY
LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"
AND NON BUILDABLE PARCEL "B"
HOWARD COUNTY, MARYLAND



LOCATION MAP
1" = 200'

BENCHMARKS

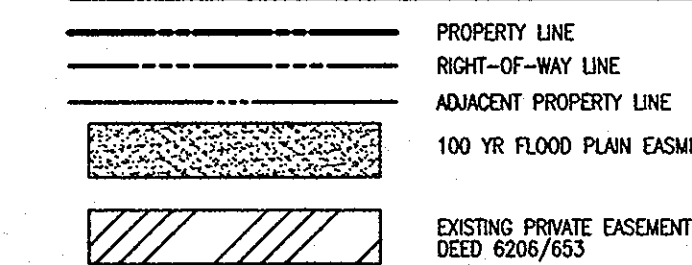
HOWARD COUNTY BENCHMARK 344B (CONC. MON.)
 N 553449.1287 E 1320244.3459 ELEV. 549.850
 HOWARD COUNTY BENCHMARK 344C (CONC. MON.)
 N 552735.3138 E 1321330.2220 ELEV. 553.078



VICINITY MAP
SCALE 1"=2000'
ADC MAP COORDINATE: 5051, F&G 1

SHEET INDEX		
COVER SHEET	DESCRIPTION	SHEET NO.
OVERALL SITE LAYOUT SHEET		1 OF 12
LAYOUT SHEET		2 OF 12
LAYOUT SHEET		3 OF 12
PRELIMINARY GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN		4 OF 12
PRELIMINARY GRADING, SOIL EROSION & SEDIMENT CONTROL PLAN		5 OF 12
PRELIMINARY LANDSCAPE PLAN		6 OF 12
PRELIMINARY LANDSCAPE PLAN		7 OF 12
PRELIMINARY DRAINAGE AREA MAP		8 OF 12
PRELIMINARY DRAINAGE AREA MAP		9 OF 12
STORMWATER MANAGEMENT NOTES & DETAILS		10 OF 12
PRELIMINARY FOREST CONSERVATION PLAN		11 OF 12
PRELIMINARY FOREST CONSERVATION NOTES & DETAILS		12 OF 12

LEGEND:



OWNER / DEVELOPER

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

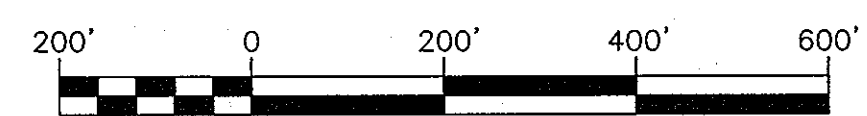
SITE ANALYSIS DATA

- A. PRESENT ZONING DESIGNATION: RR-DEO
 - B. GROSS AREA OF PROPERTY TRACT: 39.16 AC.
 - AREA OF PLAN SUBMISSION: 39.16 AC.
 - AREA OF WETLANDS AND BUFFERS: 1.88 AC*
 - AREA OF STREAMS AND BUFFERS: 2.03 AC*
 - AREA OF FLOODPLAIN: 0.58 AC.
 - AREA OF FOREST: 0.00 AC.
 - AREA OF STEEP SLOPES (15% & GREATER): 0.00 AC.
 - ERODIBLE SOILS: N/A
 - C. NET AREA OF PROJECT TRACT: 38.60 (39.16 - 0.56 AC. = 38.60)
 - D. AREA OF PROPOSED LOTS OR PARCELS: 9.5 AC* (LOTS 1-8), 29.6 AC* PRESERVATION PARCEL
 - E. PROPOSED USES FOR SITE AND STRUCTURES: RESIDENTIAL SINGLE FAMILY DETACHED HOMES
 - F. TOTAL NUMBER OF UNITS ALLOWED: 9 (39.16 - 0.56 AC. = 38.60 / 4.25=9.08)
 - G. PROPOSED WATER SYSTEM: PRIVATE WELL
 - H. PROPOSED SEWER SYSTEM: PRIVATE SEPTIC
 - I. DPZ FILE REFERENCES: ECP 12-048, WP 13-034
 - J. LIMIT OF DISTURBED AREA: 4.30 AC.
 - K. GREEN OPEN AREA: 36.90 AC.
 - L. PROPOSED IMPERVIOUS AREA: 1.16 AC. + 1.10 (1.10 EXISTING IMP) = 2.26 AC EX & PROPOSED
- * WETLAND AND BUFFER ACREAGE IS PART OF STREAM & BUFFER ACREAGE

MAPPED SOILS TYPES

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	HYDRIC INCLUSIONS	K-FACTOR	PRIME FARMLAND	CLOSURE POTENTIAL
GbA	GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbC	GLENVILLE-BAILE 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, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC



TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS.

Robert H. Vogel
 PLANNING DIRECTOR

Maureen Roseman
 COUNTY HEALTH OFFICER

DATE: 6/10/2013

PRELIMINARY EQUIVALENT SKETCH PLAN
 COVER SHEET
 MCDANIEL PROPERTY
 LOTS 1-8, BUILDABLE PRESERVATION PARCEL "A"
 AND NON-BUILDABLE PARCEL "B"
 A SUBDIVISION OF THE MCDANIEL PROPERTY (P. 147) AND
 A RESUBDIVISION OF LOT 29 - KOANDAH GARDENS ESTATES (PLAT 15371)

TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4 ZONED: RR-DEO
 5TH ELECTION DISTRICT PARCELS 117 & 78 (LOT 29)
 HOWARD COUNTY, MARYLAND
 DPE REFS: S 89-07, P 87-663, F 02-004, P 01-043, F 07-200, F 00-076
 F 00-068, F 88-151, F 87-143, F 02-059, ECP 12-048, WP 13-034

ROBERT H. VOGEL
ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043 TEL: 410-461-7666
 FAX: 410-461-1891

DESIGN BY: RHV / EDS
 DRAWN BY: EDS/KG
 CHECKED BY: RHV
 DATE: FEBRUARY 2013
 SCALE: AS SHOWN
 W.O. NO.: 08-43

1 SHEET OF 12

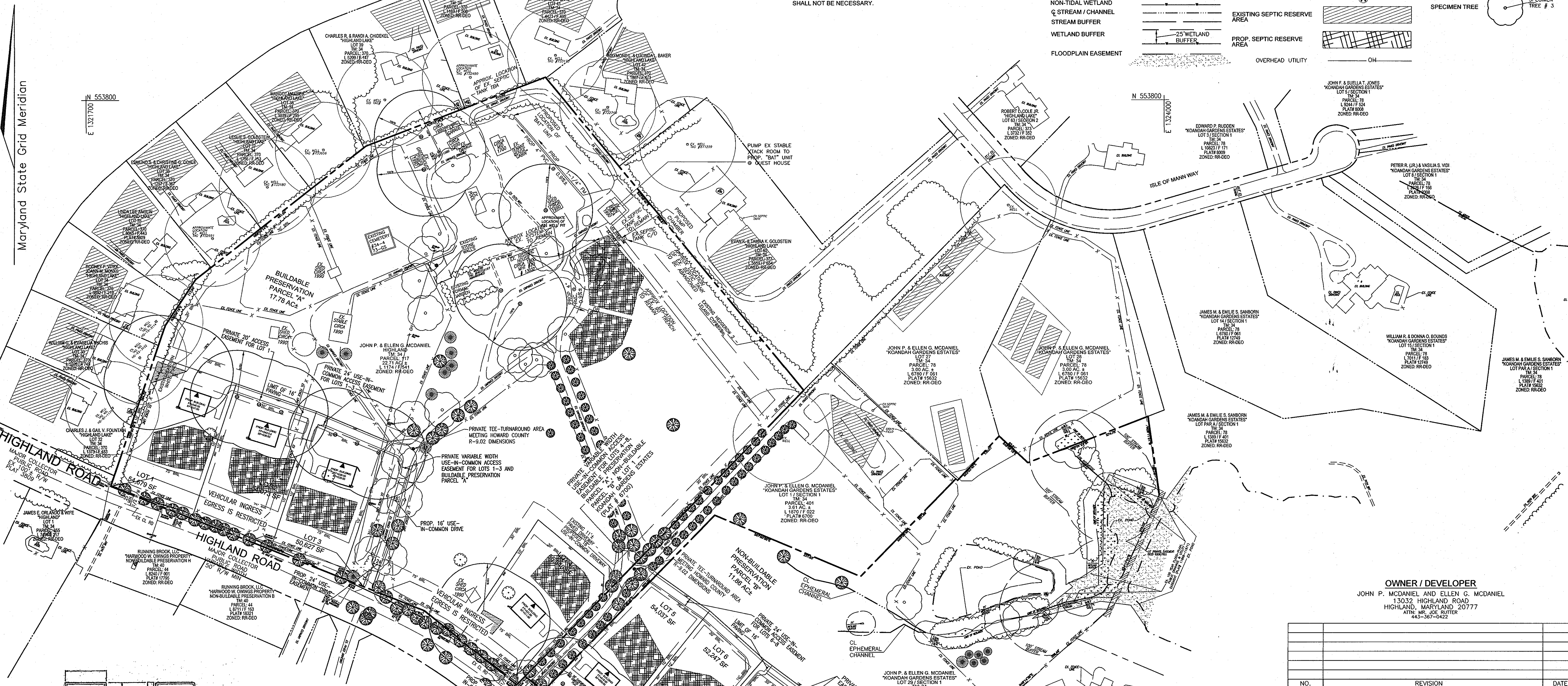
MAPPED SOILS TYPES						
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT ORGANICS	K-FACTOR	PERCENT SAND
Gba	GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES
Gcb	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES
Gcb	GLENNVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO
W	WATER					PARTIALLY

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

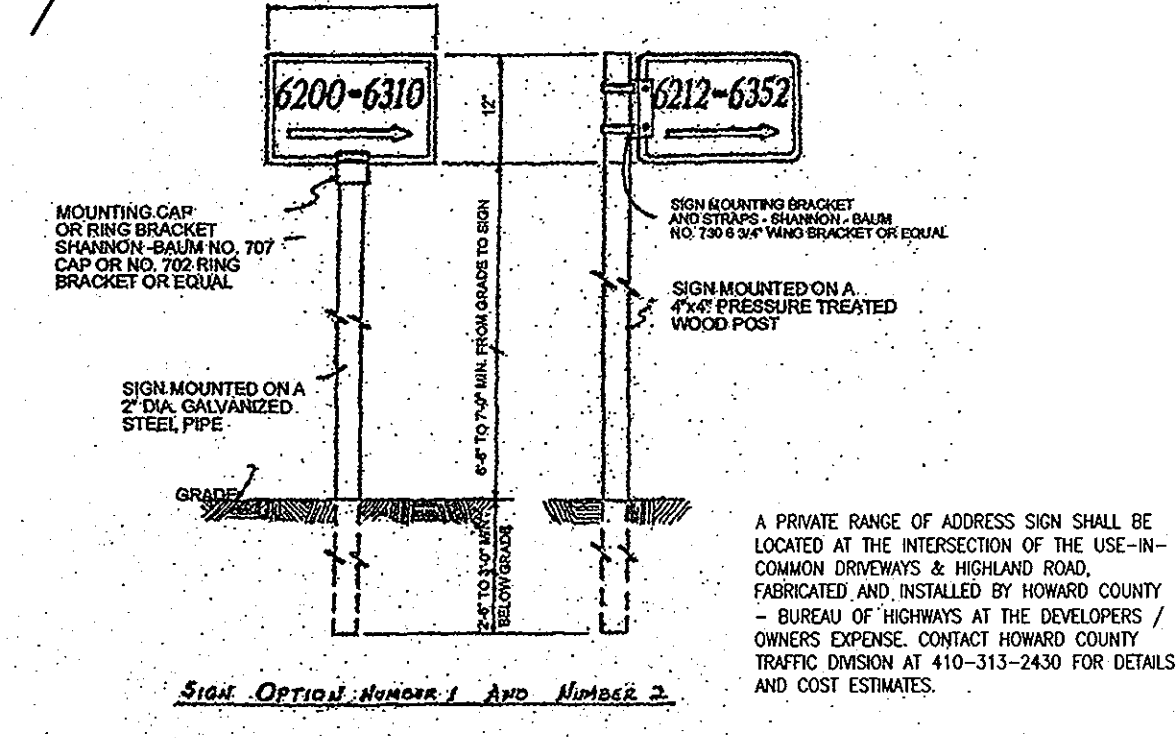
THESE AREAS DESIGNATE A MINIMUM 10,000 SQ FT PRIVATE SEWAGE EASEMENT REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BE NULL AND VOID UPON CONNECTION 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 WELL	EX WELL (W)	EXISTING VEGETATION (APPROXIMATE LOCATION)	(Symbol)
EXISTING TREELINE	(Symbol)	PROPERTY LINE	(Symbol)	SPECIMEN TREE	(Symbol)
SOIL BOUNDARY	Gba Gcb	PROP. WELL AREA	(Symbol)		
NON-TIDAL WETLAND	(Symbol)	PROP. WELL	(Symbol)		
STREAM / CHANNEL	(Symbol)	EXISTING SEPTIC RESERVE AREA	(Symbol)		
STREAM BUFFER	(Symbol)	PROP. SEPTIC RESERVE AREA	(Symbol)		
WETLAND BUFFER	25' WETLAND BUFFER				
FLOODPLAIN EASEMENT	(Symbol)	OVERHEAD UTILITY	OH		

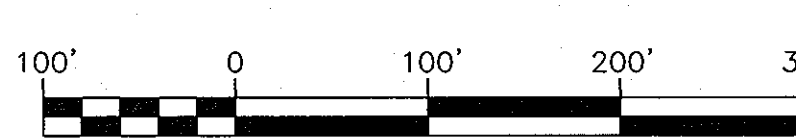


OVERALL LAYOUT
SCALE: 1"=100'



A PRIVATE RANGE OF ADDRESS SIGN SHALL BE LOCATED AT THE INTERSECTION OF THE USE-IN-COMMON DROWNS & HIGHLAND ROAD. FABRICATED AND INSTALLED BY HOWARD COUNTY - BUREAU OF HIGHWAYS AT THE DEVELOPERS / OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-2430 FOR DETAILS AND COST ESTIMATES.

- 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."



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

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH 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
 092, BE'S: S 99-07, P 87-053, F 02-004, P 01-003, F 87-200, F 90-076
 F 94-068, F 95-121, F 97-145, F 02-057, D2-12-046, W-13-034

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. 16193 EXPIRATION DATE: 09-29-2014

DESIGN BY: RHY / EDS
 DRAWN BY: EDS/KG
 CHECKED BY: RHY
 DATE: FEBRUARY 2013
 SCALE: AS SHOWN
 W.O. NO.: 08-43

2 SHEET OF 12

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS.

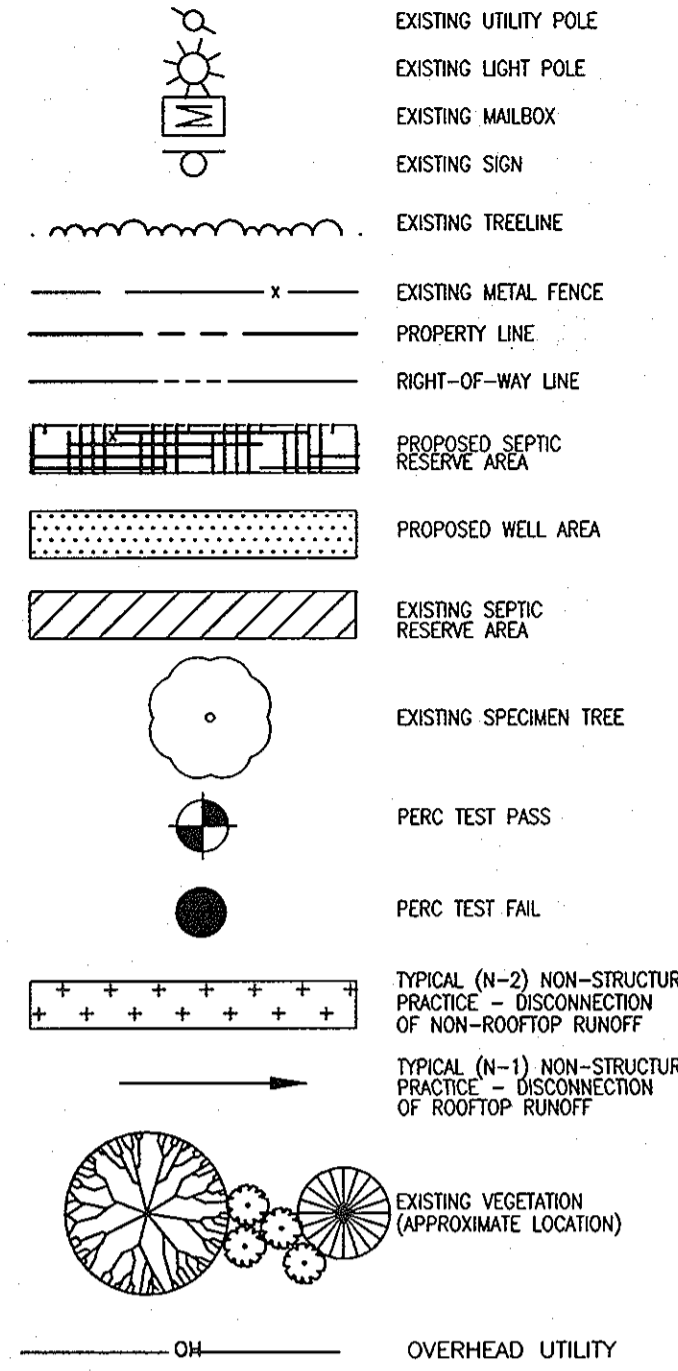
Markie M. Lyell
 PLANNING DIRECTOR

B. Nijam for Maura Roszman
 COUNTY HEALTH OFFICER

6/4/12 DATE
 6/10/2013 DATE

ALL PROJECTS OR ANY PART THEREOF MUST BE SUBMITTED TO THE LOCAL HEALTH OFFICER FOR REVIEW AND APPROVAL.

