

GENERAL NOTES

- THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS ALTERNATIVE COMPLIANCE HAVE BEEN APPROVED.
- THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A FIELD RUN SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING+TIMMONS GROUP INC., DATED JANUARY 2019.
- THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PREPARED BY ROBERT H. VOGEL ENGINEERING+TIMMONS GROUP, INC., DATED JANUARY 2019.
- 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. 31EF AND 0081 WERE USED FOR THIS PROJECT.
- THE SUBJECT PROPERTY IS ZONED "R-ED" IN ACCORDANCE WITH THE 10/6/2013 COMPREHENSIVE ZONING PLAN AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
- 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 LOCATED WITHIN THE METROPOLITAN DISTRICT.
- WATER FOR THIS PROJECT IS TO BE SERVICE CONNECTIONS FROM CONTRACT NO. 14-4080-D.
- SEWER FOR THIS PROJECT IS TO BE SERVICE CONNECTIONS FROM CONTRACT NO. 14-4080-D.
- EXISTING UTILITIES LOCATED FROM TOPOGRAPHIC SURVEY AND AS-BUILT DRAWINGS. 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.
- STEEP SLOPES 15% AND GREATER ARE SHOWN HEREON.
- FOREST CONSERVATION OBLIGATIONS FOR THIS PROJECT SHALL BE ADDRESSED BY A FOREST CONSERVATION PLAN SUBMITTED WITH A SUBDIVISION OR SITE DEVELOPMENT PLAN.
- WETLANDS AND STREAMS SHOWN ONSITE ARE BASED ON ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, FEBRUARY 2019.
- IN ACCORDANCE WITH SECTION 16.121(A)(2) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, THE OPEN SPACE REQUIREMENTS FOR THIS R-ED PROJECT (6,000 SF MIN LOT SIZE) IS 50% OF GROSS AREA (9.085 AC. GROSS AREA x 50% = 4.54 AC +/-). REFER TO THE CONCEPTUAL OPEN SPACE LOTS.
- GEOTECHNICAL INVESTIGATIONS SHALL COMPLETED AS PART OF THE PRELIMINARY EQUIVALENT SKETCH PLAN PACKAGE.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- FOREST STAND DELINEATION PLAN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, FEBRUARY 2019.
- LANDING ROAD IS CLASSIFIED AS A MINOR COLLECTOR. LANDING ROAD IS A HOWARD COUNTY SCENIC ROAD. NO IMPROVEMENTS ARE PROPOSED. GREEN DRAKE ROAD IS CLASSIFIED AS A 40' R/W ACCESS PLACE (F03-134). THE PROPOSED EXTENSIONS OF GREEN DRAKE ROAD SHALL CONFORM WITH GUIDELINES WITHIN THE DESIGN MANUAL / ACCESS STREET.
- TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS / CEMETERIES LOCATED ON THIS PROPERTY (THE EXISTING HOME (1904 S04T) IS CLASSIFIED AS A HISTORIC STRUCTURES. THE EXISTING HOME AND GARAGE ARE TO BE REMOVED).
- THERE IS AN EXISTING HOUSE AND DETACHED GARAGE STRUCTURE ON THE PROPERTY.
- THE PROPOSED UNITS SHALL HAVE AN AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM.
- STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF MICRO-SCALE PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. MICRO-SCALE PRACTICES INCLUDE M-8 BIOSWALES, M-6 MICRO-BIORETENTION, M-5 DRY WELLS AND M-2 SUBMERGED GRAVEL WETLAND. ON LOT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED. MICRO-SCALE FACILITIES MAINTAINING ROAD RUNOFF SHALL BE DESIGNATED AS A PRIVATELY OWNED AND JOINTLY MAINTAINED FACILITIES (H.O.A. AND HOWARD COUNTY); HOWARD COUNTY WILL MAINTAIN OUTLET STRUCTURES AND PIPES WHILE THE H.O.A. SHALL MAINTAIN MULCH, WEEDING, PLANTINGS, PERFORATED UNDERDRAINS, FEEDER PIPES, AND ROUTINE SOIL REPLACEMENT.
- APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PLAN. REVIEW OF THIS PROJECT FOR COMPLIANCE WITH THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE HOWARD COUNTY ZONING REGULATIONS SHALL OCCUR AT THE SUBDIVISION PLAN/PLAT AND/OR SITE DEVELOPMENT PLAN AND/OR RED-LINE REVISION PROCESS. THE APPLICANT AND CONSULTANT SHOULD EXPECT ADDITIONAL AND MORE DETAILED REVIEW COMMENTS (INCLUDING COMMENTS THAT MAY ALTER THE OVERALL SITE DESIGN) AS THIS PROJECT PROGRESSES THROUGH THE PLAN REVIEW PROCESS.
- IN ACCORDANCE WITH SECTION 16.121(A)(4) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, RECREATION OPEN SPACE FOR THIS R-ED PROJECT IS 300 SF / UNIT (18 X 300 = 5,400 SF).
- A FLOODPLAIN STUDY WILL BE PERFORMED AT PRELIMINARY/SKETCH PLAN (SP) STAGE TO DETERMINE THE EXTENT OF THE 100 YEAR FLOODPLAIN, AND WHETHER FLOODPLAINS ARE PRESENT ON SITE.
- APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME.

ENVIRONMENTAL SITE DESIGN NARRATIVE:

- THE ENVIRONMENTAL AREAS FOR THIS SITE ARE LOCATED IN THE SOUTHWEST PORTION OF THE SITE INCLUDING A PERENNIAL STREAM AND NON-TIDAL WETLANDS. NO DISTURBANCE TO THESE ENVIRONMENTAL AREAS IS NECESSARY FOR THE PROPOSED DEVELOPMENT. THERE IS APPROXIMATELY 7.6 ACRES OF FOREST LOCATED ON THE PROPERTY. DISTURBANCES TO THE NATURAL RESOURCES WILL BE MINIMIZED TO THE GREATEST EXTENT POSSIBLE.
- THE SITE NATURALLY SLOPES TO THE SOUTH AND EAST WITH AN EXISTING RIDGE IN THE GENERAL MIDDLE OF THE SITE. THE SITE HAS BEEN DESIGNED TO MAINTAIN THE NATURAL DRAINAGE PATTERNS WITH A HIGH POINT IN THE PROPOSED ROAD ALONG THE EXISTING RIDGE. SOME OF THE RUNOFF TO THE EAST WILL BE PIPED TOWARD THE F-03-134 FACILITY KNOWN AS SWMF#2. HOWEVER THIS DIVERSION WILL SEND LESS AREA TO SWMF#2 THAN ORIGINALLY DESIGNED. THIS DIVERSION WILL ALSO DECREASE THE DRAINAGE AREA TO F-03-134 SWMF#1. THE PROPOSED SUBMERGED GRAVEL WETLAND IN THE SOUTHWEST PORTION OF THE SITE WILL PROVIDE ENVIRONMENTAL SITE DESIGN TREATMENT.
 - THE EXISTING DRAINAGE AREA TO POINT THE STREAM LEAVES THE SUBJECT PROPERTY IS 29AC±.
 - OTHER THAN THE DIVERSION DESCRIBED ABOVE, THERE ARE NO DRAMATIC CHANGES TO THE NATURAL DRAINAGE PATTERNS.
- THE CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH THE USE OF ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT TO THE MAXIMUM EXTENT PRACTICABLE (MEP). THE RESULTS OF THE ENVIRONMENTAL SITE DESIGN WILL REFLECT "WOODS IN GOOD CONDITION." THE ESD CONCEPT INCLUDES THE USE OF MICRO-BIORETENTION FACILITIES (M-6), DRYWELLS (M-5), AND A SUBMERGED GRAVEL WETLAND (M-2).
- SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE OF A PROPOSED SEDIMENT TRAP, SEDIMENT BASIN, EARTH DIKES, AND SUPER SILT FENCE PERIMETER CONTROLS. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD SOIL CONSERVATION DISTRICT DURING THE FUTURE SITE DEVELOPMENT PLAN PHASE OF THE PROJECT.
- STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE MET THROUGH THE USE OF MICRO-BIORETENTION FACILITIES (M-6), DRYWELLS (M-5), AND A SUBMERGED GRAVEL WETLAND (M-2). THE PROPOSED PRACTICES HAVE BEEN MAXIMIZED TO THE EXTENT PRACTICAL. THE CALCULATED RAINFALL TARGET (PE) FOR THIS PROJECT IS 1.58", AND THE TOTAL RUNOFF VOLUME (ESD) REQUIRED IS 10,692 CUBIC FEET.
- AN ALTERNATIVE COMPLIANCE REQUEST FOR REMOVAL OF SPRUCE TREES IS REQUIRED IN ORDER FOR THE PROPOSED DESIGN TO BE DEVELOPED. SIGNIFICANT DESIGN CHANGES MAY OCCUR BASED ON THE REVIEW OF THE PRELIMINARY EQUIVALENT SKETCH PLAN AND THE ALTERNATIVE COMPLIANCE REQUEST.

