

GENERAL NOTES

1. THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
2. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PREPARED BY VOGEL ENGINEERING+TIMMONS GROUP WITHIN THE SOLAR AREA DATED SEPTEMBER 2019. OTHER TOPOGRAPHY FROM HOWARD COUNTY GIS.
3. THE PROJECT BOUNDARY IS BASED ON A BOUNDARY SURVEY PERFORMED BY VOGEL ENGINEERING+TIMMONS GROUP DATED SEPTEMBER 2019.
4. 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. 09A9 AND 09B11 WERE USED FOR THIS PROJECT.
5. THE SUBJECT PROPERTY IS ZONED "RC-DEO" IN ACCORDANCE WITH THE 10/6/13 ZONING REGULATIONS, AND IS SUBJECT TO THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003.
6. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS, STREAM(S) OR THEIR REQUIRED BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN.
7. THERE IS NO FEMA 100 YEAR FLOODPLAIN LOCATED ON-SITE.
8. NO STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE LOCATED ONSITE.
9. FOREST CONSERVATION OBLIGATIONS FOR THIS PROJECT SHALL BE ADDRESSED BY A FOREST CONSERVATION PLAN SUBMITTED WITH THE SITE DEVELOPMENT PLAN.
10. WETLANDS SHOWN ONSITE ARE BASED ON ENVIRONMENTAL REPORT BY ECO-SCIENCE PROFESSIONALS, INC. MR. JOHN CANOLES, DATED AUGUST 23, 2019. THERE ARE NO PROPOSED DISTURBANCES TO WETLANDS AND WETLAND BUFFERS AND STREAM AND STREAM BUFFERS.
11. GEOTECHNICAL INVESTIGATIONS SHALL BE COMPLETED AND SUBMITTED WITH THE FUTURE SITE DEVELOPMENT PLAN.
12. A NOISE STUDY IS NOT REQUIRED FOR THIS SITE.
13. SYKESVILLE ROAD (MD ROUTE 32) IS AN INTERMEDIATE ARTERIAL ROAD AND DAY ROAD IS LOCAL ROAD. NEITHER ROAD IS CONSIDERED SCENIC ROAD.
14. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS, CEMETERIES, OR HISTORIC STRUCTURES LOCATED ON THIS PROPERTY.
15. STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF STRUCTURAL AND NON-STRUCTURAL PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. NON-STRUCTURAL PRACTICES INCLUDE NON ROOFTOP DISCONNECTION (N-2), MICRO BIO RETENTION (M-6), AND STRUCTURAL PRACTICES INCLUDE LEVEL SPREADERS. THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED.
16. APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) DOES NOT CONSTITUTE AN APPROVAL OF ANY SUBSEQUENT AND ASSOCIATED SUBDIVISION PLAN 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.
17. APPROVAL OF THIS ENVIRONMENTAL CONCEPT PLAN (ECP) BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT DOES NOT GRANT APPROVAL OF THE PROPOSED SEDIMENT CONTROL SCHEME. THE SITE DEVELOPMENT PLAN SHALL INCLUDE A SEQUENCE OF CONSTRUCTION WHICH SHALL DETAIL SEDIMENT & EROSION CONTROLS AND PHASING AND ADDRESS THE PROJECT TEMPORARY STORMWATER MANAGEMENT REQUIREMENTS.
18. ISOLATED SURFACE SMOOTHING AND/OR FINE GRADING MAY BE REQUIRED TO SUPPORT SOLAR EQUIPMENT INSTALLATION. HOWEVER, NO MASS GRADING WILL BE REQUIRED. ISOLATED FINE GRADES WILL BE PROVIDED WITH SITE DEVELOPMENT PLAN SUBMISSION AS REQUIRED.
19. THE SUBJECT PROPERTY IS SUBJECT TO THE HOWARD COUNTY LAND PRESERVATION PROGRAM. REFERENCE EASEMENT HO-85-04-E.
20. WETLAND AND ENVIRONMENTAL REPORT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, AUGUST 23, 2019.
 - NO WETLANDS, STREAMS AND THEIR BUFFERS ARE PRESENT WITHIN THE PROJECT AREA.
 - ONE (1) SPECIMEN TREE WAS FOUND ONSITE.
 - NO FOREST IS PRESENT WITHIN THE PROJECT LIMITS.