LEGEND:



APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS.
Barbara Moore Rossman 6/10/2013
 COUNTY HEALTH OFFICER 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.

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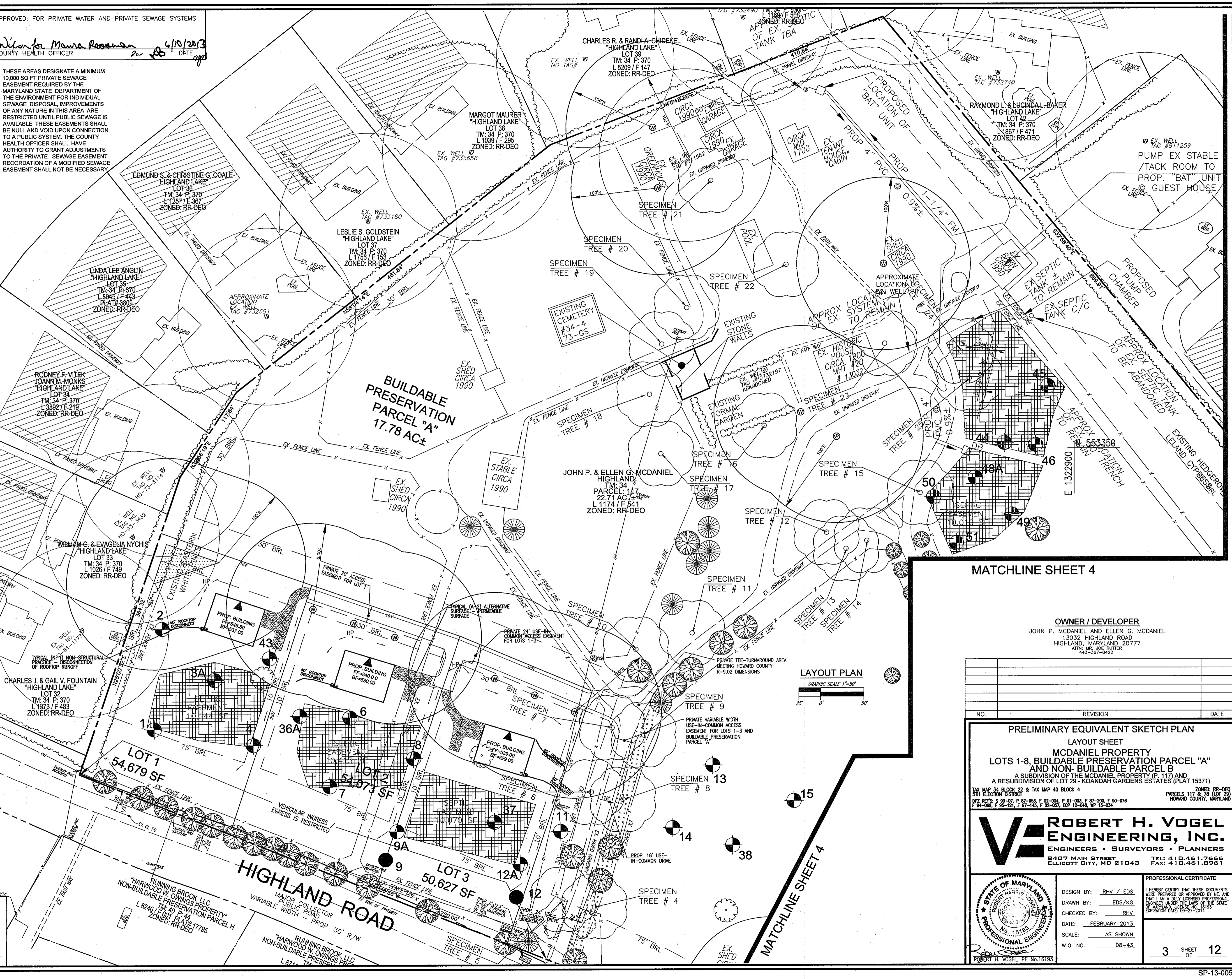
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5. EXISTING PASTURE FENCING WILL REMAIN FOR THE EXISTING HORSE OPERATION, BUT MAY BE RELOCATED AT THE TIME OF SALE AND BUILDING ON LOTS 1-8.

N 553350
 E 1321500

HIGHLAND ROAD
 MAJOR COLLECTOR PUBLIC ROAD
 EX. 100' R/W
 PLAT 3609

N 552950
 E 1321500

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY
David P. Ayell
 PLANNING DIRECTOR
 DATE 6/10/13



LAYOUT PLAN
 GRAPHIC SCALE 1"=50'

MATCHLINE SHEET 4

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

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH 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)
 TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4
 5TH ELECTION DISTRICT
 ZONED: RR-DEO
 PARCELS 117 & 78 (LOT 29)
 HOWARD COUNTY, MARYLAND
 997, 997S: S 99-07, P 97-053, F 02-004, P 01-003, F 97-200, F 90-078
 94-080, F 95-21, F 97-165, F 02-051, E2P 12-046, W2P 13-034

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PROFESSIONAL CERTIFICATE

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 NO. 13193

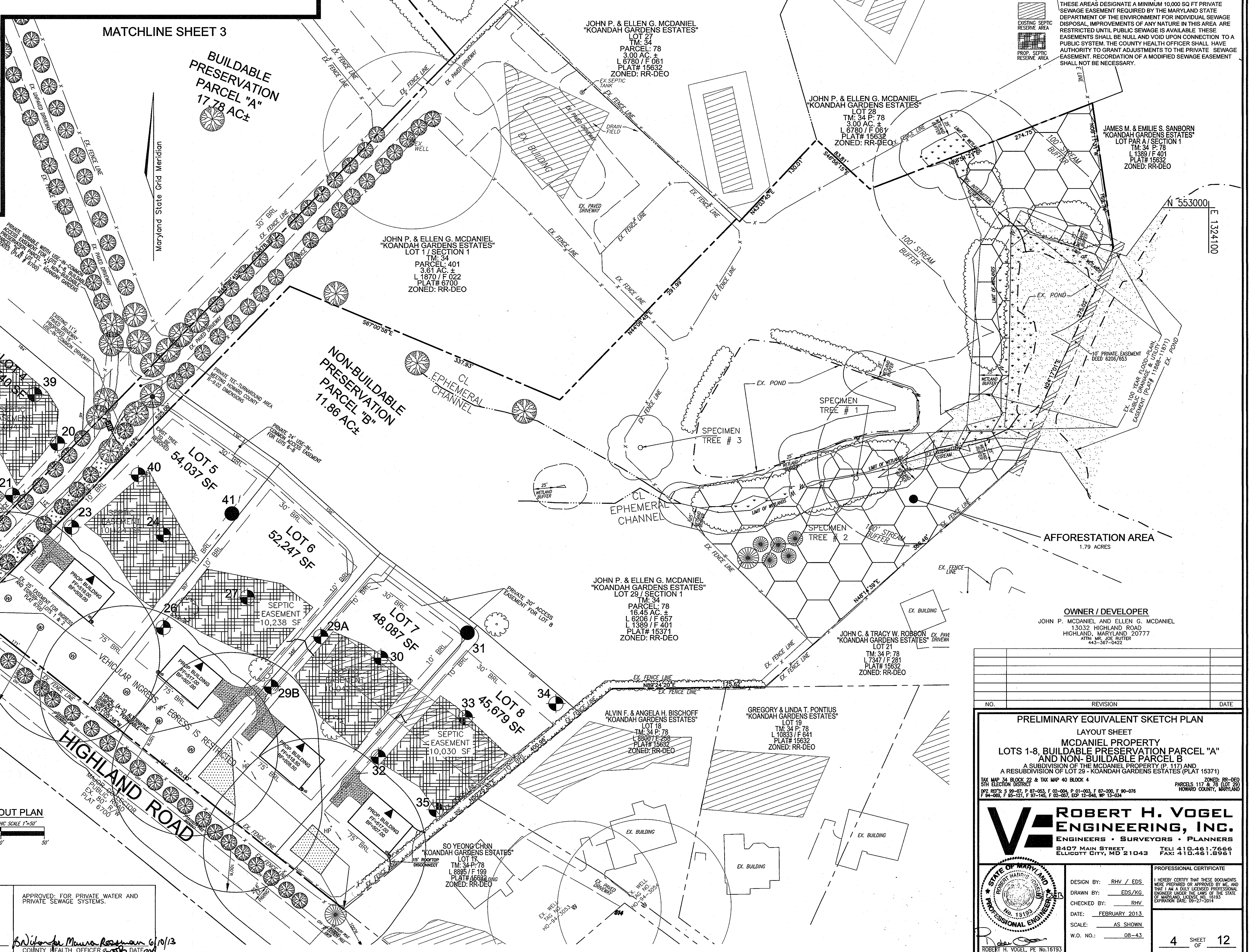
DESIGN BY: RHY / EDS
 DRAWN BY: EDS/KG
 CHECKED BY: RHY
 DATE: FEBRUARY 2013
 SCALE: AS SHOWN
 W.O. NO.: 08-43

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. 14193. EXPIRES DATE 07-27-2014.

3 SHEET OF 12

LEGEND:

- EXISTING TREELINE
- EXISTING METAL FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SEPTIC RESERVE AREA
- PROPOSED WELL AREA
- EXISTING SEPTIC RESERVE AREA
- TYPICAL (N-2) NON-STRUCTURAL PRACTICE - DISCONNECTION OF ROOFTOP RUNOFF
- TYPICAL (N-1) NON-STRUCTURAL PRACTICE - DISCONNECTION OF ROOFTOP RUNOFF
- EXISTING VEGETATION (APPROXIMATE LOCATION)
- OH OVERHEAD UTILITY
- EXISTING SPECIMEN TREE
- PERC TEST PASS
- PERC TEST FAIL
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN



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.

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
1332600
1332600

LAYOUT PLAN
GRAPHIC SCALE 1"=50'
25' 0' 50'

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

PLANNING DIRECTOR

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS.

DATE: 6/10/13
COUNTY HEALTH OFFICER

NO. REVISION DATE

PRELIMINARY EQUIVALENT SKETCH 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)

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

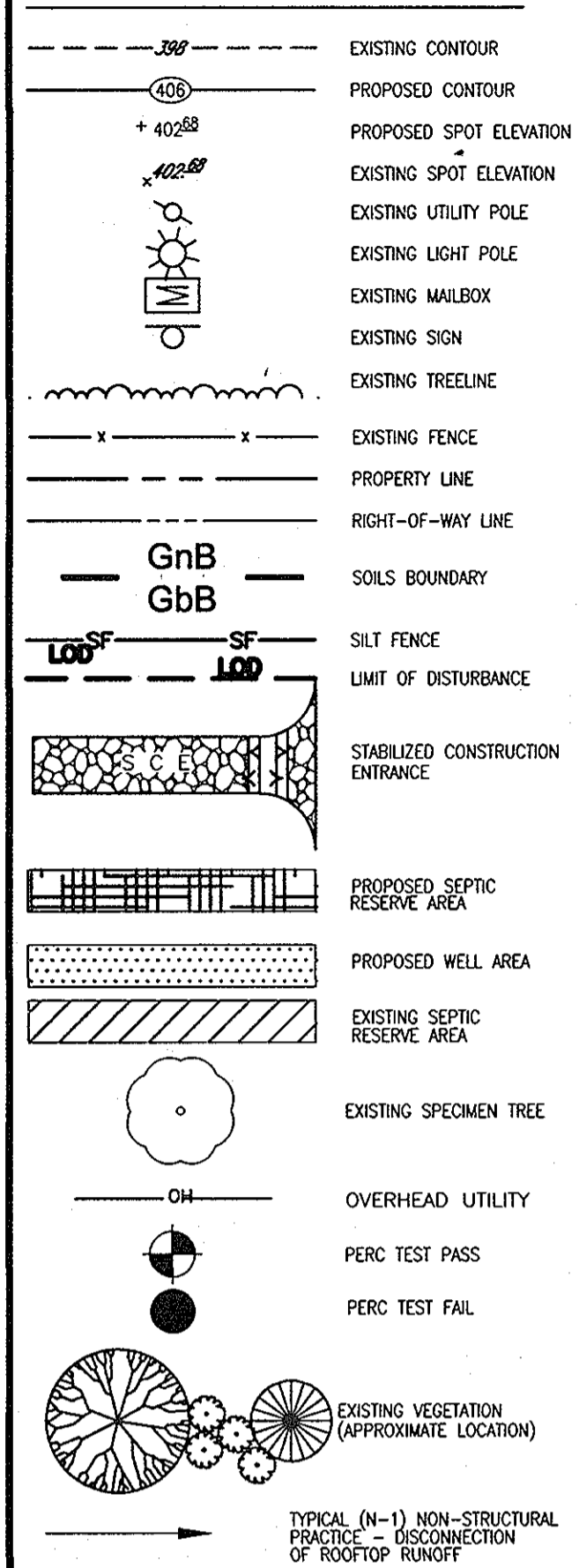
ROBERT H. VOGEL ENGINEERING, INC.
ENGINEERS • SURVEYORS • PLANNERS
8407 MAIN STREET ELLICOTT CITY, MD 21043 TEL: 410.461.7666 FAX: 410.461.8961

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. 16193 EXPIRATION DATE: 09-27-2014

DESIGN BY: RHY / EDS
DRAWN BY: EDS/KG
CHECKED BY: RHY
DATE: FEBRUARY 2013
SCALE: AS SHOWN
W.O. NO.: 08-43

4 SHEET OF 12

LEGEND:



APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS.