Stormwater Management Information						
Lot/Parcel Number	Facility Name & Number	Practice Type (Quantity)	Public	Private	HOA Maintains	Misc.
Open Space Lot 19	MBR 1	M-6 MICRO-BIORETENTION (1)	NO	YES	YES	
	MBR 2	M-6 MICRO-BIORETENTION (1)	NO	YES	YES	
Open Space Lot 20	GRAVEL WETLAND 1	M-2 SUBMERGED GRAVEL WETLAND (1)	NO	YES	YES	
	MBR 3	M-6 MICRO-BIORETENTION (1)	NO	YES	YES	
	MBR 4	M-6 MICRO-BIORETENTION (1)	NO	YES	YES	
	MBR 5	M-6 MICRO-BIORETENTION (1)	NO	YES	YES	

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature] 11.7.19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 [Signature] 10.31.19
 CHIEF, DIVISION OF LAND DEVELOPMENT

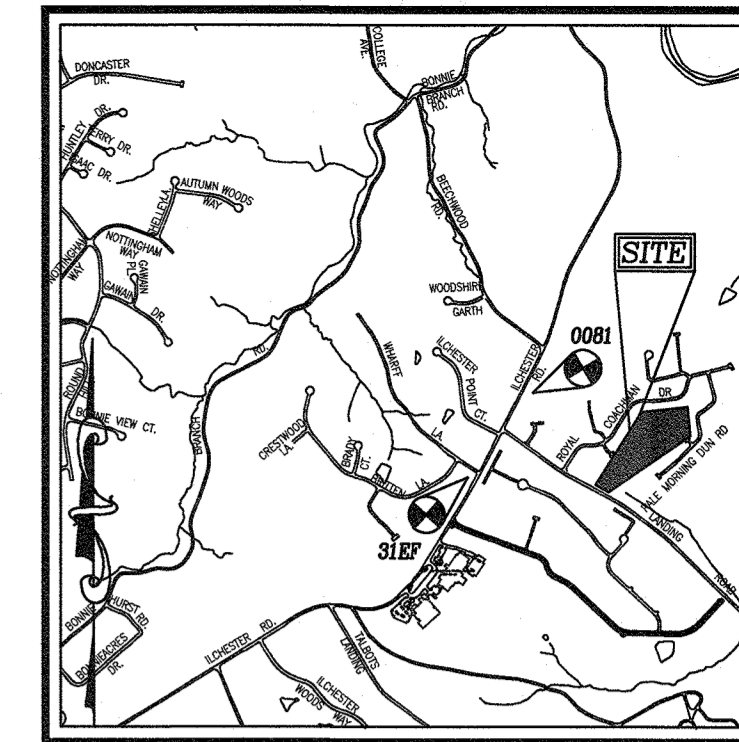
ENVIRONMENTAL CONCEPT PLAN

CASCADE RIDGE

LOTS 1-18 AND OPEN SPACE LOTS 19 - 21
 PARCEL 474 (L. 362 / F. 260)
 7330 GREEN DRAKE RD
 ELKRIDGE, MD 21075

BENCHMARKS

HOWARD COUNTY CONTROL STATION 31EF (CONC. MON.)
 N 571267.917 E 1376907.417 ELEV. 469.471
 LOCATION: INTERSECTION OF ILCHESTER ROAD AND WHARFF LANE
 HOWARD COUNTY CONTROL STATION 0081 (CONC. MON.)
 N 572335.335 E 1377504.092 ELEV. 477.92
 LOCATION: ILCHESTER ROAD SOUTH OF BEECHWOOD ROAD



VICINITY MAP

SCALE: 1"=2,000'
 ADC MAP COORDINATE: MAP 28, GRID 5E

SHEET INDEX

DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 7
EXISTING CONDITIONS PLAN	2 OF 7
LAYOUT SHEET	3 OF 7
GRADING PLAN	4 OF 7
CONCEPTUAL EROSION AND SEDIMENT CONTROL PLAN	5 OF 7
STORMWATER MANAGEMENT DRAINAGE AREA MAP	6 OF 7
STORMWATER MANAGEMENT DETAILS	7 OF 7

LEGEND:

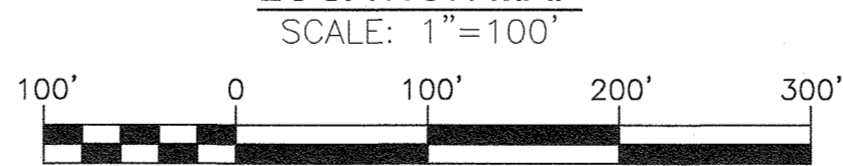
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- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING PAVING
- CENTERLINE OF EXISTING STREAM
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- EX. PUBLIC 100-YEAR FLOOD PLAN
- EXISTING FOREST CONSERVATION EASEMENT (PLAT 16655)
- PROPOSED CURB

ON-LOT STORMWATER MANAGEMENT PRACTICES

Lot Number	Address	M-5	Drywell
Lot 1	GREEN DRAKE ROAD	1	
Lot 2	GREEN DRAKE ROAD	1	
Lot 3	GREEN DRAKE ROAD	1	
Lot 4	GREEN DRAKE ROAD	2	
Lot 5	GREEN DRAKE ROAD	2	
Lot 6	GREEN DRAKE ROAD	2	
Lot 7	GREEN DRAKE ROAD	2	
Lot 8	GREEN DRAKE ROAD	2	
Lot 9	GREEN DRAKE ROAD	2	
Lot 10	GREEN DRAKE ROAD	2	
Lot 11	GREEN DRAKE ROAD	1	
Lot 12	GREEN DRAKE ROAD	2	
Lot 13	GREEN DRAKE ROAD	2	
Lot 14	GREEN DRAKE ROAD	2	
Lot 15	GREEN DRAKE ROAD	2	
Lot 16	GREEN DRAKE ROAD	2	
Lot 17	GREEN DRAKE ROAD	1	
Lot 18	GREEN DRAKE ROAD	1	
TOTALS		30	



LOCATION MAP



SITE ANALYSIS DATA CHART

- A. TOTAL PROJECT AREA: 9.085 AC.
- B. AREA OF PLAN SUBMISSION: 9.085 AC.
- C. AREA OF WETLANDS AND BUFFERS: 0.82 AC.
- D. AREA OF FLOODPLAIN: 0.00 AC +/-
- E. AREA OF FOREST: 7.6 AC.
- F. AREA OF STEEP SLOPES (25% & GREATER): APPROX. 0.05 AC +/-
- G. ERODIBLE SOILS: 5.92 AC. WITHIN LOD
- H. LIMIT OF DISTURBED AREA: 303,339 S.F. OR 6.96 AC.
- I. PROPOSED USES FOR SITE AND STRUCTURES: RESIDENTIAL SINGLE FAMILY DETACHED (SFD) HOMES
- J. GREEN OPEN AREA: 7.29 AC.
- K. PROPOSED IMPERVIOUS AREA: 1.79 AC.
- L. PRESENT ZONING DESIGNATION: R-ED (MIN 6,000 SF LOT)
- M. DPZ FILE REFERENCES: SP-19-034