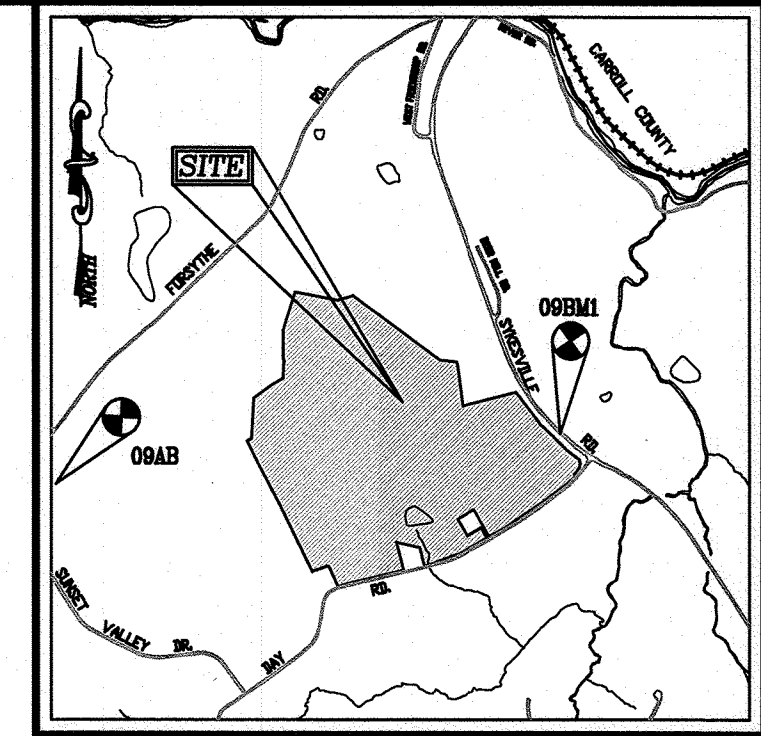
ENVIRONMENTAL CONCEPT PLAN

METAL MARK SOLAR

700 SYKESVILLE ROAD
HOWARD COUNTY, MARYLAND

BENCHMARKS

HOWARD COUNTY BENCHMARK 09BM1
N 600,761.020 E 1,332,832.438 ELEV. 459.104
HOWARD COUNTY BENCHMARK 09AB
N 612,167.152 E 1,316,859.812 ELEV. 606.406



VICINITY MAP
SCALE: 1"=2000'
ADC MAP COORDINATES: PAGE 11 / GRID A-B 3 & A-B 4

COORDINATE TABLE

POINT	NORTH	EAST
800	613415.43	1321961.20
801	612831.88	1322650.35
802	612737.79	1322684.95
803	612658.60	1322832.43
804	612647.34	1322818.39
805	611986.50	1321734.79
806	612027.28	1321670.83
807	612262.85	1321558.00
808	612150.16	1321392.77
809	611984.83	1321256.46
810	612083.54	1321650.04
811	611982.76	1321713.89
812	611796.19	1321430.71
813	611687.60	1321067.88
814	611658.15	1321041.86
815	611897.07	1320761.41
816	611629.52	1320873.74
817	611447.25	1320554.86
818	611469.60	1320121.89
819	611424.14	1320142.82
820	611696.11	1320300.19
821	611644.26	1319911.94
822	612982.28	1319225.14
823	613038.51	1319272.25
824	613422.20	1319235.51
825	613585.83	1319439.47
826	613625.23	1319562.81
827	614119.38	1319549.31
828	614518.76	1319630.95
829	614569.82	1319711.76
830	614254.47	1319689.67
831	614488.12	1320079.97
832	614541.36	1320026.25
833	613877.63	1321165.25
834	613967.44	1321330.24
835	613797.87	1321330.24
836	613382.27	1321268.86

LEGEND:

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJACENT PROPERTY LINE
- EXISTING PAVING
- LIMIT OF DISTURBANCE AREA
- LOD --- LOD
- --- SOLAR FENCE

SHEET INDEX

DESCRIPTION	SHEET NO.
COVER SHEET	1 OF 6
LAYOUT, SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN	2-4 OF 6
STORMWATER MANAGEMENT DRAINAGE AREA MAP	5 OF 6
STORMWATER MANAGEMENT DRAINAGE AREA MAP	6 OF 6

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NO.	REVISION	DATE

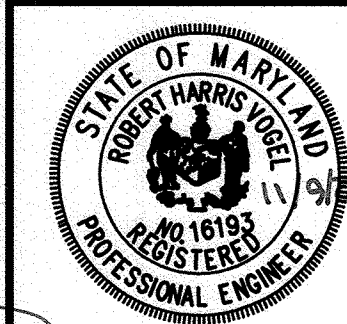
ENVIRONMENTAL CONCEPT PLAN
COVER SHEET
METALMARK SOLAR
700 SYKESVILLE RD
SYKESVILLE, MD 21784