Paula M. Ross
COUNTY HEALTH OFFICER
DATE: 6/19/2013

MAPPED SOILS TYPES

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	MOOR	PERCENT ORGANIC MATTER	K-FACTOR	PERCENT SAND	PERCENT SILT	PERCENT CLAY	PERCENT ORGANIC MATTER
G5A	CLAUDESTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO	NO	NO	NO
G5B	CLAUDESTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO	NO	NO	NO
G5C	CLEWELL-BULLY SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO	PARTIALLY	PARTIALLY	PARTIALLY	PARTIALLY

TAKEN FROM USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
*BALE COMPONENT OF G5B, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

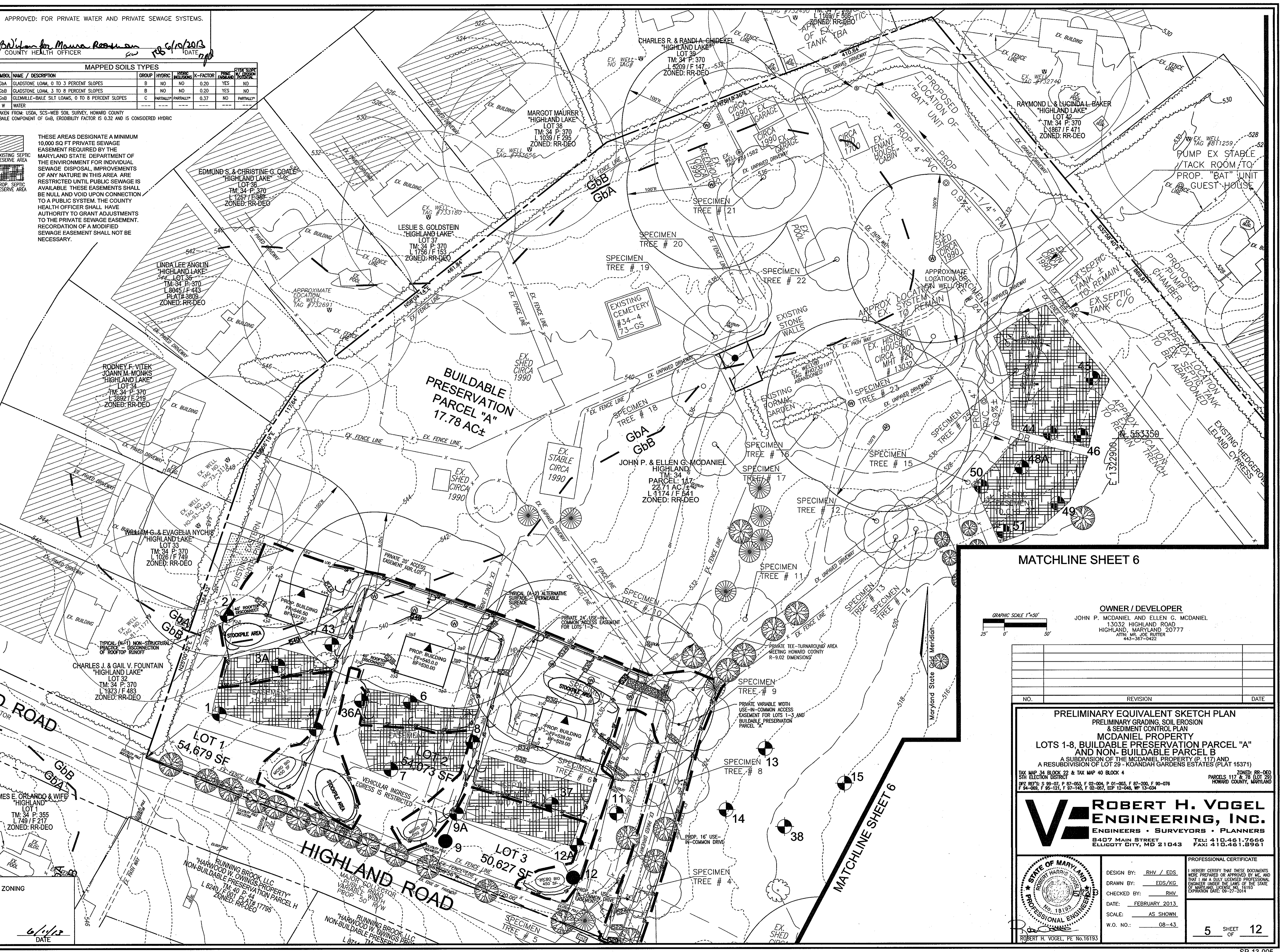
THESE AREAS DESIGNATE A MINIMUM 10,000 SQ FT PRIVATE SEWAGE EASEMENT REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWAGE IS AVAILABLE. THESE EASEMENTS SHALL BE NULL AND VOID UPON CONNECTION 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.

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.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Robert H. Vogel
PLANNING DIRECTOR
DATE: 6/19/2013



MATCHLINE SHEET 6

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

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN
PRELIMINARY 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 - KOANDAH GARDENS ESTATES (PLAT 15371)
TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4
ZONED: RR-DEO
5TH ELECTION DISTRICT
92° 06' 30" S 89° 07' P 87'-05.3, F 02'-00.4, P 01'-00.3, F 87'-20.0, F 90'-07.6
94'-06.9, F 85'-12.1, F 87'-14.5, F 02'-05.1, E 12'-04.6, W 13'-01.4
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: 410.461.8961

PROFESSIONAL CERTIFICATE

STATE OF MARYLAND
ROBERT H. VOGEL
No. 18,190
Professional Engineer

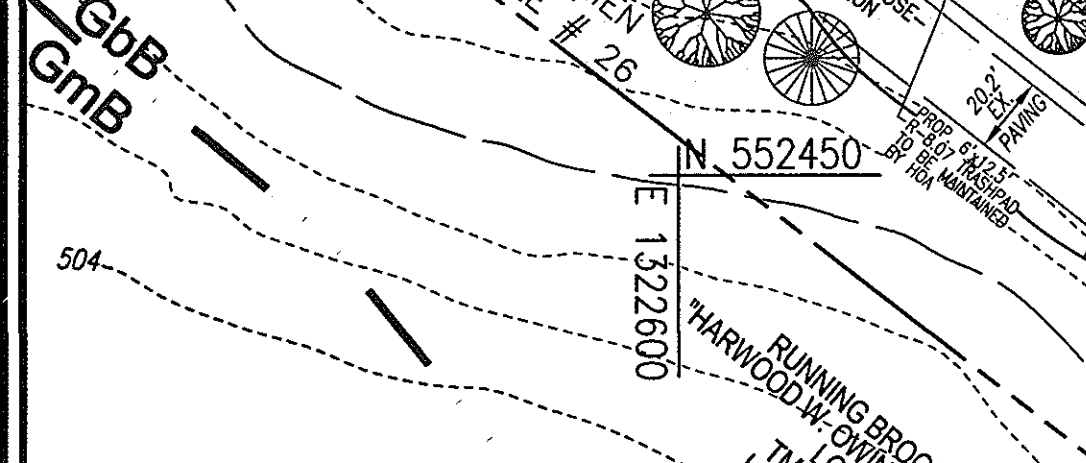
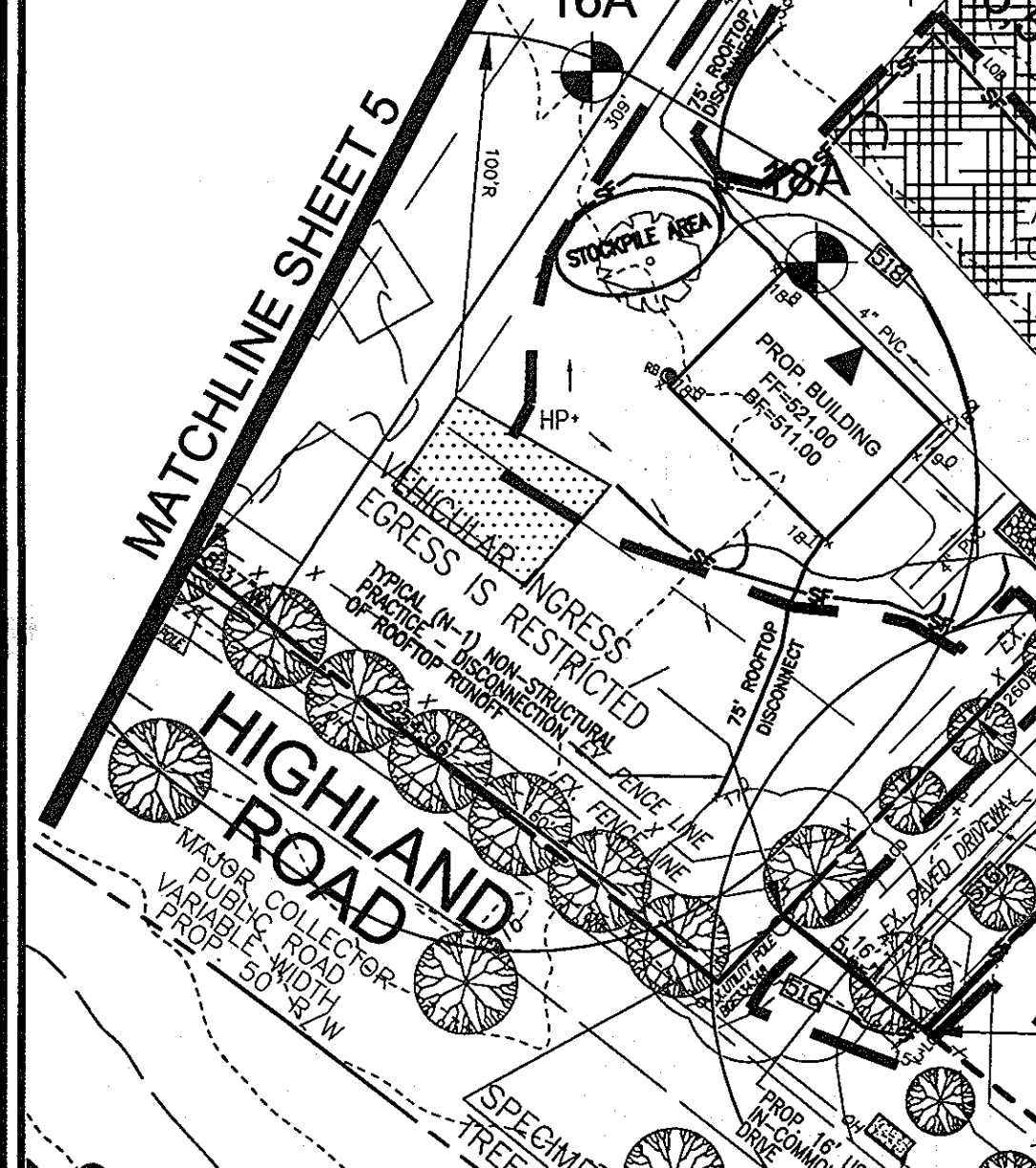
DESIGN BY: RHV / EDS
DRAWN BY: EDS/KG
CHECKED BY: RHV
DATE: FEBRUARY 2013
SCALE: AS SHOWN
W.D. NO.: 08-43

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. 18190, EXPIRES 02/28/2014.

5 SHEET OF 12

LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING TREELINE
- EXISTING FENCE PROPERTY LINE
- RIGHT-OF-WAY LINE
- SOILS BOUNDARY
- SILT FENCE
- LIMIT OF DISTURBANCE
- EXISTING SPECIMEN TREE
- PERC TEST PASS
- PERC TEST FAIL
- STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED SEPTIC RESERVE AREA
- PROPOSED WELL AREA
- EXISTING SEPTIC RESERVE AREA
- TYPICAL (N-1) NON-STRUCTURAL PRACTICE DISCONNECTION OF ROOFTOP RUNOFF
- EXISTING VEGETATION (APPROXIMATE LOCATION)



- NOTES:**
- NO SPECIMEN TREES ARE TO BE REMOVED.
 - NO STORM DRAINS ARE PROPOSED ONSITE.
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 - ALL DWELLINGS ARE TO FACE INTO THE PROJECT, REAR OF DWELLINGS TOWARD HIGHLAND ROAD.
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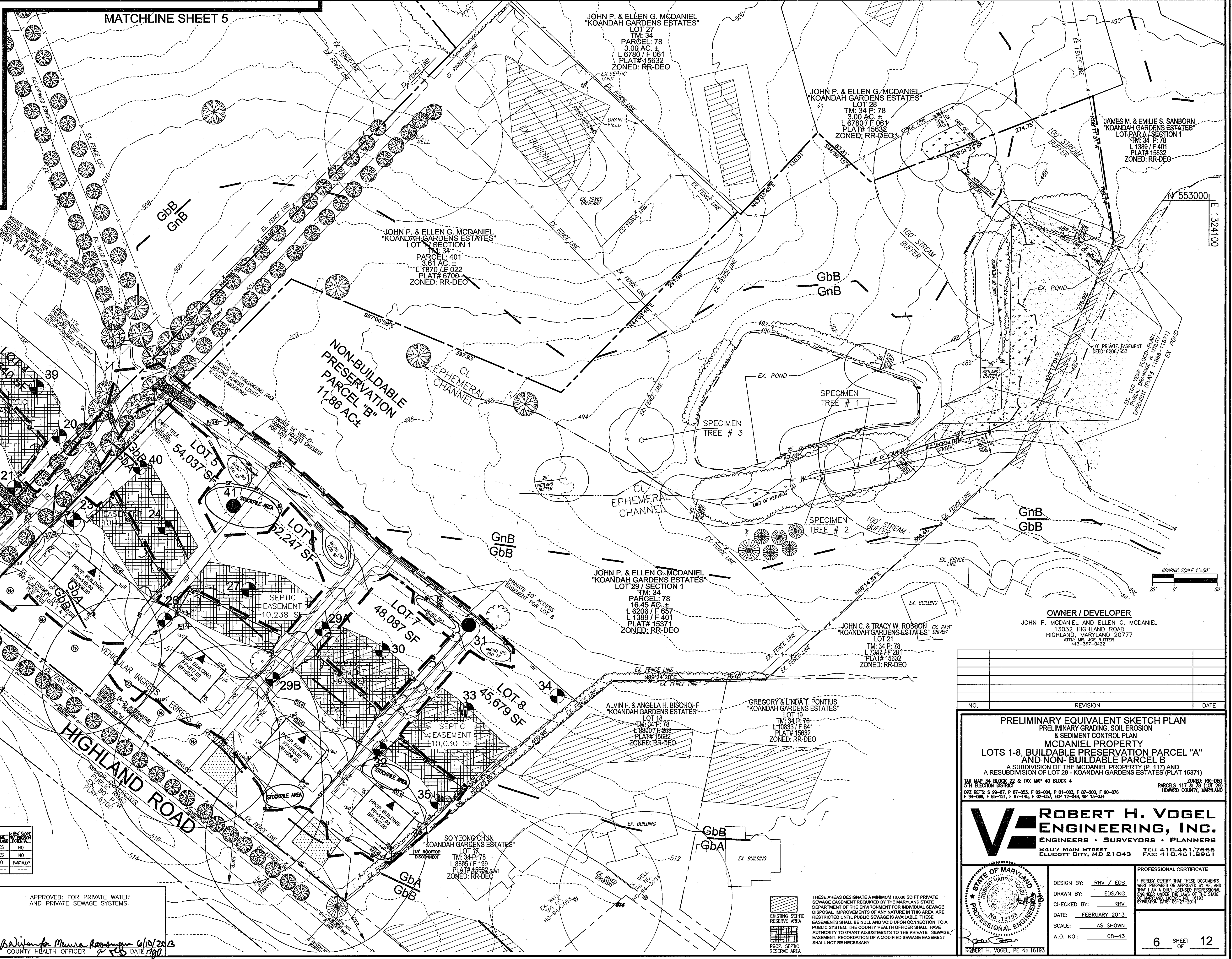
MAPPED SOILS TYPES

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRO	HYDROLOGIC	K-FACTOR	PERM. PORESPACE	CITY STATE
GbA	GLAUSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbB	GLAUSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbC	CLEVELLE-DALE 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
 *BALE COMPONENT OF GbB, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRO
TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS.
 APPROVED: *Barbara Moura* 6/10/2013
 COUNTY HEALTH OFFICER DATE

PLANNING DIRECTOR DATE 6/10/13



NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN
 PRELIMINARY 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 - 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 867'S: S 99-07, P 87-063, F 02-004, P 01-003, F 67-200, F 90-076
 F 94-069, F 95-121, F 97-143, F 02-051, 02-12-045, 07-13-024

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

DESIGN BY: RHV / EDS
 DRAWN BY: EDS/KG
 CHECKED BY: RHV
 DATE: FEBRUARY 2013
 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 FULLY LICENSED PROFESSIONAL
 ENGINEER UNDER THE LAWS OF THE STATE
 OF MARYLAND, LICENSE NO. 16193
 EXPIRES DATE: 09-27-2014

6 SHEET OF 12

SYMBOL / NAME / DESCRIPTION		GROUP	HYDRIC	PERCENTAGE	K-FACTOR	PERCENTAGE	PERCENTAGE
GbA	GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbB	GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbC	GLENNVILLE-SALE 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
 *SCALE COMPONENT OF GbB, EROSION FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

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LEGEND	
EXISTING CONTOUR	382 380
EXISTING TREELINE	
SOIL BOUNDARY	GnB Gbb
EXISTING WELL	⊕
PROPERTY LINE	---
PROP. WELL AREA	
PROP. WELL	⊕
EXISTING SEPTIC RESERVE AREA	
PROP. SEPTIC RESERVE AREA	
SPOT ELEVATION	370
SPECIMEN TREE	SPECIMEN TREE # 3
EXISTING VEGETATION (APPROXIMATE LOCATION)	
BG & E GREEN ZONE	
BG & E YELLOW ZONE	
OVERHEAD UTILITY	OH
PROPOSED SHADE TREE TYP.	
PROPOSED EVERGREEN TREE TYP.	