OWNER/DEVELOPER

JOHN NEELS
 7330 GREEN DRAKE ROAD
 ELKRIDGE, MD 21075
 C/O KAREN MARTIN
 (410) 869-0134

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN

COVER SHEET

CASCADE RIDGE
 LOTS 1-18 AND OPEN SPACE LOTS 19 - 21

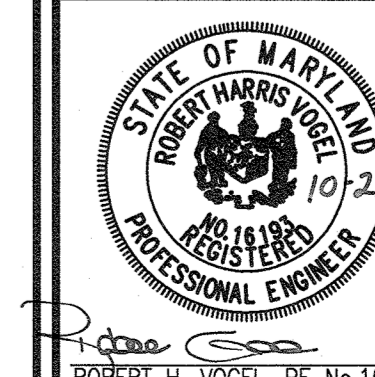
PARCEL 474
 TAX MAP 31 GRID: 11
 1ST ELECTION DISTRICT

ZONED: R-ED
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VOGEL ENGINEERING

TIMMONS GROUP

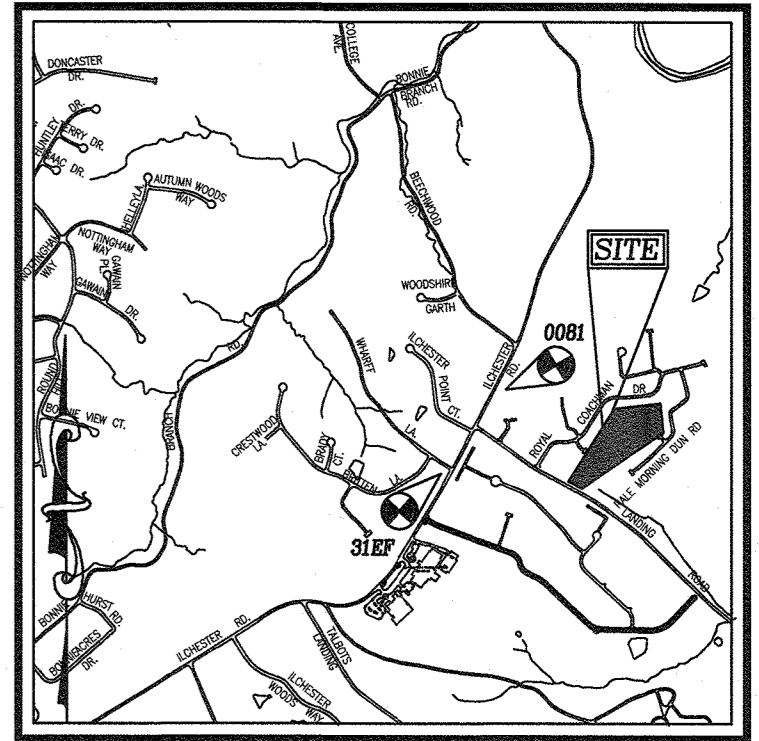
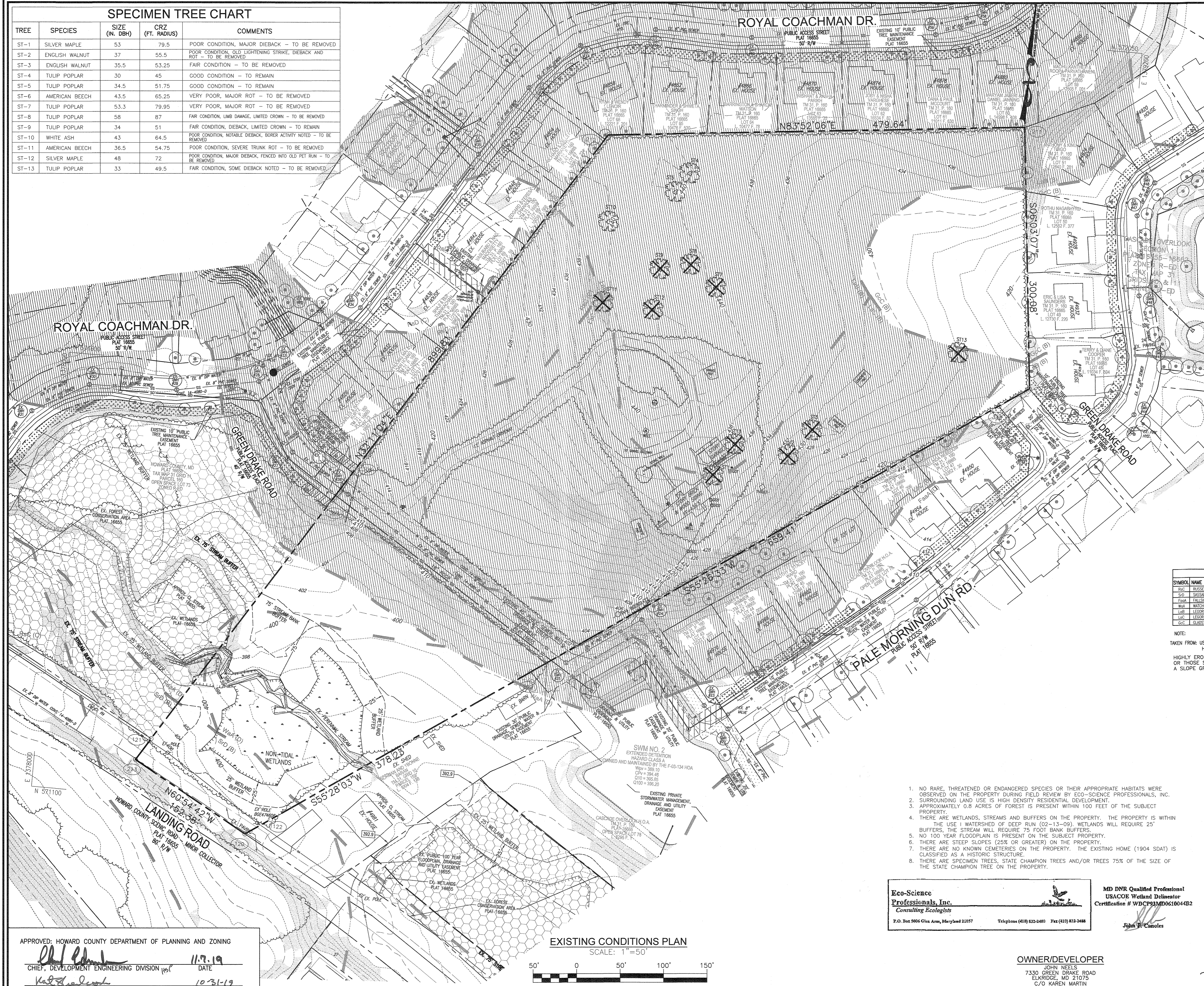
3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410.461.7666 F: 410.461.8961 www.timmons.com



PROFESSIONAL CERTIFICATE
 DESIGN BY: RHY
 DRAWN BY: MDL
 CHECKED BY: RHY
 DATE: OCTOBER 2019
 SCALE: AS SHOWN
 W.O. NO.: 42148
 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: 09-27-2020

SPECIMEN TREE CHART

TREE	SPECIES	SIZE (IN. DBH)	CRZ (FT. RADIUS)	COMMENTS
ST-1	SILVER MAPLE	53	79.5	POOR CONDITION, MAJOR DIEBACK - TO BE REMOVED
ST-2	ENGLISH WALNUT	37	55.5	POOR CONDITION, OLD LIGHTENING STRIKE, DIEBACK AND ROT - TO BE REMOVED
ST-3	ENGLISH WALNUT	35.5	53.25	FAIR CONDITION - TO BE REMOVED
ST-4	TULIP POPLAR	30	45	GOOD CONDITION - TO REMAIN
ST-5	TULIP POPLAR	34.5	51.75	GOOD CONDITION - TO REMAIN
ST-6	AMERICAN BEECH	43.5	65.25	VERY POOR, MAJOR ROT - TO BE REMOVED
ST-7	TULIP POPLAR	53.3	79.95	VERY POOR, MAJOR ROT - TO BE REMOVED
ST-8	TULIP POPLAR	58	87	FAIR CONDITION, LIMB DAMAGE, LIMITED CROWN - TO BE REMOVED
ST-9	TULIP POPLAR	34	51	FAIR CONDITION, DIEBACK, LIMITED CROWN - TO REMAIN
ST-10	WHITE ASH	43	64.5	POOR CONDITION, NOTABLE DIEBACK, BORER ACTIVITY NOTED - TO BE REMOVED
ST-11	AMERICAN BEECH	36.5	54.75	POOR CONDITION, SEVERE TRUNK ROT - TO BE REMOVED
ST-12	SILVER MAPLE	48	72	POOR CONDITION, MAJOR DIEBACK, FENCED INTO OLD PET RUN - TO BE REMOVED
ST-13	TULIP POPLAR	33	49.5	FAIR CONDITION, SOME DIEBACK NOTED - TO BE REMOVED