NOTES:
 1. NO SPECIMEN TREES ARE TO BE REMOVED.
 2. NO STORM DRAINS ARE PROPOSED ONSITE.
 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."

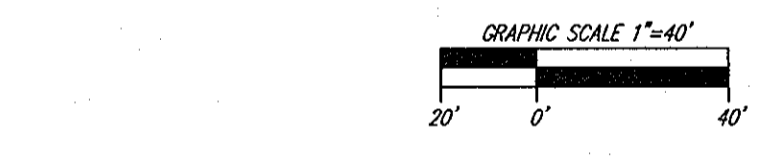
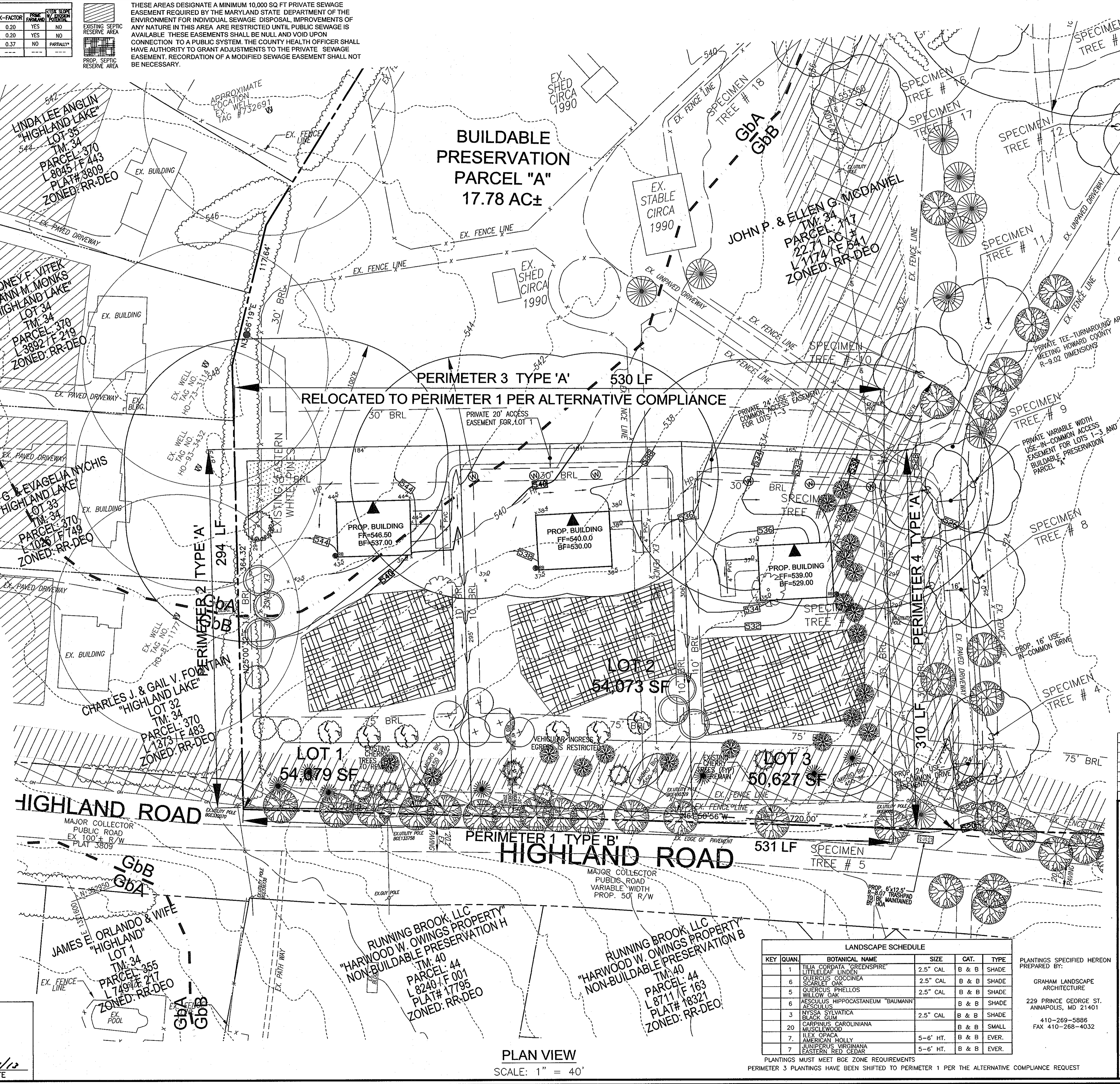
SCHEDULE 'A' PERIMETER LANDSCAPE EDGE					
CATEGORY	ADJACENT TO PERIMETER AND ROADWAYS				TOTAL
	B	A	C	A	
PERIMETER / FRONTAGE DESIGNATION	1*	2*	3*	4*	
LANDSCAPE TYPE	B	A	C	A	
LINEAR FEET OF ROADWAY FRONTAGE / PERIMETER	531	294	530	310	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No*	No	No	No	
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET DESCRIBE BELOW IF NEEDED)	No	No	No	No	
NUMBER OF PLANTS REQUIRED	1:50	1:1	1:60	9	31
SHADE TREES	1:40	14			14
EVERGREEN TREES					
SHRUBS					
NUMBER OF PLANTS PROVIDED	7	5	9		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 SITE 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 BGE ZONE COMPLIANT
 FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$114,000.00 FOR THE REQUIRED 31 SHADE TREES (9,300), 14 EVERGREEN TREES (2,100).

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Mark H. Vogel
 PLANNING DIRECTOR

6/16/10
 DATE



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

PRELIMINARY EQUIVALENT SKETCH PLAN
 PRELIMINARY 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
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 TAX MAP 34 BLOCK 22 & TAX MAP 40 BLOCK 4
 5TH ELECTION DISTRICT
 992, 895'S S 99-01, P 87-053, E 02-004, P 01-013, F 97-000, F 90-076
 94-069, F 89-121, F 87-145, F 02-057, E 12-046, P 13-034
 PARCELS 117 & 78 (LOT 29)
 HOWARD COUNTY, MARYLAND

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

DESIGN BY: RHV / EDS
 DRAWN BY: EDS/KG
 CHECKED BY: RHV
 DATE: FEBRUARY 2013
 SCALE: AS SHOWN
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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
 EXPIRES: 09-27-2014
 ROBERT H. VOGEL, PE No.16193

7 SHEET OF 12

KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.	TYPE
1		TILIA CORDATA 'GREENSPIRE'	2.5" CAL	B & B	SHADE
6		QUERCUS COCCINEA	2.5" CAL	B & B	SHADE
5		QUERCUS PHellos	2.5" CAL	B & B	SHADE
6		WILLOW OAK	2.5" CAL	B & B	SHADE
3		AEQUOLUS HIPPOCASTANEUM 'BAUMANN'		B & B	SHADE
3		IFOSA SYLVAICA	2.5" CAL	B & B	SHADE
20		MUSCULWOOD		B & B	SMALL
7		ILEX OPACA	5-6" HT.	B & B	EVER.
7		AMERICAN HOLLY	5-6" HT.	B & B	EVER.

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'

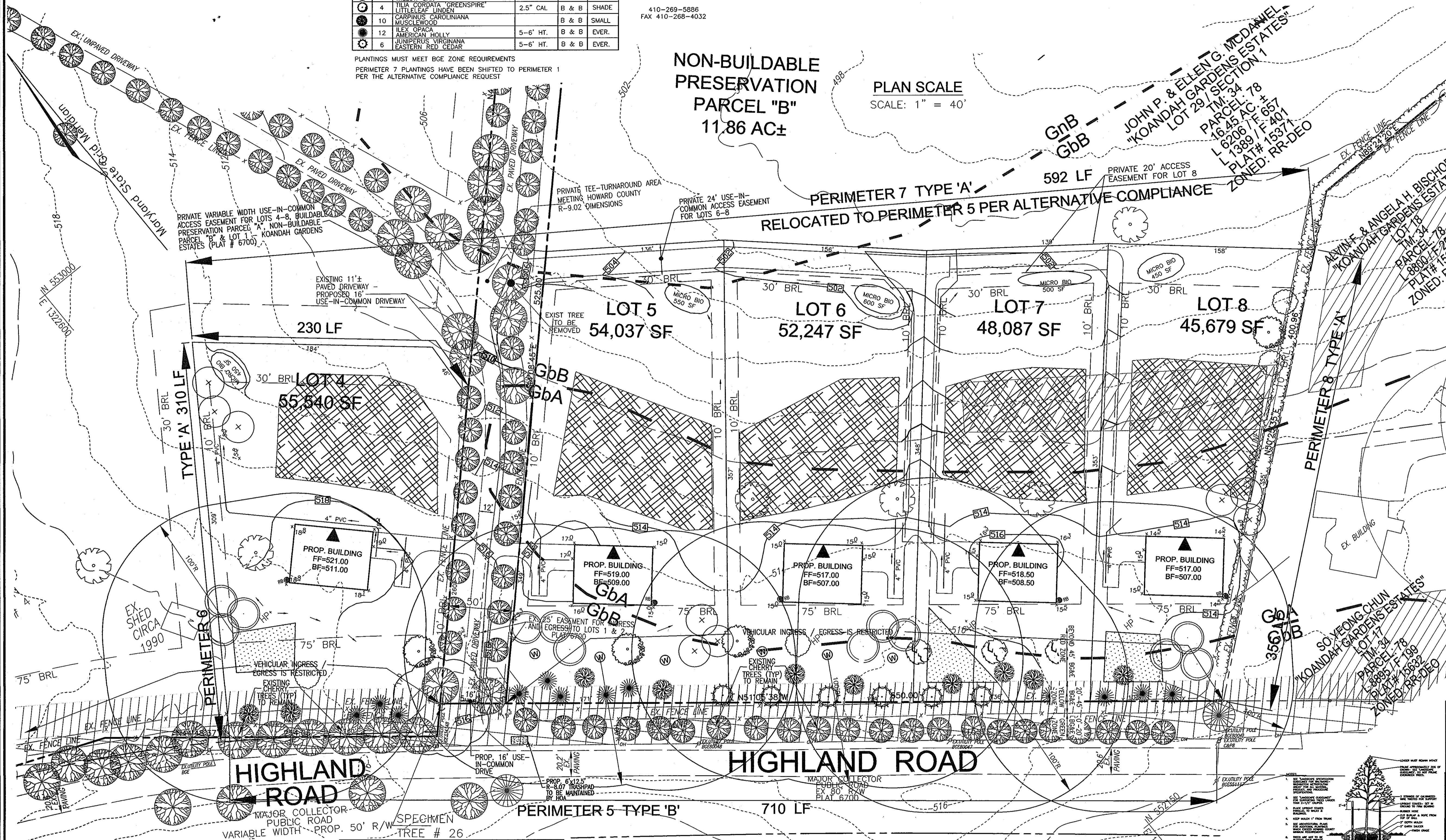
MAPPED SOILS TYPES						
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	PERCENT CLAY	K-FACTOR	PERCENT SAND
Ga	GLAUCONITE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES
Gb	GLAUCONITE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES
Gc	GLENNVILLE-BALE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	PARTIALLY	PARTIALLY	0.37	NO
W	WATER					

TAKEN FROM USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
 *BALE COMPONENT OF GbC, ERODIBILITY FACTOR IS 0.32 AND IS CONSIDERED HYDRIC

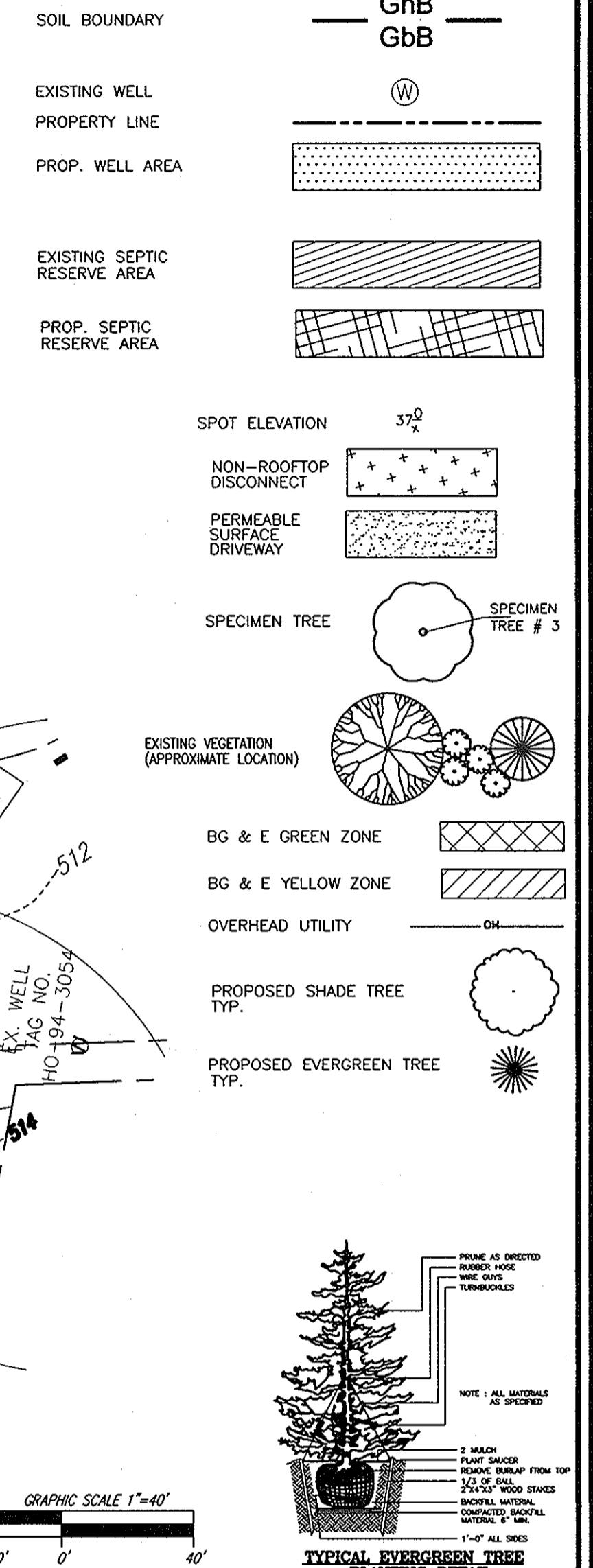
LANDSCAPE SCHEDULE						
KEY	QUAN.	BOTANICAL NAME	SIZE	CAT.	TYPE	
1	3	ASCULUS HIPPOCASTANEUM 'BAUMANN' AESCULUS	2.5" CAL	B & B	SHADE	
2	4	NYSSA SYLVATICA BLACK OAK	2.5" CAL	B & B	SHADE	
3	12	QUERCUS COCCINEA SCARLET OAK	2.5" CAL	B & B	SHADE	
4	9	QUERCUS PHELLOS WILLOW OAK	2.5" CAL	B & B	SHADE	
5	4	TILIA CORDA 'GREENSPIRE' LITTLELEAF LINDEN	2.5" CAL	B & B	SHADE	
6	10	CARPINUS CAROLINIANA MUSKOGEE	5-6" HT.	B & B	SMALL	
7	12	ILEX OPACA AMERICAN HOLLY	5-6" HT.	B & B	EVER.	
8	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

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



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



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

BG & E NOTES:

- THE LANDSCAPING ON WIREZONE (40' FROM BGE POLES) IS IN ACCORDANCE WITH BGE LIST OF TREES AND PLANTS.
- 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.
- 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 OF 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 CONSTRUCTION ENERGY'S NEED TO PROTECT ITS TRANSMISSION LINES AND WILL NOT UNREASONABLY WITHHOLD PERMISSION.

TENTATIVELY APPROVED
 DEPARTMENT OF PLANNING AND ZONING
 HOWARD COUNTY

Mark M. Coughlin
 PLANNING DIRECTOR

6/4/12
 DATE

SCHEDULE 'A' PERIMETER LANDSCAPE EDGE				
CATEGORY	AMOUNT TO PERIMETER AND ROWING	AMOUNT TO PERIMETER AND ROWING	AMOUNT TO PERIMETER AND ROWING	TOTAL
PERIMETER/FRONTAGE DESIGNATION	5' A	6' A	7' A	8' A
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
SHADE TREES	18	18	18	18
EVERGREEN TREES	18	18	18	18
NUMBER OF PLANTS PROVIDED				
SHADE TREES	18(1)	18	18	18
EVERGREEN TREES	18	18	18	18
OTHER TREES (2:1 SUBSTITUTION)	10	10	10	10
SHRUBS (10:1 SUBSTITUTION)				
DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED				

* PERIMETER 5 ALONG HIGHLAND ROAD HAS 28 EXISTING TREES PROPOSED TO REMAIN PENDING BGE APPROVAL. CREDIT HAS NOT BEEN TAKEN FOR THESE EXISTING TREES AS PART OF THE ALTERNATIVE COMPLIANCE REQUEST.
 ** 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(22,200).

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 FENCINGS WILL REMAIN FOR THE EXISTING HORSE OPERATION, BUT MAY BE RELOCATED AT THE TIME OF SALE AND BUILDING ON LOTS 1-8.

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 SPACES 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 ANN 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.

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

PRELIMINARY EQUIVALENT SKETCH PLAN
PRELIMINARY 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)

BPZ REF'S: S 99-07, P 87-053, F 02-004, P 01-003, F 87-200, F 90-076, F 94-068, F 95-121, F 97-144, F 97-145, F 02-057, EOP 12-046, WP 13-034

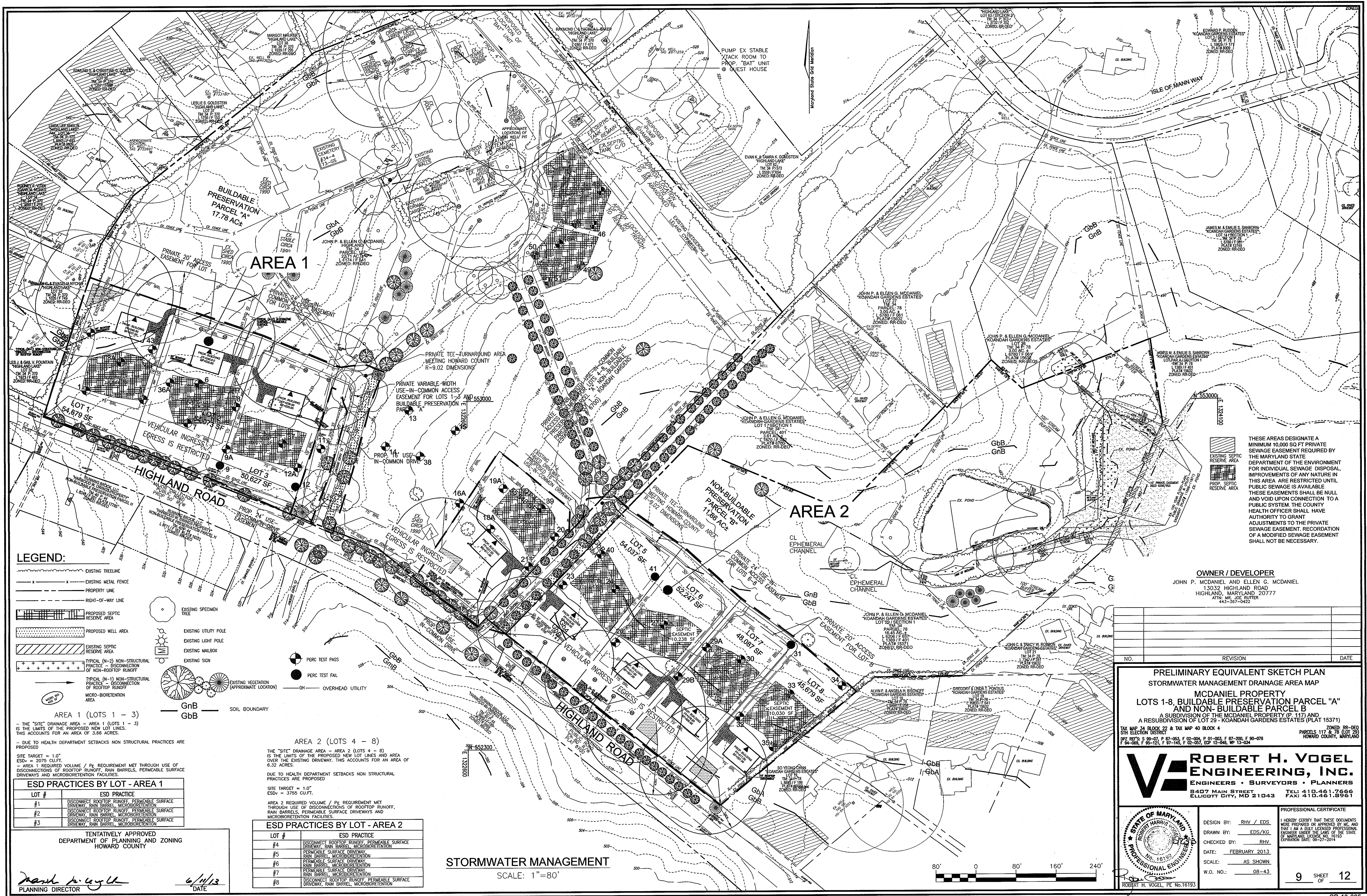
ROBERT H. VOGEL ENGINEERING, INC.
 ENGINEERS • SURVEYORS • PLANNERS
 8407 MAIN STREET
 ELLICOTT CITY, MD 21043
 TEL: 410.461.7666
 FAX: 410.461.8961

DESIGN BY: RHV / EDS
 DRAWN BY: EDS/KC
 CHECKED BY: RHV
 DATE: FEBRUARY 2013
 SCALE: AS SHOWN
 W.D. NO.: CB-43

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

8 SHEET OF 12

K:\PROJECTS\08-43\ENGR\DWG\PRE-EO SKETCH\01 PRE LANDSCAPE.DWG



LEGEND:

- EXISTING TREELINE
- EXISTING METAL FENCE
- PROPERTY LINE
- RIGHT-OF-WAY LINE
- PROPOSED SEPTIC RESERVE AREA
- PROPOSED WELL AREA
- EXISTING SEPTIC RESERVE AREA
- TYPICAL (N-2) NON-STRUCTURAL PRACTICE - DISCONNECTION OF NON-ROOFTOP RUNOFF
- TYPICAL (N-1) NON-STRUCTURAL PRACTICE - DISCONNECTION OF ROOFTOP RUNOFF
- MICRO-BIORETENTION AREA
- EXISTING SPECIMEN TREE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING SIGN
- EXISTING VEGETATION (APPROXIMATE LOCATION)
- PERC TEST PASS
- PERC TEST FAIL
- OVERHEAD UTILITY
- GnB SOIL BOUNDARY
- GbB SOIL BOUNDARY

AREA 1 (LOTS 1 - 3)
 THE "SITE" DRAINAGE AREA - AREA 1 (LOTS 1 - 3) IS THE LIMITS OF THE PROPOSED NEW LOT LINES. THIS ACCOUNTS FOR AN AREA OF 3.66 ACRES.

AREA 2 (LOTS 4 - 8)
 THE "SITE" DRAINAGE AREA - AREA 2 (LOTS 4 - 8) IS THE LIMITS OF THE PROPOSED NEW LOT LINES AND AREA OVER THE EXISTING DRIVEWAY. THIS ACCOUNTS FOR AN AREA OF 6.32 ACRES.

ESD PRACTICES BY LOT - AREA 1

LOT #	ESD PRACTICE
#1	DISCONNECT ROOFTOP RUNOFF, PERMEABLE SURFACE DRIVEWAY, RAIN BARREL, MICROBIORETENTION
#2	DISCONNECT ROOFTOP RUNOFF, PERMEABLE SURFACE DRIVEWAY, RAIN BARREL, MICROBIORETENTION
#3	DISCONNECT ROOFTOP RUNOFF, PERMEABLE SURFACE DRIVEWAY, RAIN BARREL, MICROBIORETENTION

ESD PRACTICES BY LOT - AREA 2

LOT #	ESD PRACTICE
#4	DISCONNECT ROOFTOP RUNOFF, PERMEABLE SURFACE DRIVEWAY, RAIN BARREL, MICROBIORETENTION
#5	PERMEABLE SURFACE DRIVEWAY, RAIN BARREL, MICROBIORETENTION
#6	PERMEABLE SURFACE DRIVEWAY, RAIN BARREL, MICROBIORETENTION
#7	PERMEABLE SURFACE DRIVEWAY, RAIN BARREL, MICROBIORETENTION
#8	DISCONNECT ROOFTOP RUNOFF, PERMEABLE SURFACE DRIVEWAY, RAIN BARREL, MICROBIORETENTION

STORMWATER MANAGEMENT
 SCALE: 1"=80'

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 AND ELLEN C. MCDANIEL
 13032 HIGHLAND ROAD
 HIGHLAND, MARYLAND 20777
 ATTN: MR. JOE BUTLER
 443-307-0422

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN
STORMWATER MANAGEMENT DRAINAGE AREA MAP
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
 PZ 80'S S 09-07, P 87-053, F 02-004, P 01-003, F 87-200, F 80-076
 P 84-068, F 86-121, F 97-145, F 02-057, EDP 12-046, WP 13-034
 PARCELS 117 & 78 LOT 29 ZONED: RR-DEO
 HOWARD COUNTY, MARYLAND

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

PROFESSIONAL CERTIFICATE

STATE OF MARYLAND
 ROBERT H. VOGEL, INC.
 NO. 15193
 PROFESSIONAL ENGINEER

DESIGN BY: RHV / EDS
 DRAWN BY: EDS/KG
 CHECKED BY: RHV
 DATE: FEBRUARY 2013
 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. 15193, EXPIRATION DATE: 09-27-2014.

9 SHEET OF 12

Mark P. Uyl
 PLANNING DIRECTOR
 6/11/13
 DATE

B.4.B SPECIFICATIONS FOR PERMEABLE PAVEMENTS & REINFORCED TURF

THESE SPECIFICATIONS INCLUDE INFORMATION ON ACCEPTABLE MATERIALS FOR TYPICAL APPLICATIONS AND ARE NOT EXCLUSIVE OR LIMITING...

1. PERVIOUS CONCRETE SPECIFICATIONS

DESIGN THICKNESS - PERVIOUS CONCRETE APPLICATIONS SHALL BE DESIGNED SO THAT THE THICKNESS OF THE CONCRETE SLAB SHALL SUPPORT THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED...

MIX & INSTALLATION - TRADITIONAL PORTLAND CEMENTS (ASTM C 150, C 1157) MAY BE USED IN PERVIOUS CONCRETE APPLICATIONS...

AGGREGATE - PERVIOUS CONCRETE CONTAINS A LIMITED FINE AGGREGATE CONTENT. COMMONLY USED GRADATIONS INCLUDE ASTM C 33 NO. 67 (3/4 IN. TO NO. 4), NO. 8 (3/8 IN. TO NO.16) AND NO. 89 (3/8 IN. TO NO.50) SIEVES...

WATER CONTENT - WATER-TO-CEMENT RATIOS BETWEEN 0.27 AND 0.30 ARE USED ROUTINELY WITH PROPER INCLUSION OF CHEMICAL ADMIXTURES...

ADMIXTURES - CHEMICAL ADMIXTURES (E.G., RETARDERS OR HYDRATION-STABILIZERS) ARE USED TO OBTAIN SPECIAL PROPERTIES IN PERVIOUS CONCRETE...

BASE COURSE - THE BASE COURSE SHALL BE AASHTO NO. 3 OR 4 COURSE AGGREGATE WITH AN ASSUMED OPEN PORE SPACE OF 30% (n=0.30).

2. PERMEABLE INTERLOCKING CONCRETE PAVEMENTS (PICP)

PAVER BLOCKS - BLOCKS SHOULD BE EITHER 3/4 IN. OR 4 IN. THICK, AND MEET ASTM C 936 OR CSA A231.2 REQUIREMENTS...

INFILL MATERIALS AND LEVELING COURSE - OPENINGS SHALL BE FILLED WITH ASTM C-33 GRADED SAND OR SANDY LOAM...

3. REINFORCED TURF

REINFORCED GRASS PAVEMENT (RGP) - WHETHER USED WITH GRASS OR GRAVEL, THE RGP THICKNESS SHALL BE AT LEAST 1'-3/4" THICK WITH A LOAD CAPACITY CAPABLE OF SUPPORTING THE TRAFFIC AND VEHICLE TYPES THAT WILL BE CARRIED.

A-2. PERMEABLE PAVEMENTS

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH PERMEABLE PAVEMENT:

- EROSION AND SEDIMENT CONTROL: FINAL GRADING FOR INSTALLATION SHOULD NOT TAKE PLACE UNTIL THE SURROUNDING SITE IS STABILIZED...
- SOIL COMPACTION: SUB SOILS SHALL NOT BE COMPACTED. CONSTRUCTION SHOULD BE PERFORMED WITH LIGHTWEIGHT, WIDE TRacked EQUIPMENT...
- DISTRIBUTION SYSTEMS: OVERDRAIN, UNDERDRAIN, AND DISTRIBUTION PIPES SHALL BE CHECKED TO ENSURE THAT BOTH THE MATERIAL AND DIMENSIONS MEET SPECIFICATIONS...

INSPECTION:

REGULAR INSPECTIONS SHALL BE MADE DURING THE FOLLOWING STAGES OF CONSTRUCTION:

- DURING EXCAVATION TO SUB GRADE.
- DURING PLACEMENT AND BACKFILL OF ANY DRAINAGE OR DISTRIBUTION SYSTEM(S).
- DURING PLACEMENT OF THE CRUSHED STONE SUBBASE MATERIAL.
- DURING PLACEMENT OF THE SURFACE MATERIAL.
- UPON COMPLETION OF FINAL GRADING AND ESTABLISHMENT OF PERMANENT STABILIZATION.

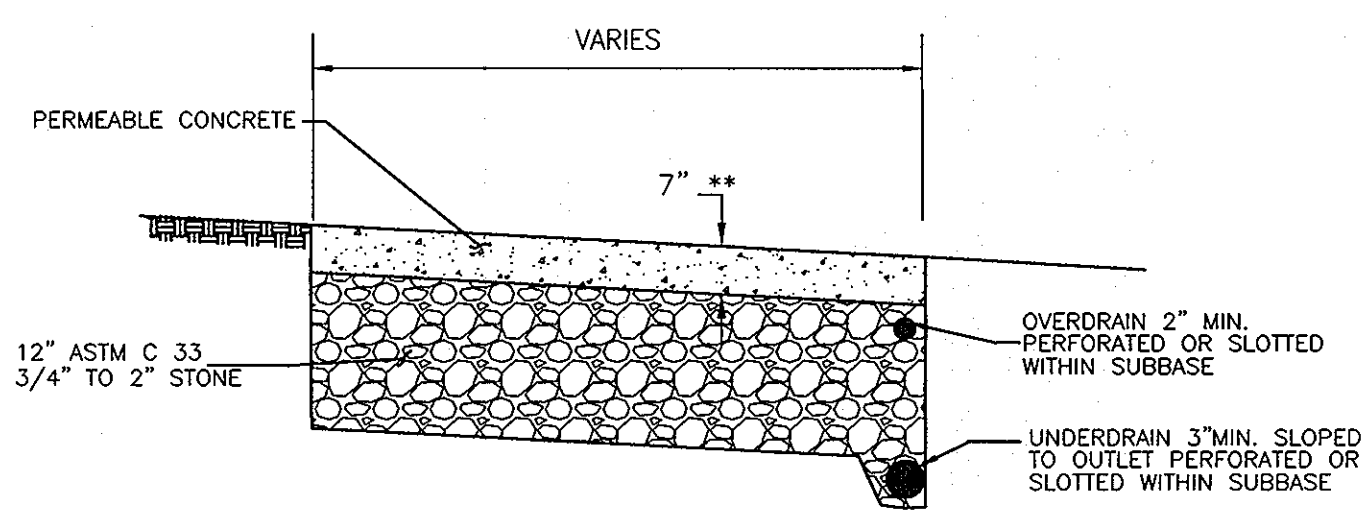
MAINTENANCE CRITERIA:

THE FOLLOWING PROCEDURES SHOULD BE CONSIDERED ESSENTIAL FOR MAINTAINING PERMEABLE PAVEMENT SYSTEMS:

- PAVEMENTS SHOULD BE USED ONLY WHERE REGULAR MAINTENANCE CAN BE PERFORMED. MAINTENANCE AGREEMENTS SHOULD CLEARLY SPECIFY HOW TO CONDUCT ROUTINE TASKS TO ENSURE LONG-TERM PERFORMANCE.
- PAVEMENT SURFACES SHOULD BE SWEEPED AND VACUUMED TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY...
- DRAINAGE PIPES, INLETS, STONE EDGE DRAINS, AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE SHOULD BE CLEANED OUT AT REGULAR INTERVALS.
- TRUCKS AND OTHER HEAVY VEHICLES CAN GRIND DIRT AND GRIT INTO THE PORE SPACES, LEADING TO CLOGGING AND PREMATURE FAILURE...