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING PAVING
- EXISTING UTILITY POLE
- EXISTING SANITARY MANHOLE
- EXISTING STORM DRAIN
- EXISTING SANITARY LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- SOILS
- EXISTING TREELINE
- CENTERLINE OF EXISTING STREAM
- EXISTING SPECIMEN TREE
- EXISTING SPECIMEN TREE TO BE REMOVED
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- EX. PUBLIC 100-YEAR FLOOD PLAIN
- EXISTING FOREST CONSERVATION EASEMENT (PLAT 16655)
- EXISTING SLOPES (WIDE 20% AND GREATER)
- HIGHLY ERODIBLE SOILS
- EXISTING EASEMENT PUBLIC SEWER, WATER, DRAINAGE AND UTILITY EASEMENT (PLAT 16655)

MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND

SYMBOL NAME / DESCRIPTION	GROUP	HYDRIC	Kw RANGE	EROSION FACTOR	<15% SLOPE
RUC BUSSETT FINE SANDY LOAM, 5 TO 10% SLOPES	C	NO	0.43	NO	YES
S20 CASSIOWAY AND CROWN, 10 TO 15% SLOPES	B	NO	0.37	NO	YES
F04H FALGOUTER SANDY LOAM, 0 TO 2% SLOPES	D	YES	0.24	NO	NO
W04 WATCHING SILT LOAM, 0 TO 3% SLOPES	D	YES	0.43	NO	NO
L04 LEIGOR SILT LOAM, 3 TO 8% SLOPES	B	NO	0.64	NO	YES
L06 LEIGOR SILT LOAM, 8 TO 15% SLOPES	B	NO	0.64	NO	YES
G04 GLAISTONE-LEIGOR COMPLEX, 8 TO 15% SLOPES	B	NO	0.32	NO	NO

NOTE:
 TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, AND HOWARD COUNTY SOIL CONSERVATION DISTRICT WEBSITE DOCUMENTS
 HTTPS://WWW.HOWARDSCD.ORG/DOCUMENTS
 HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

1. NO RARE, THREATENED OR ENDANGERED SPECIES OR THEIR APPROPRIATE HABITATS WERE OBSERVED ON THE PROPERTY DURING FIELD REVIEW BY ECO-SCIENCE PROFESSIONALS, INC.
2. SURROUNDING LAND USE IS HIGH DENSITY RESIDENTIAL DEVELOPMENT.
3. APPROXIMATELY 0.8 ACRES OF FOREST IS PRESENT WITHIN 100 FEET OF THE SUBJECT PROPERTY.
4. THERE ARE WETLANDS, STREAMS AND BUFFERS ON THE PROPERTY. THE PROPERTY IS WITHIN THE USE I WATERSHED OF DEEP RUN (02-13-09). WETLANDS WILL REQUIRE 25' BUFFERS, THE STREAM WILL REQUIRE 75 FOOT BANK BUFFERS.
5. NO 100 YEAR FLOODPLAIN IS PRESENT ON THE SUBJECT PROPERTY.
6. THERE ARE STEEP SLOPES (25% OR GREATER) ON THE PROPERTY.
7. THERE ARE NO KNOWN CEMETERIES ON THE PROPERTY. THE EXISTING HOME (1904 SDAT) IS CLASSIFIED AS A HISTORIC STRUCTURE.
8. THERE ARE SPECIMEN TREES, STATE CHAMPION TREES AND/OR TREES 75% OF THE SIZE OF THE STATE CHAMPION TREE ON THE PROPERTY.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
 [Signature]
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 11.7.19
 [Signature]
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 10.31.19

EXISTING CONDITIONS PLAN
 SCALE: 1"=50'
 50' 0 50' 100' 150'

Eco-Science Professionals, Inc.
 Consulting Ecologists
 P.O. Box 5066 Glen Arm, Maryland 21057 Telephone (410) 832-2480 Fax (410) 832-2488

MD DNR Qualified Professional USACOE Wetland Delistator
 Certification # WDPC93MD06100482
 John W. Canoles

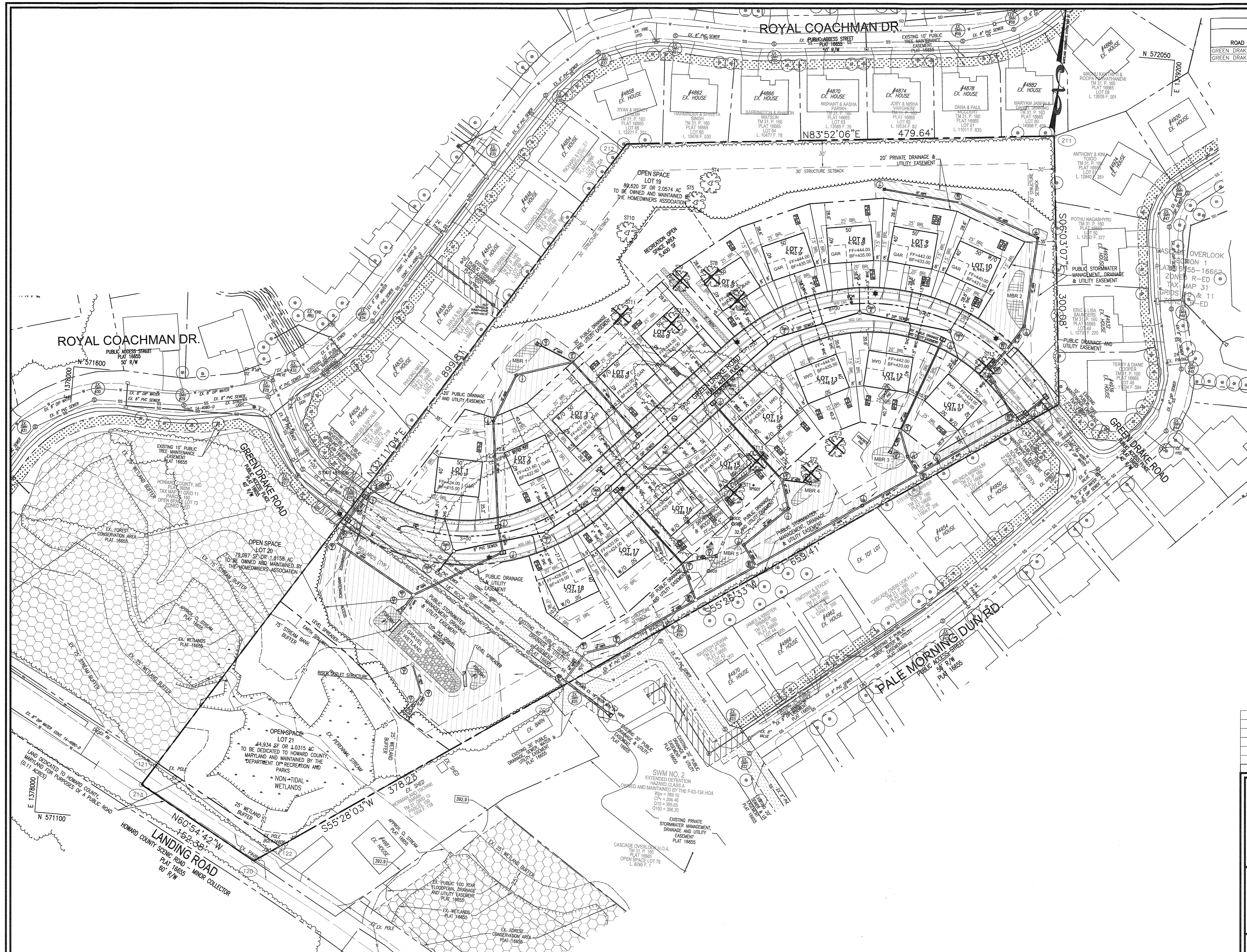
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NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
EXISTING CONDITIONS PLAN
CASCADE RIDGE
 LOTS 1-18 AND OPEN SPACE LOTS 19-21
 PARCEL: 474 ZONED: R-ED
 TAX MAP: 31 GRID: 11 L 392 / E 280
 1ST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING
TIMMONS GROUP
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