HOWARD COUNTY - OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED PERMEABLE PAVEMENT (A-2)

- A. THE OWNER SHALL PERIODICALLY SWEEP (OR VACUUM POROUS CONCRETE PAVEMENT) THE PAVEMENT SURFACES TO REDUCE SEDIMENT ACCUMULATION AND ENSURE CONTINUED SURFACE POROSITY. SWEEPING SHOULD BE PERFORMED AT LEAST TWICE ANNUALLY WITH A COMMERCIAL CLEANING UNIT, WASHING OR COMPRESSED AIR UNITS SHOULD NOT BE USED TO PERFORM SURFACE CLEANING.
B. THE OWNER SHALL PERIODICALLY CLEAN DRAINAGE PIPES, INLETS, STONE EDGE DRAINS AND OTHER STRUCTURES WITHIN OR DRAINING TO THE SUBBASE.
C. THE OWNER SHALL USE DEICERS IN MODERATION. DEICERS SHOULD BE NON-TOXIC AND BE APPLIED EITHER AS CALCIUM MAGNESIUM ACETATE OR AS PRETREATED SALT.
D. THE OWNER SHALL ENSURE SNOW PLOWING IS PERFORMED CAREFULLY WITH BLADES SET ONE-INCH ABOVE THE SURFACE. PLOWED SNOW PILES AND SNOW MELT SHOULD NOT BE DIRECTED TO PERMEABLE PAVEMENT.



PAVEMENT CROSS SECTION TO BE CONFIRMED BY GEOTECHNICAL ENGINEER UNDERDRAIN SHALL BE LOCATED SUCH THAT IT CAN DRAUGHT

DETAIL - PERMEABLE CONCRETE DRIVEWAY

NOT TO SCALE
** ALL PERMEABLE CONCRETE THICKNESS, MIX AND SUB-BASE TO BE DETERMINED BY GEOTECHNICAL ENGINEER ONSITE.

APPENDIX B.4.C. SPECIFICATIONS FOR MICRO-BIORETENTION, RAIN GARDEN, LANDSCAPE INFILTRATION & INFILTRATION BERMS

1. MATERIAL SPECIFICATIONS

THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
2. FILTERING MEDIA OR PLANTING SOIL
THE SOIL SHALL BE A UNIFORM MTD, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES...
3. COMPACTION
IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL...
4. PLANT MATERIAL
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS...

5. PLANT INSTALLATION
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2" TO 3". SHREDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH...
6. UNDERDRAINS
UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
- PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM 758, TYPE PS 28, OR AASHTO-M-276) IN A GRAVEL LAYER...
- PERFORATIONS - IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER FOOT...
- GRAVEL - THE GRAVEL LAYER (NO. 57 STONE PERFORATION) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN...
- MICRO BIORETENTION INFILTRATION SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%. OBSERVATION WELLS AND/OR CLEAN-OUT MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).

7. MISCELLANEOUS
THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

N-1. DISCONNECTION OF ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH PLANNED ROOFTOP DISCONNECTIONS:
- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN VEGETATED AREAS RECEIVING DISCONNECTED RUNOFF.
- SITE DISTURBANCE: CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF TO MINIMIZE DISTURBANCE AND COMPACTION...

INSPECTION:

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

MAINTENANCE CRITERIA:

MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER)...

N-2. DISCONNECTION OF NON-ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

THE FOLLOWING SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH NON-ROOFTOP DISCONNECTIONS:

- EROSION AND SEDIMENT CONTROL: EROSION AND SEDIMENT CONTROL PRACTICES (E.G., SEDIMENT TRAPS) SHALL NOT BE LOCATED IN AREAS DESIGNATED FOR NON-ROOFTOP DISCONNECTIONS.
- SITE DISTURBANCE: TO MINIMIZE DISTURBANCE AND COMPACTION, CONSTRUCTION VEHICLES AND EQUIPMENT SHOULD AVOID AREAS RECEIVING DISCONNECTED RUNOFF TO MINIMIZE DISTURBANCE AND COMPACTION...

INSPECTION:

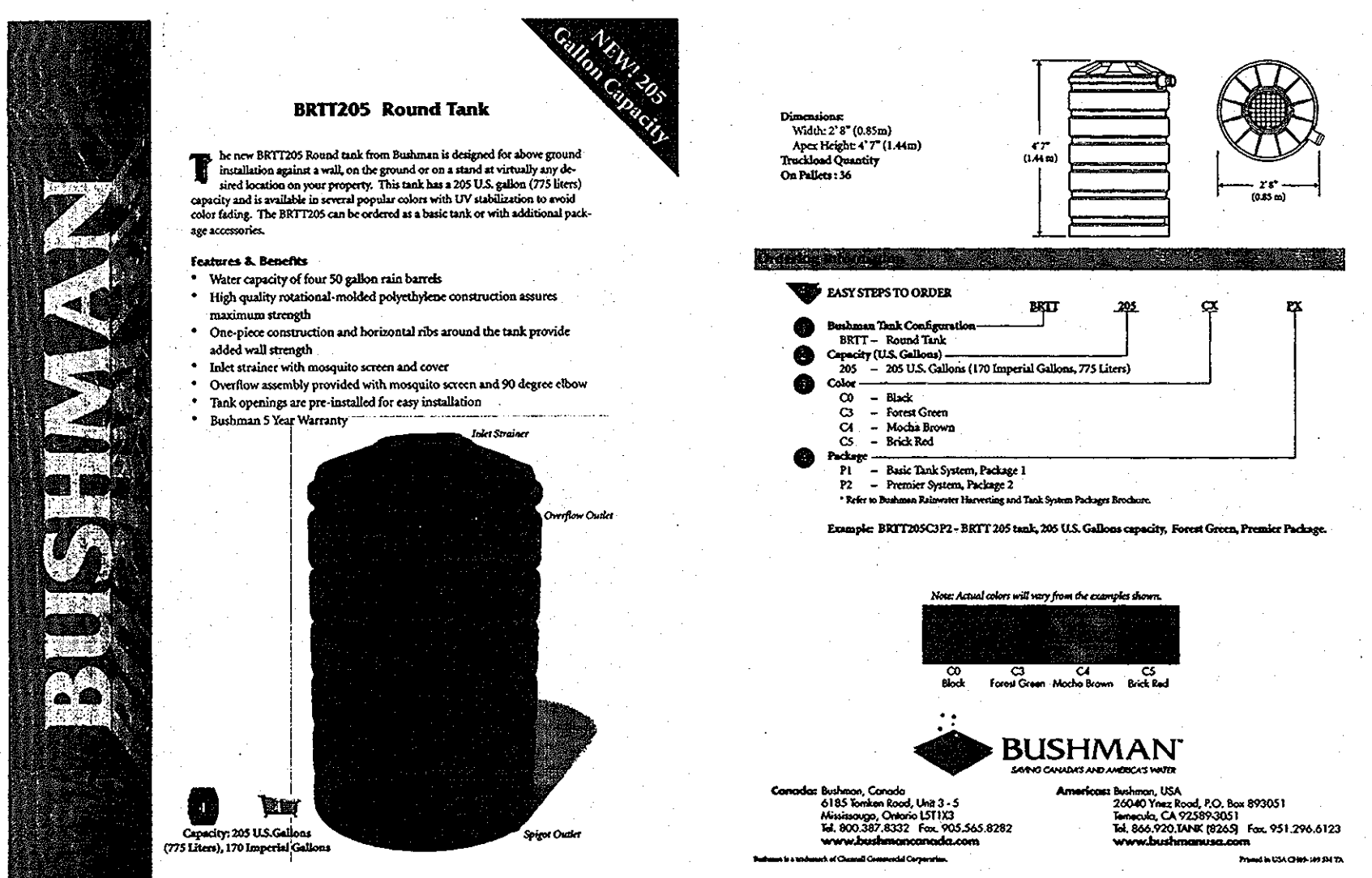
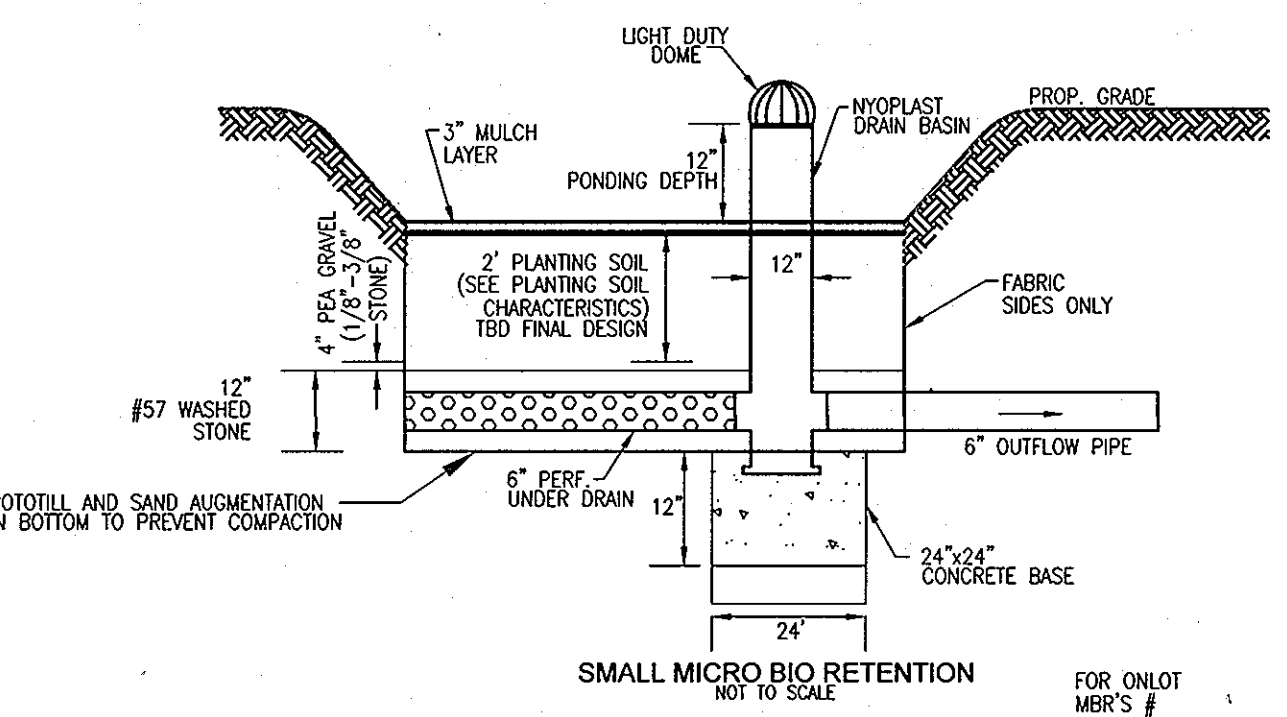
A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT ADEQUATE TREATMENT AREAS AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:

MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION (E.G., BY PLANTING TREES OR SHRUBS ALONG THE PERIMETER)...

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

- A. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA...
B. MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE AREAS RECEIVING RUNOFF SHOULD BE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA...



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

HOWARD COUNTY - OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RAINWATER HARVESTING (M-1)
A. THE OWNER SHALL EMPTY BARRELS ON A MONTHLY BASIS AND CLEAN BARREL WITH A HOSE.
B. THE OWNER SHALL VERIFY INTEGRITY OF LEAF SCREENS, GUTTERS, DOWNSPOUTS, SPIGOTS, AND MOSQUITO SCREENS, AND CLEAN AND REMOVE ANY DEBRIS.
C. THE OWNER SHALL REPLACE DAMAGED COMPONENTS AS NEEDED.
D. THE OWNER SHALL DISCONNECT THE BARREL PRIOR TO WINTER, OR ALLOW THE BARREL TO DRAIN BY BOTTOM SPIGOT DURING THE WINTER SEASON.

TYPICAL RAIN BARREL DESIGN

205 GAL = 27.41 CUFT
7.48 GAL/CUFT
500 SF X (.27) = 135.00 GAL
135.00 GAL / 7.48 GAL/CUFT = 18.06 CUFT

THEREFORE A 205 GALLON BARREL CAPTURES P_e OF 0.66" FROM A 500 SF SECTION OF PROPOSED ROOFTOP THE REMAINING PORTION OF THE 500 SF SECTION OF PROPOSED ROOFTOP IS P_e = 0.34". THIS CAN BE ACHIEVED BY A 40' DISCONNECTION OF ROOFTOP RUNOFF LENGTH.

OPERATION AND MAINTENANCE SCHEDULE FOR MICROBIORETENTION AREAS

- 1. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUME II, TABLE A.4.1 AND 2.
2. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS AND REPLACE ALL DEFICIENT STEMMS AND WIPES.
3. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.
4. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

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

ENVIRONMENTAL CONCEPT PLAN - SWM CONCEPT PER LOT

ON LOT PRACTICES ARE SUBJECT TO CHANGE DURING FINAL DESIGN

Table with columns for Lot No., Area, Impervious Area, Grass Area, Total Area, Percent Impervious, Runoff Volume, etc. It lists data for lots 1 through 8, including rain barrel and micro bio retention requirements for each.