PROFESSIONAL CERTIFICATE
 DESIGN BY: RHV
 DRAWN BY: MDL
 CHECKED BY: RHV
 DATE: OCTOBER 2019
 SCALE: AS SHOWN
 W.O. NO.: 42148
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 ROBERT H. VOGEL, PE No.16193
 2 SHEET OF 7



CURVE TABLE						
ROAD	CURVE	LENGTH	RADIUS	DELTA ANGLE	TANGENT	CHORD DIRECTION
GREEN DRAKE ROAD	C1	290.00	210.00	79°07'22"	173.49	N82°35'56"E
GREEN DRAKE ROAD	C2	336.66	210.00	91°51'09"	216.90	S88°57'49"W

COORDINATE TABLE		
POINT	NORTHING	EASTING
120	N 571066.9197	E 1378249.6263
121	N 571166.4528	E 1378132.4857
122	N 571085.9219	E 1378277.2412
209	N 571281.3290	E 1378561.2150
210	N 571655.3690	E 1379104.2810
211	N 571953.7760	E 1379072.6430
212	N 571902.5430	E 1378595.7450
213	N 571140.9995	E 1378116.4666
307	N 571457.2201	E 1378315.4736
308	N 571491.0826	E 1378336.7651
333	N 571632.0299	E 1379070.9916

- LEGEND:**
- PROPERTY LINE
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 - ADJACENT PROPERTY LINE
 - EXISTING PARKING
 - EXISTING UTILITY POLE
 - EXISTING SANITARY MANHOLE
 - EXISTING SANITARY LINE
 - EXISTING FIRE HYDRANT
 - EXISTING STORM DRAIN
 - EXISTING WATER LINE
 - EXISTING TREELINE
 - CENTERLINE OF EXISTING STREAM
 - EXISTING SPECIMEN TREE
 - EXISTING SPECIMEN TREE TO BE REMOVED
 - EXISTING LANDSCAPING UNDER F-03-134
 - EXISTING WETLANDS
 - EXISTING WETLAND BUFFER
 - EX. PUBLIC 100-YEAR FLOOD PLAN
 - EXISTING FOREST CONSERVATION EASEMENT (PLAT 16655)
 - PROPOSED STORMDRAIN
 - PROPOSED SIDEWALK
 - PROPOSED TREELINE
 - PROPOSED CURB
 - PROP. PRIVATE DRAINAGE & UTILITY EASEMENT
 - PROP. PUBLIC DRAINAGE & UTILITY EASEMENT
 - EXISTING EASEMENT PUBLIC SEWER, WATER, DRAINAGE AND UTILITY EASEMENT (PLAT 16655)

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
 LAYOUT PLAN
CASCADE RIDGE
 LOTS 1-18 AND OPEN SPACE LOTS 19 - 21

PARCEL: 474
 TAX MAP: 31 GRID: 11
 1ST ELECTION DISTRICT

ZONED: R-ED
 L 352 / F 280
 HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

TIMMONS GROUP
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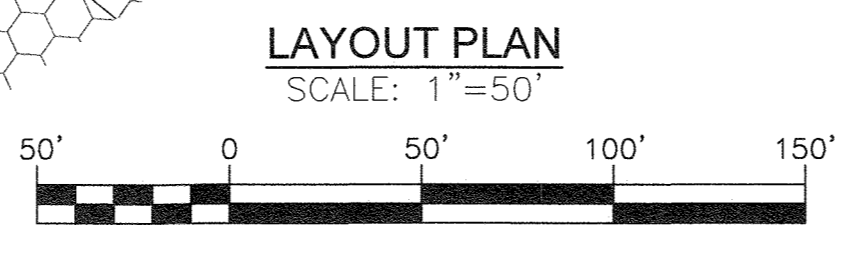
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3 SHEET OF 7

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Chad Edwards 11.7.19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION #51 DATE