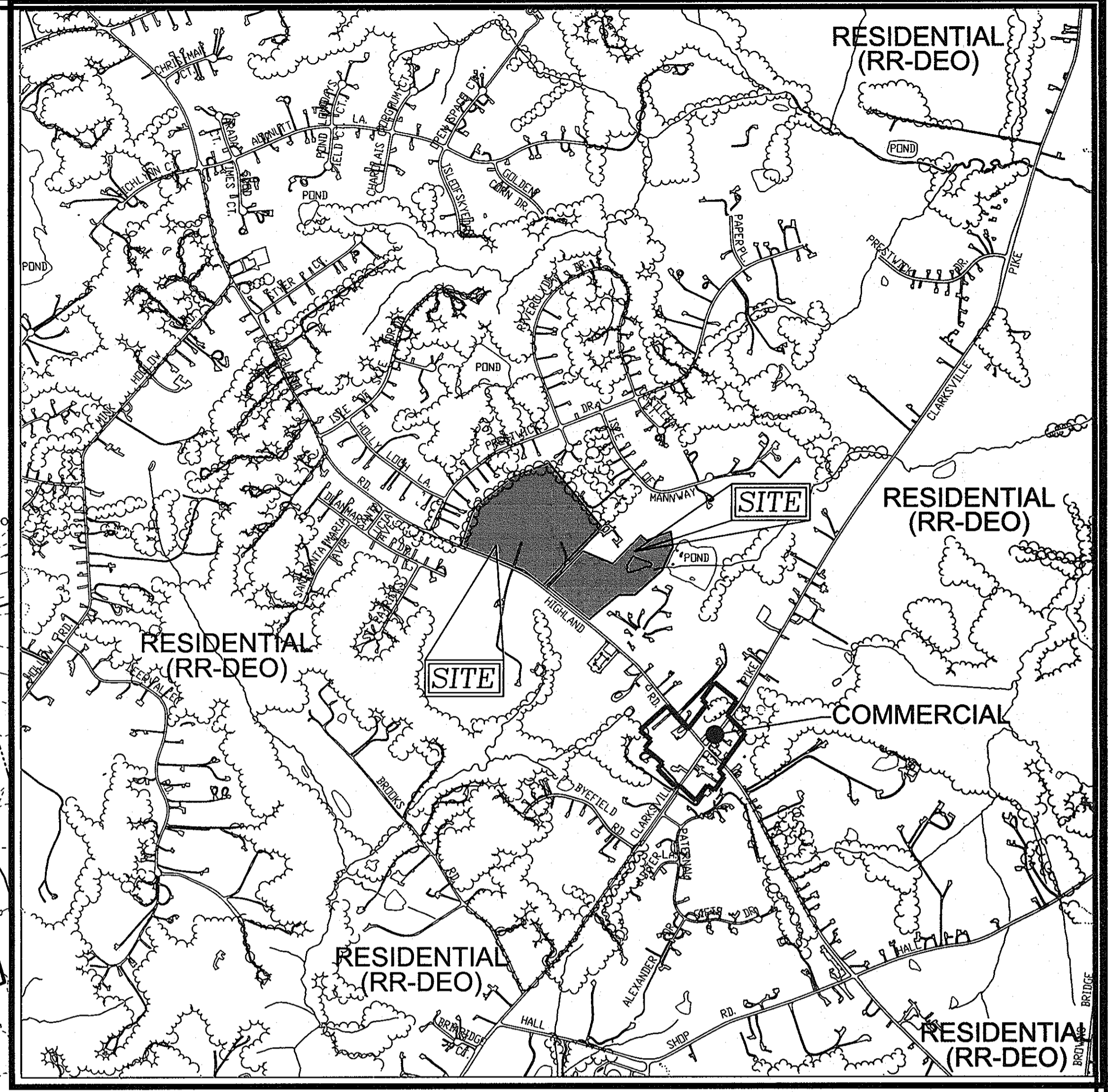
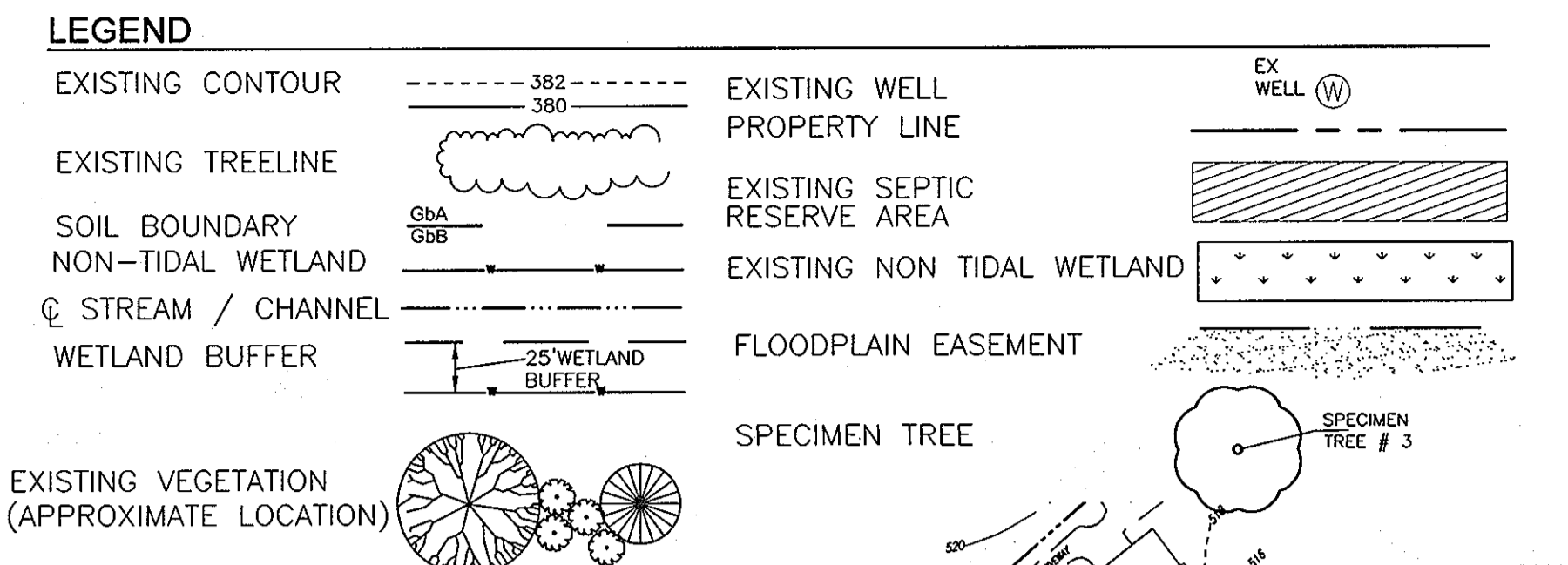
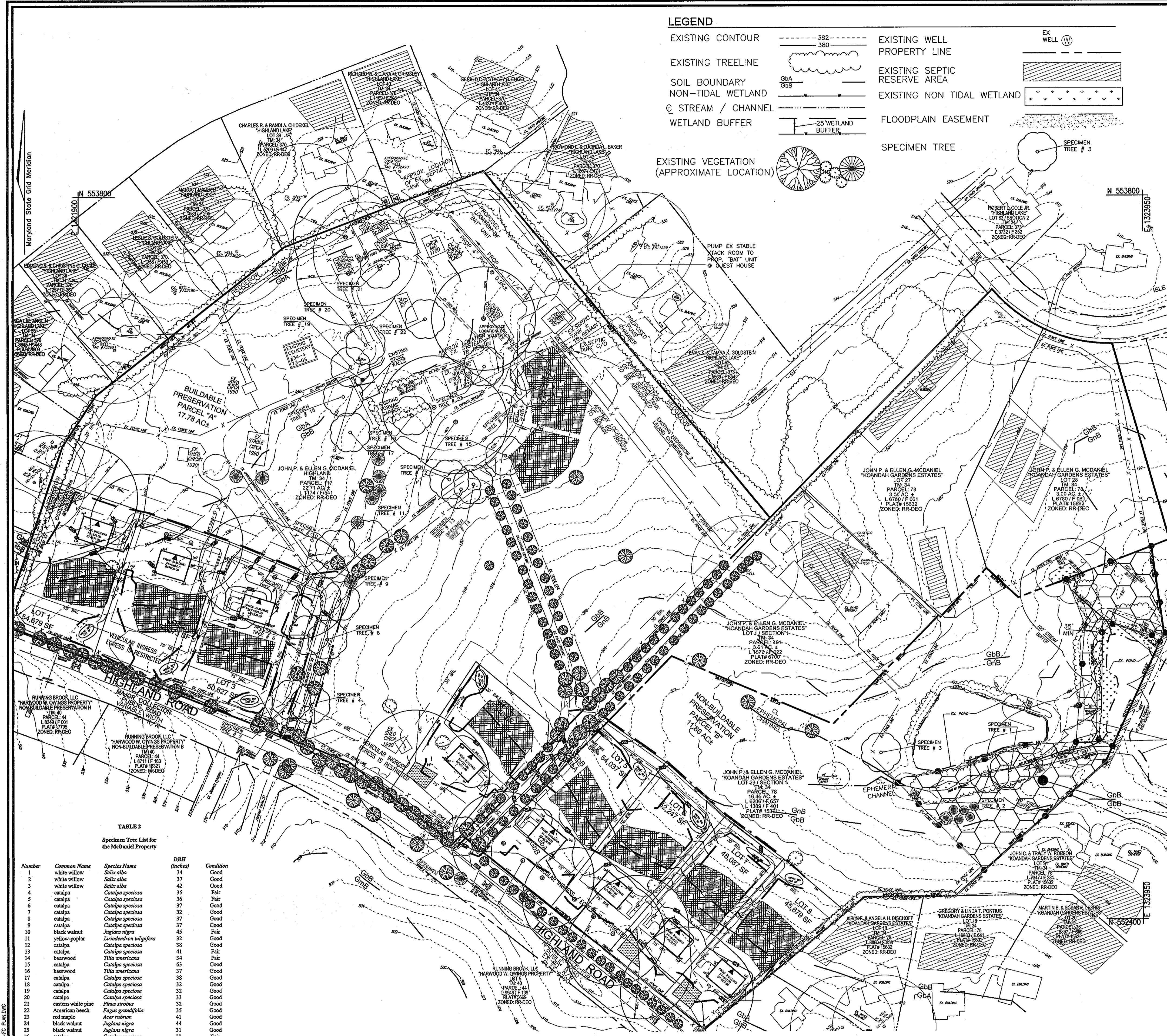
APPENDIX B.4 - CONSTRUCTION SPECIFICATIONS

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

Table B.4.1 Materials Specifications for Micro-Bioretention, Rain Gardens & Landscape Infiltration. Lists materials like Planting Soil, Organic content, Mulch, Pea gravel diaphragm, Curtain drain, Geotextile, Gravel (underdrains and infiltration berms), Underdrain piping, Poured in place concrete, and Sand with their respective specifications.

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY
Signature: David H. Cagle
DATE: 6/1/18

Preliminary Equivalent Sketch Plan Stormwater Management Notes and Details. Includes project information for MCDANIEL PROPERTY LOTS 1-8, a preliminary site plan showing rain barrels and micro bio retention areas, and contact information for Robert H. Vogel Engineering, Inc.



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

GENERAL NOTES

1. THERE ARE NO STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE LOCATED ONSITE.
2. 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.
3. THERE ARE NO STATE CHAMPION TREES ON THE PROJECT SITE. SPECIMEN TREE # 15 IS 75% OF THE CURRENT STATE CHAMPION.
4. CHANNELS ONSITE IDENTIFIED AS EPHEMERAL, REQUIRE NO BUFFER.
5. STREAM SECTIONS IDENTIFIED AS INTERMITTENT, REQUIRE A 100 FT BUFFER.
6. THE FOREST CONSERVATION EASEMENT SHALL BE A MINIMUM OF 35' WIDE.
7. WATERSHED NAME: MIDDLE PATUXENT RIVER
DNR LISTING: 2131106

OWNER / DEVELOPER
JOHN P. MCDANIEL AND ELLEN G. MCDANIEL
3032 HIGHLAND ROAD
HIGHLAND, MARYLAND 20777
ATTN: MR. JOE RUTER
443-367-0422

AFFORESTATION AREA
1.79 ACRES

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN
PRELIMINARY 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 PARCELS 117 & 78 (LOT 29)
897, 967'S; S 89-07, P 87-053, F 02-004, P 01-003, F 87-200, F 90-076
84-088, F 88-121, F 91-145, F 02-051, E2P 12-046, W 13-034
HOWARD COUNTY, MARYLAND

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

PROFESSIONAL CERTIFICATE
DESIGN BY: RHV / EDS
DRAWN BY: EDS
CHECKED BY: RHV
DATE: FEBRUARY 2013
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: 09-27-2014.
ROBERT H. VOGEL, PE No.16193

TABLE 2
Specimen Tree List for the McDaniel Property

Number	Common Name	Species Name	DBH (inches)	Condition
1	white willow	<i>Salix alba</i>	34	Good
2	white willow	<i>Salix alba</i>	37	Good
3	white willow	<i>Salix alba</i>	42	Good
4	catalpa	<i>Catalpa speciosa</i>	36	Fair
5	catalpa	<i>Catalpa speciosa</i>	36	Fair
6	catalpa	<i>Catalpa speciosa</i>	37	Good
7	catalpa	<i>Catalpa speciosa</i>	32	Good
8	catalpa	<i>Catalpa speciosa</i>	37	Good
9	catalpa	<i>Catalpa speciosa</i>	37	Good
10	black walnut	<i>Juglans nigra</i>	45	Fair
11	yellow-poplar	<i>Liriodendron tulipifera</i>	32	Good
12	catalpa	<i>Catalpa speciosa</i>	38	Good
13	catalpa	<i>Catalpa speciosa</i>	41	Fair
14	basewood	<i>Tilia americana</i>	34	Fair
15	catalpa	<i>Catalpa speciosa</i>	63	Good
16	basewood	<i>Tilia americana</i>	37	Good
17	catalpa	<i>Catalpa speciosa</i>	38	Good
18	catalpa	<i>Catalpa speciosa</i>	32	Good
19	catalpa	<i>Catalpa speciosa</i>	32	Good
20	catalpa	<i>Catalpa speciosa</i>	33	Good
21	eastern white pine	<i>Pinus strobus</i>	32	Good
22	American beech	<i>Fagus grandifolia</i>	35	Good
23	red maple	<i>Acer rubrum</i>	41	Good
24	black walnut	<i>Juglans nigra</i>	44	Good
25	black walnut	<i>Juglans nigra</i>	31	Good
26	catalpa	<i>Catalpa speciosa</i>	32	Fair

MAPPED SOILS TYPES

SYMBOL / NAME / DESCRIPTION	GROUP	HYDRO	HYDRO INCLUSIONS	K-FACTOR	ROCK FAVORABLE	STEEPER SLOPE FACTOR
GbA GLADSTONE LOAM, 0 TO 3 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbB GLADSTONE LOAM, 3 TO 8 PERCENT SLOPES	B	NO	NO	0.20	YES	NO
GbD GLENVILLE-BALLE 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
*BALE COMPONENT OF GbB, EROSION FACTOR IS 0.32 AND IS CONSIDERED HYDRO

PLAN SCALE
SCALE: 1"=100'

TABULATIONS

1. TOTAL SITE AREA: 39.16 ACRES
 2. 100-YEAR FLOODPLAIN: 0.56 ACRES
 3. EXISTING FOREST: 0.00 ACRES
 4. WETLANDS AND BUFFERS: 1.68 ACRES*
 5. STREAM & BUFFER: 2.03 ACRES
- * WETLAND AND BUFFER ACREAGE IS PART OF STREAM & BUFFER ACREAGE

Klebasko Environmental, LLC
8373 Piney Orchard Parkway, Suite 207
Odenton, Maryland 21113
Phone: (410) 672-5990
FAX: (410) 672-8593

Plan prepared by:
Kenneth R. Wallis
Qualified Professional
CoMar 08.19.06.01

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
CHIEF, DEVELOPMENT ENGINEERING DIVISION
Mark R. Vogel
CHIEF, DIVISION OF LAND DEVELOPMENT
PLANNING DIRECTOR
DATE: 2/14/13

HOWARD COUNTY
FOREST CONSERVATION WORKSHEET

ZONED RR-DEO
NET TRACT AREA:
A. TOTAL TRACT AREA 39.16 AC.
B. AREA WITHIN 100 YEAR FLOODPLAIN 0.56 AC
C. AREA IN PRESERVATION PARCEL 29.64 AC (1)
D. NET TRACT AREA 8.96 AC

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

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

E. AFFOREST THRESHOLD 20% X 8.96 = 1.79 AC
F. CONSERVATION THRESHOLD 25% X 8.96 = 2.24 AC

EXISTING FOREST COVER:

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

BREAK EVEN POINT:

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

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

PROPOSED FOREST CLEARING:

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

PLANTING REQUIREMENTS:

N. REFORESTATION FOR CLEARING ABOVE CONSERVATION THRESHOLD (L X 25) = 0.00 AC
P. REFORESTATION FOR CLEARING BELOW CONSERVATION THRESHOLD = 0.00 AC
Q. CREDIT FOR RETENTION ABOVE CONSERVATION THRESHOLD (M-F) = 0.00 AC
R. TOTAL REFORESTATION REQUIRED (N+P-Q) = 0.00 AC
S. TOTAL AFFORESTATION REQUIRED = 1.79 AC
T. TOTAL REFORESTATION AND AFFORESTATION REQUIRED = 1.79 AC

FOREST CONSERVATION EASEMENT HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL.

NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY ONSITE AFFORESTATION OF 1.79 AC.

FINANCIAL SURETY IN THE AMOUNT OF \$ 38,987 (77,972.4 x 0.50) WILL BE POSTED WITH THE FOREST CONSERVATION MAINTENANCE AGREEMENT.

(1) 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 ON THE SITE AND BY INCLUDING THE PRESERVATION PARCELS IT WOULD CREATE A LARGE AFFORESTATION OBLIGATION.

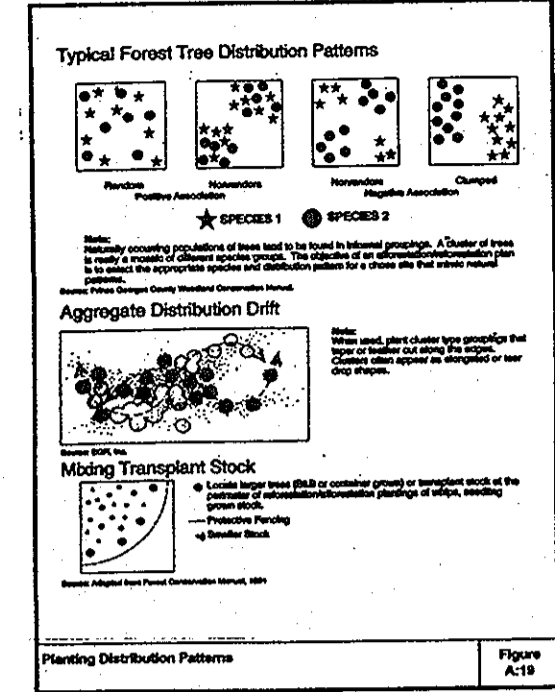
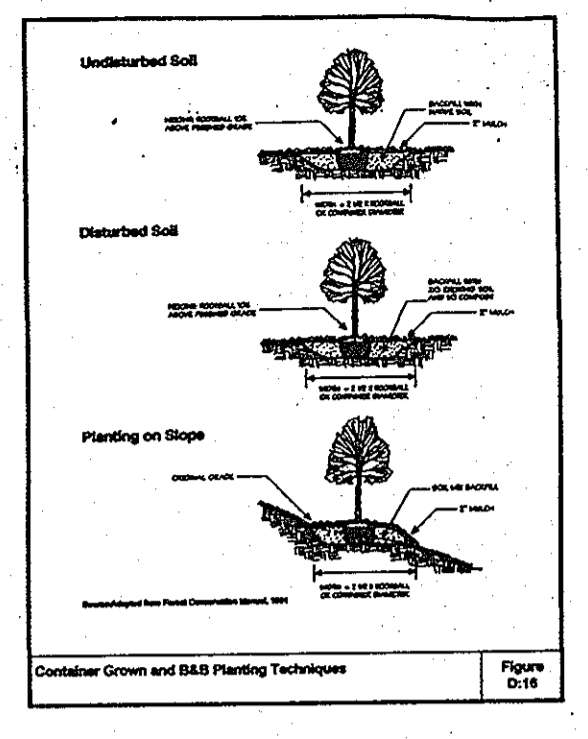
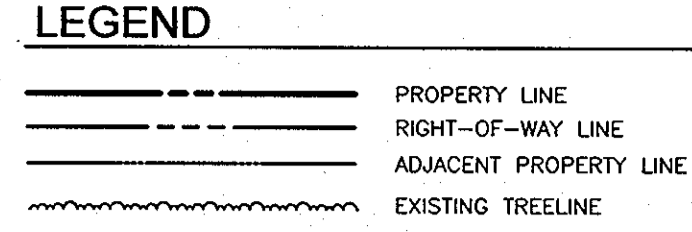
AFFORESTATION PROVIDED - AREA-1
1.79 ACRES
1" CALIPER TREES
358 TREES @ 200 TREES PER ACRE

Klebasko Environmental, LLC
8373 Piney Orchard Parkway, Suite 207
Odenton, Maryland 21113
Phone: (410) 672-5990
FAX: (410) 672-5593

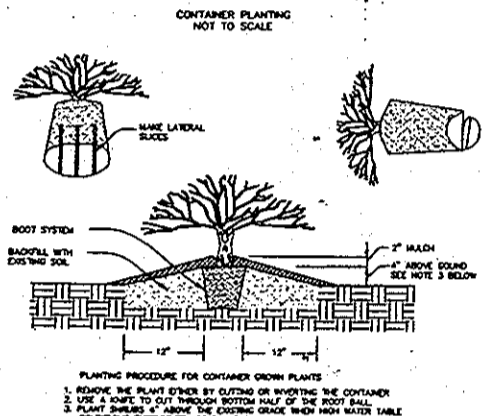
Plan prepared by:
KR Allen 5-20-13
Kenneth R. Wallis
Qualified Professional
CoMar 08.19.06.01

PLANT SCHEDULE			
QUANTITIES FOR AFFORESTATION AREAS			
BOTANICAL NAME	AREA 1	SIZE	SPACING (FT)
Platanus occidentalis American Sycamore	72	1" Cal.	15 X 15
Liquidambar styraciflua American Sweetgum	72	1" Cal.	15 X 15
Amelanchier canadensis Serviceberry	72	1" Cal.	15 X 15
Acer saccharum 'Legacy' Legacy Sugar Maple	72	1" Cal.	15 X 15
Cercis canadensis Eastern Redbud	70	1" Cal.	15 X 15

PLANTING SPECIES TO BE VERIFIED AS SAFE FOR THE ONSITE EQUESTRIAN OPERATION



Site	Number Required	Approximate Spacing	Survivability
Site 1 (1.5 Acres)	300	8 x 8	75%
Site 2 (1.5 Acres)	300	12 x 12	75%
Site 3 (1.5 Acres)	300	15 x 15	75%
Site 4 (1.5 Acres)	300	20 x 20	75%



AFFORESTATION AREA MONITORING NOTES

- MONTHLY VISITS DURING THE FIRST GROWING SEASON ARE TO ASSESS THE SUCCESS OF THE PLANTINGS AND TO DETERMINE IF SUPPLEMENTAL WATERING, PEST CONTROL, OR OTHER ACTIONS ARE NECESSARY. EARLY SPRING VISITS WILL DOCUMENT WINTER KILL AND AUTUMN VISITS WILL DOCUMENT SUMMER KILL.
- THE MINIMUM SURVIVAL RATE SHALL BE 75% OF THE TOTAL NUMBER OF TREES PLANTED PER ACRE AT THE END OF THE TWO YEAR MAINTENANCE PERIOD. WILD TREE SEEDLINGS FROM NATURAL REGENERATION ON THE PLANTING SITE MAY BE COUNTED UP TO 50% TOWARD THE TOTAL SURVIVAL NUMBER IF THE ARE HEALTHY NATIVE SPECIES AT LEAST 12 INCHES TALL.
- SURVIVAL WILL BE DETERMINED BY A STRATIFIED RANDOM SAMPLING OF THE PLANTINGS. THE SPECIES COMPOSITION OF THE SAMPLE POPULATION SHOULD BE PROPORTIONATE TO THE AMOUNT OF EACH SPECIES IN THE ENTIRE PLANTING TO BE SAMPLED.
- EFFECTIVE MONITORING WILL ASSESS PLANT SURVIVABILITY DURING THE FIRST GROWING SEASON AND MAKE RECOMMENDATIONS FOR REINFORCEMENT PLANTINGS IF REQUIRED AT THAT TIME.

AFFORESTATION PLANTING NOTES

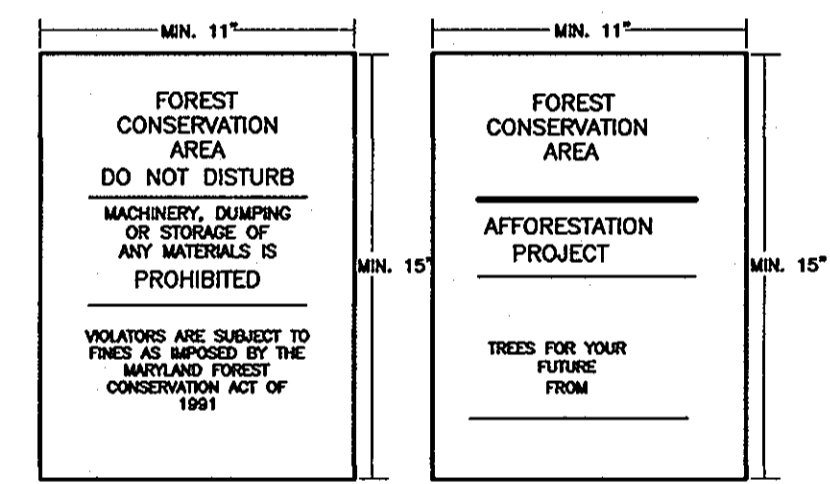
- AFFORESTATION AREAS MAY BE PLANTED AS SOON AS REASONABLE TO DO SO. LATE WINTER-EARLY SPRING PLANTINGS ARE PREFERRED. EARLIEST PLANTING DATES WILL VARY FROM YEAR TO YEAR BUT PLANTING MAY GENERALLY BEGIN AS SOON AS THE GROUND IS NO LONGER FROZEN. ALTERNATE PLANTING DATES MAY BE CONSIDERED AS CONDITION WARRANTS.
- SOIL AMENDMENTS AND FERTILIZATION RECOMMENDATIONS WILL BE MADE BASED UPON THE RESULTS OF SOIL ANALYSIS FOR NITROGEN, PHOSPHORUS, POTASSIUM, ORGANIC MATTER CONTENT AND pH. IF REQUIRED, FERTILIZER WILL BE PROVIDED USING A SLOW RELEASE, SOLUBLE 16-8-16 ANALYSIS DESIGNED TO LAST 5-8 YEARS CONTAINED IN POLYETHYLENE PERFORATED BAGS SUCH AS MANUFACTURED BY ADCO WORKS, P.O. BOX 310 HOLLIS, N.Y. 11423 OR APPROVED EQUAL.
- PLANT MATERIALS WILL BE PLANTED IN ACCORDANCE WITH THE PLANTING DETAILS AND PLANT SCHEDULE.
- PLANT MATERIAL SHALL BE NURSERY GROWN AND INSPECTED PRIOR TO PLANTING. PLANTS NOT CONFORMING TO THE AMERICAN STANDARD FOR NURSERY STOCK SPECIFICATIONS FOR SIZE, FORM, VIGOR, OR ROOTS, OR DUE TO TRUNK WOUNDS, BREAKAGE, DESICCATION, INSECT OR DISEASE MUST BE REPLACED.
- PLANTING STOCK MUST BE PROTECTED FROM DESICCATION AT ALL TIMES PRIOR TO PLANTING. MATERIALS HELD FOR PLANTING SHALL BE MOISTENED AND PLACED IN COOL SHADED AREAS UNTIL READY FOR PLACEMENT.
- NEWLY PLANTED TREES MAY REQUIRE WATERING AT LEAST ONCE PER WEEK DURING THE FIRST GROWING SEASON DEPENDING ON RAINFALL IN ORDER TO GET ESTABLISHED. THE INITIAL PLANTING OPERATION SHOULD ALLOW FOR WATERING DURING INSTALLATION TO COMPLETELY SOAK BACKFILL MATERIAL.
- MULCH SHALL BE APPLIED IN ACCORDANCE WITH THE DIAGRAM PROVIDED AND SHALL CONSIST OF COMPOSTED, SHREDDED HARDWOOD BARK MULCH, FREE OF WOOD ALCOHOL.
- ALL NURSERY STOCK TO BE SPRAYED WITH DEER REPELLENT CONTAINING BITREX, SUCH AS REPELLEX. ALL NURSERY STOCK TO BE GROWN WITH DEER REPELLENT TABLETS IN GROWING MEDIUM, SUCH AS REPELLEX TABLETS.

FOREST PROTECTION NOTES

- PRE-CONSTRUCTION ACTIVITIES
- FOR RETENTION AREAS, INSTALL BLAZE ORANGE FENCE AND RETENTION SIGNS BEFORE CONSTRUCTION BEGINS.
 - FENCING SHALL BE MAINTAINED IN GOOD CONDITION AND PROMPTLY REPAIRED OR RESTORED AS THE SITUATION WARRANTS.
 - A QUALIFIED TREE CARE EXPERT SHALL DETERMINE IF ROOT PRUNING IS REQUIRED ALONG THE LIMIT OF DISTURBANCE. ROOT PRUNE TREES AS REQUIRED. WATER ANY ROOT-PRUNED TREES IMMEDIATELY AFTER ROOT-PRUNING AND MONITOR FOR SIGNS OF STRESS DURING CONSTRUCTION.
- CONSTRUCTION PHASE
- NO DISTURBANCE OR DUMPING IS ALLOWED INSIDE THE TREE RETENTION AREA.
 - NO EQUIPMENT SHALL BE OPERATED INSIDE THE TREE RETENTION AREA INCLUDING TREE CANOPIES.
 - IN THE EVENT OF DROUGHT, THE PROTECTED TREES SHALL BE MONITORED FOR SIGNS OF STRESS AND WATERED AS NEEDED.
- POST-CONSTRUCTION ACTIVITIES
- AT THE DIRECTION OF A QUALIFIED TREE CARE EXPERT, DAMAGES TO RETAINED TREES SHALL BE REPAIRED BY THE CONTRACTOR.
 - FENCE REMOVAL AND STABILIZATION SHALL BE AS PER THE SEDIMENT AND EROSION CONTROL PLAN.
 - DO NOT REMOVE SIGNS.

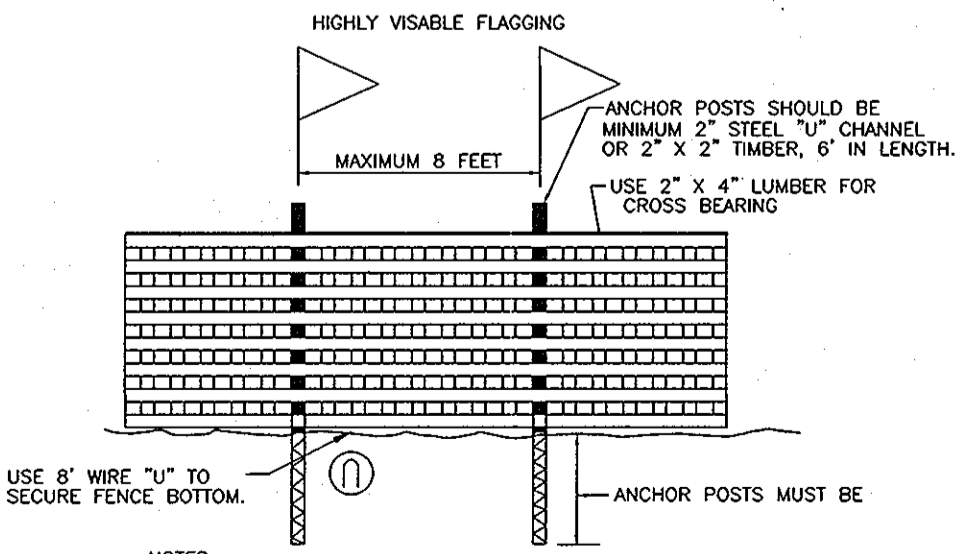
SEQUENCE OF CONSTRUCTION-FOREST CONSERVATION

- PRECONSTRUCTION MEETING /SITE WALK WITH CONTRACTORS AND OTHER RESPONSIBLE PARTIES TO DEFINE PROTECTION MEASURES TO BE UTILIZED AND TO POINT OUT PARTICULAR TREES TO BE SAVED.
- STAKE OUT LIMITS OF DISTURBANCE AND TREE PROTECTION FENCING LOCATIONS.
- INSTALL TREE PROTECTION FENCING: FENCING TO BE INSPECTED BY THE PROJECT ENGINEER OR THE PROJECT ECOLOGIST AND HOWARD COUNTY PLANNING AND ZONING.
- PROCEED WITH TREE REMOVAL AND SITE IMPROVEMENTS AS PER APPROVED SEDIMENT CONTROL PLAN - TO BE INSPECTED BY HOWARD COUNTY PLANNING AND ZONING.
- TEMPORARY TREE PROTECTION DEVICES SHALL BE REMOVED AFTER ALL FINISHED GRADING AND UTILITY CONSTRUCTION HAS OCCURRED AND WITH APPROVAL FROM THE HOWARD COUNTY OFFICE 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.
 - SIGN LOCATION SYMBOL.
 - PROTECTIVE SIGNAGE SHALL REMAIN IN PERPETUITY.

SIGNAGE DETAIL
NOT TO SCALE



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

BLAZE ORANGE PLASTIC MESH
TYPICAL TREE PROTECTION FENCE DETAIL

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

NO.	REVISION	DATE

PRELIMINARY EQUIVALENT SKETCH PLAN
PRELIMINARY FOREST CONSERVATION
NOTES & DETAILS
MCDANIEL PROPERTY
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TAX MAP 34, BLOCK 22 & TAX MAP 40 BLOCK 4
SHT. ELECTRIC DISTRICT
DPZ REF'S: S 99-07, P 87-053, F 02-004, P 01-003, F 87-200, F 90-078
F 94-088, F 95-121, F 97-143, F 02-057, EOP 12-048, WP 13-034
PARCELS 117 & 118 (LOT 29)
HOWARD COUNTY, MARYLAND

ROBERT H. VOGEL
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: RHW / EDS
DRAWN BY: EDS/KG
CHECKED BY: RHW
DATE: FEBRUARY 2013
SCALE: AS SHOWN
W.O. NO.: 08-43

12 SHEET OF 12

K:\PROJECTS\08-14\BARGE\DWG\PEL_CD_SECTION12-FORCON_NOTES.DWG

TENTATIVELY APPROVED
DEPARTMENT OF PLANNING AND ZONING
HOWARD COUNTY

Robert H. Vogel
PLANNING DIRECTOR

4/16/13
DATE