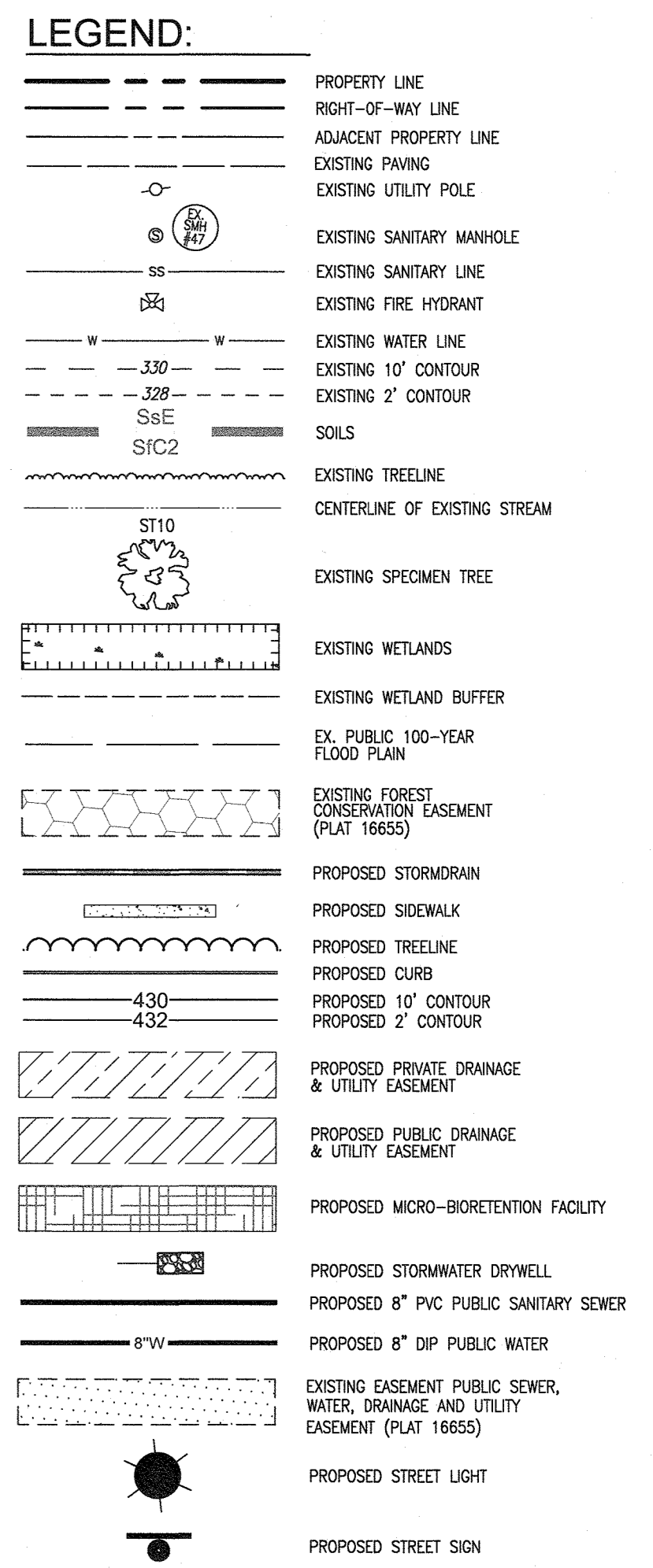
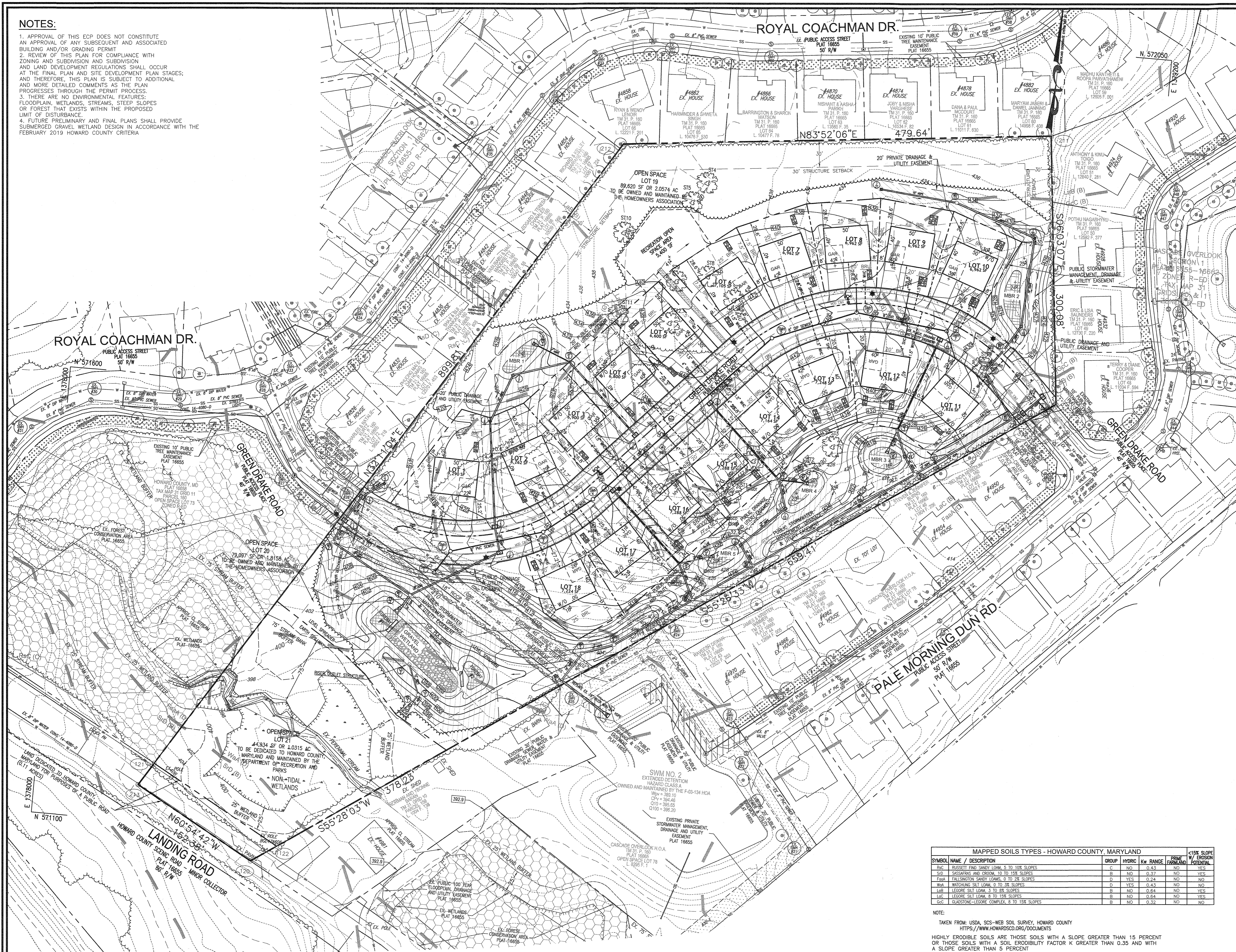
Kent Seawool 10-31-19
 CHIEF, DIVISION OF LAND DEVELOPMENT #3 DATE



OWNER/DEVELOPER
 JOHN NEELS
 7330 GREEN DRAKE ROAD
 ELK RIDGE, MD 21075
 C/O KAREN MARTIN
 (410) 869-0134

NOTES:

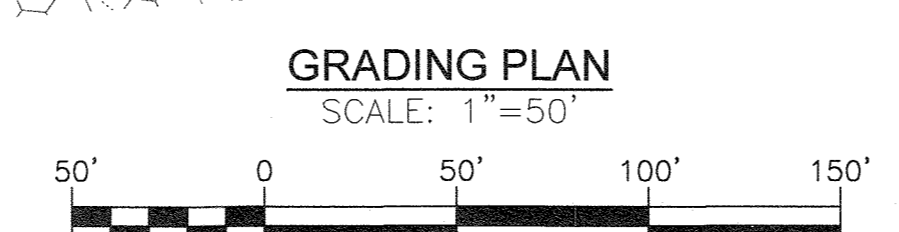
1. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED BUILDING AND/OR GRADING PERMIT
2. REVIEW OF THIS PLAN FOR COMPLIANCE WITH ZONING AND SUBDIVISION AND SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE FINAL PLAN AND SITE DEVELOPMENT PLAN STAGES; AND THEREFORE, THIS PLAN IS SUBJECT TO ADDITIONAL AND MORE DETAILED COMMENTS AS THE PLAN PROGRESSES THROUGH THE PERMIT PROCESS.
3. THERE ARE NO ENVIRONMENTAL FEATURES: FLOODPLAIN, WETLANDS, STREAMS, STEEP SLOPES OR FOREST THAT EXISTS WITHIN THE PROPOSED LIMIT OF DISTURBANCE.
4. FUTURE PRELIMINARY AND FINAL PLANS SHALL PROVIDE SUBMERGED GRAVEL WETLAND DESIGN IN ACCORDANCE WITH THE FEBRUARY 2019 HOWARD COUNTY CRITERIA



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature] 11-7-19
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE

[Signature] 10-31-19
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE



MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	Kw RANGE	PRIME FARMLAND	<15% SLOPE W/ EROSION POTENTIAL
BnC	BUSSETT FINE SANDY LOAM, 5 TO 10% SLOPES	C	NO	0.43	NO	YES
S0	SANDWAS AND CROOK, 10 TO 15% SLOPES	B	NO	0.37	NO	YES
Foa	FALLSINGTON SANDY LOAMS, 0 TO 2% SLOPES	D	YES	0.24	NO	NO
Wka	WATCHUNG SILT LOAM, 0 TO 3% SLOPES	D	YES	0.43	NO	NO
LgB	LEIGRE SILT LOAM, 3 TO 8% SLOPES	B	NO	0.64	NO	YES
LgC	LEIGRE SILT LOAM, 8 TO 15% SLOPES	B	NO	0.64	NO	YES
GcC	GLANSTONE-LEIGRE COMPLEX, 8 TO 15% SLOPES	B	NO	0.32	NO	NO

NOTE:
 TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
 HTTPS://WWW.HOWARDSCD.ORG/DOCUMENTS

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

OWNER/DEVELOPER
 JOHN NEELS
 7330 GREEN DRAKE ROAD
 ELKDRIDGE, MD 21075
 C/O KAREN MARTIN
 (410) 869-0134

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
 GRADING PLAN
CASCADE RIDGE
 LOTS 1-18 AND OPEN SPACE LOTS 19-21

PARCEL 474 TAX MAP: 31 GRID: 11 ZONED: R-ED L 362 / E 280 HOWARD COUNTY, MARYLAND 1ST ELECTION DISTRICT

VOGEL ENGINEERING
 TIMMONS GROUP
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

PROFESSIONAL CERTIFICATE

DESIGN BY: RHY
 DRAWN BY: MDL
 CHECKED BY: RHY
 DATE: OCTOBER 2019
 SCALE: AS SHOWN
 W.O. NO.: 42148

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE JURISDICTION OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 09-27-2020

ROBERT H. VOGEL, PE No.16193

4 SHEET OF 7

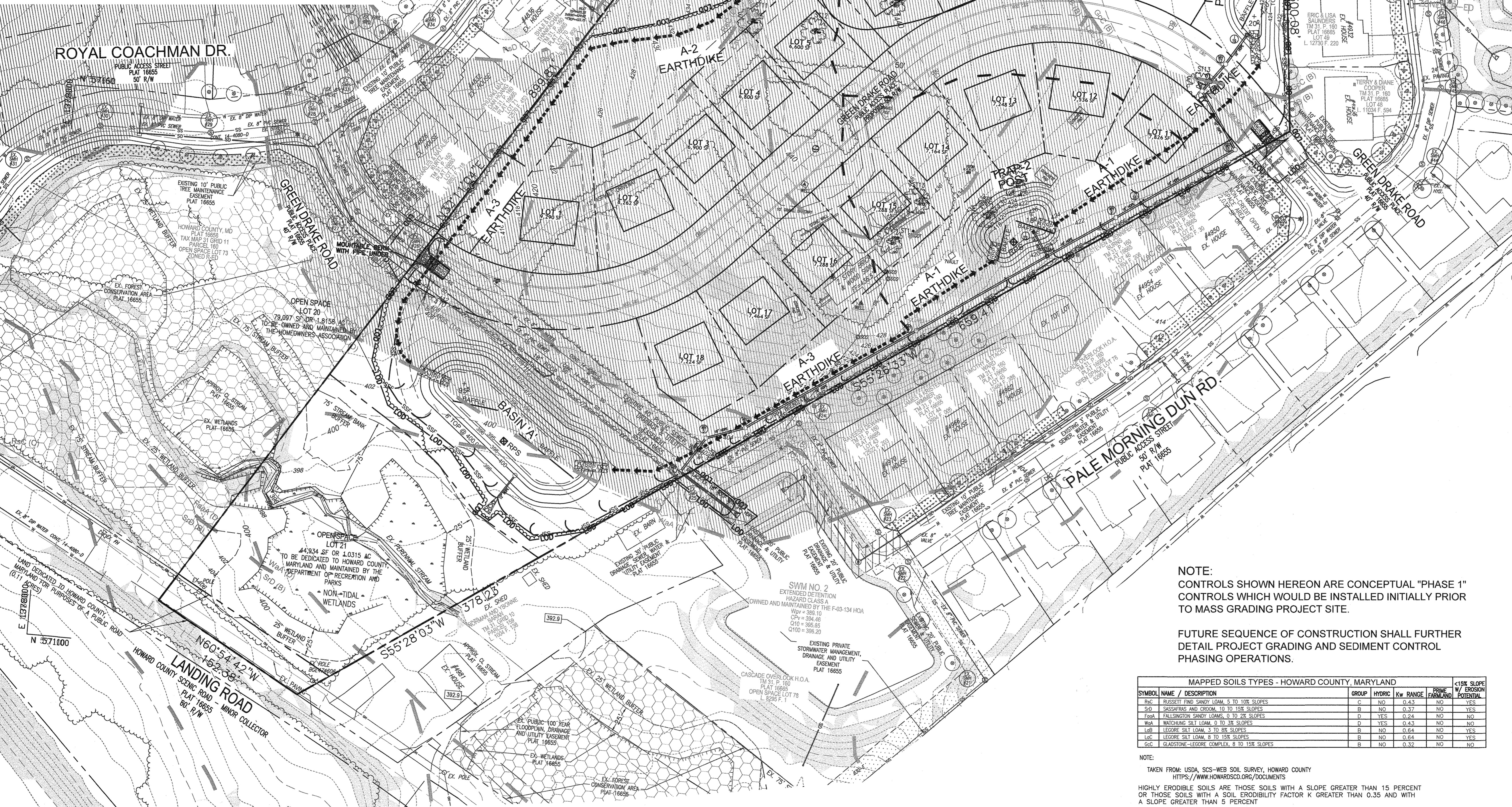
HSCD NOTES:

APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME.

1. THE FINAL PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING
2. THE PROJECT SHALL ADDRESS ANY TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.
3. THE FINAL PLAN SUBMISSION SHALL PROVIDE A DRAINAGE AREA MAP SPECIFIC TO CHOSEN SEDIMENT CONTROLS
4. THE FINAL PLAN SUBMISSION SHALL PROVIDE COMPUTATIONS TO VERIFY VELOCITIES ALONG DIKES, SWALES AND AT DIKES OUTLET LOCATIONS

NOTES:

1. APPROVAL OF THIS ECP DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED BUILDING AND/OR GRADING PERMIT
2. REVIEW OF THIS PLAN FOR COMPLIANCE WITH ZONING AND SUBDIVISION AND SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE FINAL PLAN AND SITE DEVELOPMENT PLAN STAGES; AND THEREFORE, THIS PLAN IS SUBJECT TO ADDITIONAL AND MORE DETAILED COMMENTS AS THE PLAN PROGRESSES THROUGH THE PERMIT PROCESS.
3. THERE ARE NO ENVIRONMENTAL FEATURES: FLOODPLAIN, WETLANDS, STREAMS, STEEP SLOPES OR FOREST THAT EXISTS WITHIN THE PROPOSED LIMIT OF DISTURBANCE.



LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- - - - - EXISTING PAVING
- EXISTING UTILITY POLE
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER LINE
- - - - - EXISTING 10' CONTOUR
- - - - - EXISTING 2' CONTOUR
- S8E SOILS
- S1C2 SOILS
- EXISTING TREELINE
- CENTERLINE OF EXISTING STREAM
- EXISTING SPECIMEN TREE
- EXISTING WETLANDS
- EXISTING WETLAND BUFFER
- EX. PUBLIC 100-YEAR FLOOD PLAN
- EXISTING FOREST CONSERVATION EASEMENT (PLAT 16655)
- PROPOSED STORMDRAIN
- PROPOSED SIDEWALK
- PROPOSED TREELINE
- PROPOSED CURB
- PROPOSED 10' CONTOUR
- PROPOSED 2' CONTOUR
- LOD LIMIT OF DISTURBANCE
- STABILIZED CONSTRUCTION ENTRANCE W/ MOUNTAIN BERM
- RIPRAP PROTECTION
- BAFFLE
- RPPS REMOVABLE PUMPING STATION
- SSF SUPER SILT FENCE
- SF SILT FENCE
- EARTHDIKE
- HIGHLY ERODIBLE SOILS
- EXISTING SLOPES (WIDE 20% AND GREATER)
- PROP. PRIVATE DRAINAGE & UTILITY EASEMENT
- PROP. PUBLIC DRAINAGE & UTILITY EASEMENT
- EXISTING EASEMENT PUBLIC SEWER, WATER, DRAINAGE AND UTILITY EASEMENT (PLAT 16655)

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.

NOTE:
 EITHER PERMANENT OR TEMPORARY STABILIZATION IS TO BE APPLIED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR REGARDLESS OF DAYS/DATES IN THE STANDARD SEDIMENT CONTROL NOTES AND/OR SEEDING SPECIFICATIONS.

NOTE:
 CONTROLS SHOWN HEREON ARE CONCEPTUAL "PHASE 1" CONTROLS WHICH WOULD BE INSTALLED INITIALLY PRIOR TO MASS GRADING PROJECT SITE.

FUTURE SEQUENCE OF CONSTRUCTION SHALL FURTHER DETAIL PROJECT GRADING AND SEDIMENT CONTROL PHASING OPERATIONS.

MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND					
SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	Kw RANGE	PRIME FARMLAND POTENTIAL
S2C	SUBSET FINE SANDY LOAM, 5 TO 10% SLOPES	C	NO	0.45	NO
S0	SASSAPARA AND CROM, 10 TO 15% SLOPES	B	NO	0.37	NO
FauA	FALLSATION SANDY LOAMS, 0 TO 2% SLOPES	D	YES	0.24	NO
WMA	WINCHING SILT LOAM, 0 TO 2% SLOPES	D	YES	0.43	NO
LRB	LEGORE SILT LOAM, 5 TO 10% SLOPES	B	NO	0.64	NO
L0c	LEGORE SILT LOAM, 8 TO 15% SLOPES	B	NO	0.64	NO
G0c	GLADSTONE-LEGORE COMPLEX, 8 TO 15% SLOPES	B	NO	0.32	NO

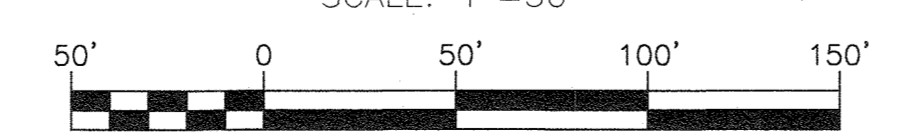
NOTE:
 TAKEN FROM: USDA, SCS-WEB SOIL SURVEY, HOWARD COUNTY
 HTTPS://WWW.HOWARDSCD.ORG/DOCUMENTS
 HIGHLY ERODIBLE SOILS ARE THOSE SOILS WITH A SLOPE GREATER THAN 15 PERCENT OR THOSE SOILS WITH A SOIL ERODIBILITY FACTOR K GREATER THAN 0.35 AND WITH A SLOPE GREATER THAN 5 PERCENT

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION #8
 DATE: 11.7.19

 CHIEF, DIVISION OF LAND DEVELOPMENT #3
 DATE: 10.31.19

SOILS MAP AND CONCEPT SOIL EROSION & SEDIMENT CONTROL PLAN



OWNER/DEVELOPER
 JOHN NEELS
 7330 GREEN DRAKE ROAD
 ELKDRIDGE, MD 21075
 C/O KAREN MARTIN
 (410) 869-0134

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
 SOILS MAP AND CONCEPT SOIL
 EROSION & SEDIMENT CONTROL PLAN
CASCADE RIDGE
 LOTS 1-18 AND OPEN SPACE LOTS 19 - 21

PARCEL: 474
 TAX MAP: 31 GRID: 11
 1ST ELECTION DISTRICT

ZONED: R-ED
 L 382 / F 280
 HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

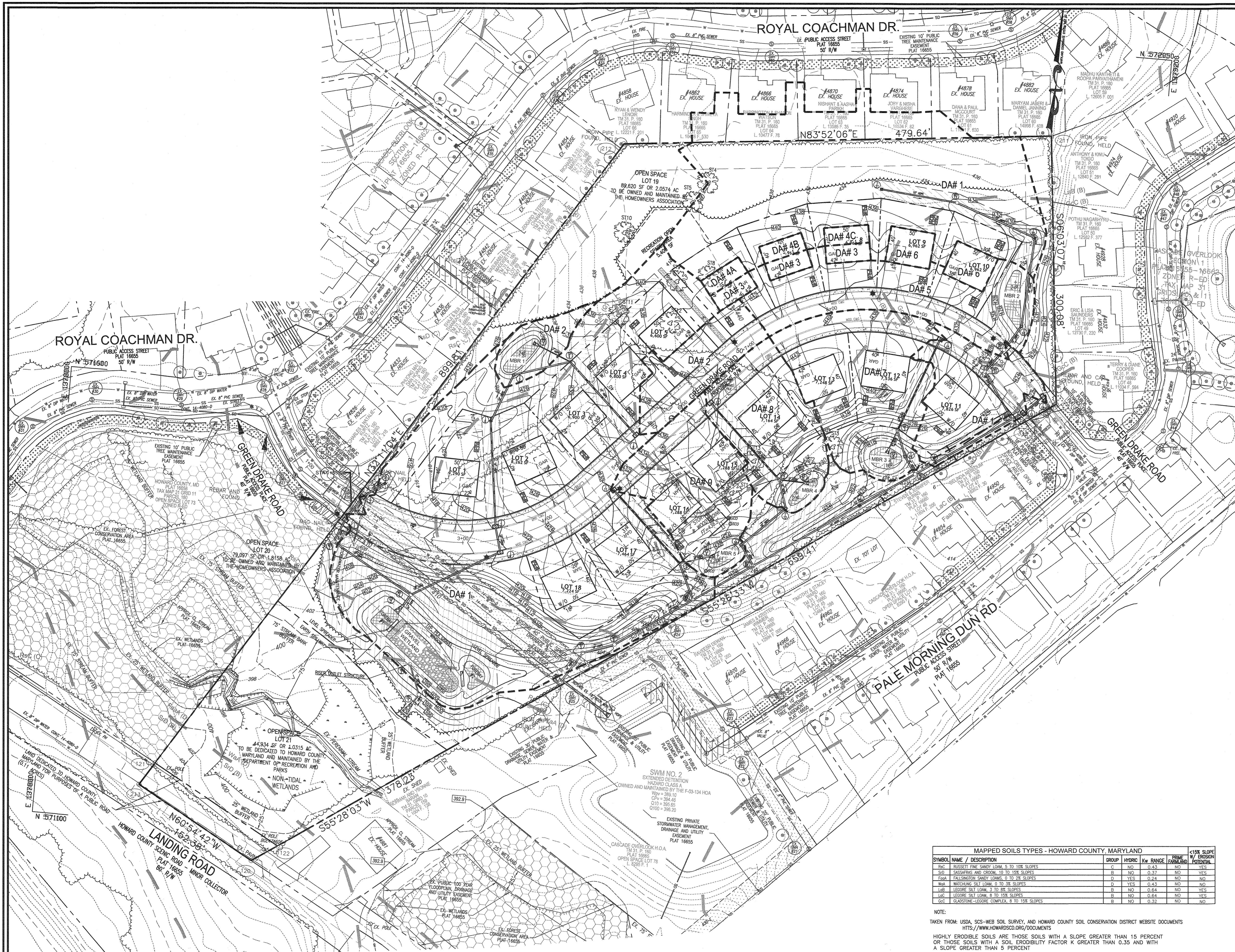
TIMMONS GROUP
 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043
 P: 410.461.7666 F: 410.461.8961 www.timmons.com

DESIGN BY: RHV
 DRAWN BY: MDL
 CHECKED BY: RHV
 DATE: OCTOBER 2019
 SCALE: AS SHOWN
 W.O. NO.: 42148

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 PROVISIONS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE 09-27-2020

ROBERT H. VOGEL, PE No. 16193

5 SHEET OF 7



LEGEND:

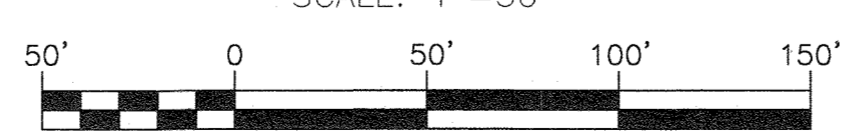
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	PROPOSED SIDEWALK
	PROPOSED TREE LINE
	PROPOSED CURB
	PROPOSED 10' CONTOUR
	PROPOSED 2' CONTOUR
	DRAINAGE AREA DESIGNATION
	DRAINAGE AREA
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MAPPED SOILS TYPES - HOWARD COUNTY, MARYLAND

SYMBOL	NAME / DESCRIPTION	GROUP	HYDRIC	Kw RANGE	PRIME FARMLAND	<15% SLOPE	W/ EROSION POTENTIAL
SC	ROBERT FIRE SANDY LOAM, 5 TO 10% SLOPES	C	NO	0.33	NO	NO	YES
SD	SASSAPARA AND CROOM, 10 TO 15% SLOPES	B	NO	0.32	NO	NO	YES
FoA	FALLSINGTON SANDY LOAMS, 0 TO 2% SLOPES	D	YES	0.24	NO	NO	NO
Wd	WATCHUNG SILT LOAM, 0 TO 3% SLOPES	D	YES	0.53	NO	NO	NO
LR	LEGORE SILT LOAM, 3 TO 8% SLOPES	B	NO	0.64	NO	NO	YES
Lo	LEGORE SILT LOAM, 8 TO 15% SLOPES	B	NO	0.64	NO	NO	YES
GC	GLADSTONE-LEGORE COMPLEX, 8 TO 15% SLOPES	B	NO	0.32	NO	NO	NO

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STORMWATER MANAGEMENT DRAINAGE AREA MAP
 SCALE: 1"=50'



APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 11.7.19

 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 10-31-19

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ENVIRONMENTAL CONCEPT PLAN
 STORMWATER MANAGEMENT
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 6 SHEET OF 7