TAX MAP 9 BLOCK 3
3RD ELECTION DISTRICT
ZONED RC-DEO
PARCEL 94
HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

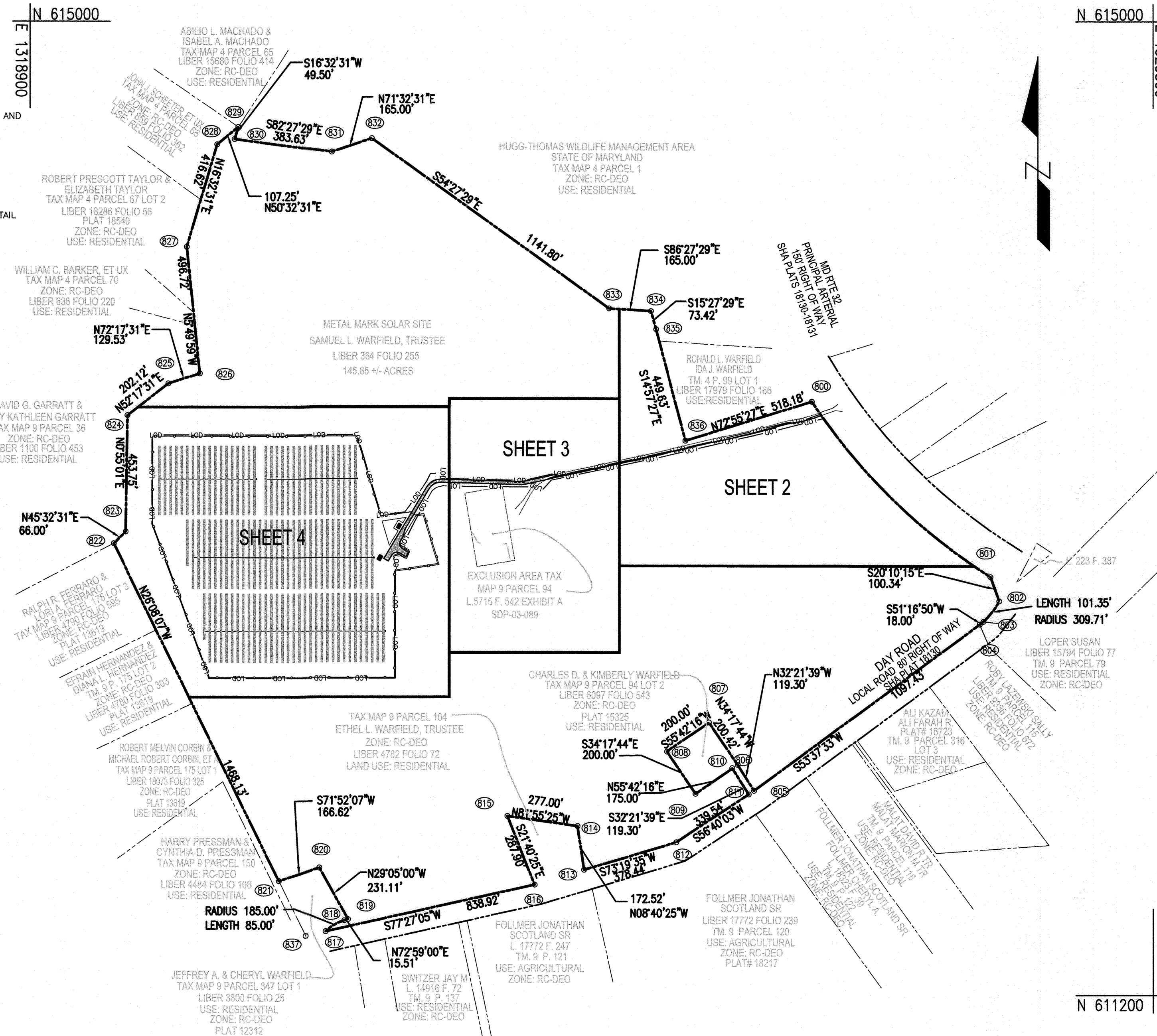
TIMMONS GROUP

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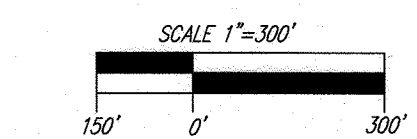


DESIGN BY: RHY
DRAWN BY: KG
CHECKED BY: RHY
DATE: NOVEMBER 2020
SCALE: AS SHOWN
W.O. NO.: 41993

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 09-27-2022.



LOCATION MAP
SCALE: 1"=300'



ENVIRONMENTAL SITE DESIGN NARRATIVE:

1. THERE ARE ENVIRONMENTAL FEATURES LOCATED ON THE SOUTHERN AND NORTHERN PART OF THE SITE WHICH INCLUDE SMALL WETLAND AREA. A SPECIMEN TREE IS LOCATED WITHIN PROXIMITY OF THE PROPOSED DRIVEWAY. A FORESTED EDGE IS PRESENT TO THE WEST OF THE PROPOSED SOLAR ARRAY ALONG THE PROPERTY LINE AND EXTEND TO THE ADJACENT PROPERTY. THERE IS NO PROPOSED DISTURBANCE TO THE WETLAND OR THE WETLAND BUFFER.
2. THE SITE NATURALLY SLOPES FROM THE WEST TO EAST. THE SITE HAS BEEN DESIGNED TO MAINTAIN THE NATURAL DRAINAGE PATTERNS, WITH NO CHANGES TO THE NATURAL DRAINAGE PATTERN.
3. THE CONCEPTUAL REDUCTION IN IMPERVIOUS AREA THROUGH BETTER SITE DESIGN IS ACHIEVED THROUGH THE ENVIRONMENTAL SITE DESIGN (ESD) FOR THE PROJECT TO THE MAXIMUM EXTENT PRACTICABLE (MEP). THE RESULTS OF THE ENVIRONMENTAL SITE DESIGN FOR THIS PROJECT WILL REFLECT "WOODS IN GOOD CONDITION". THE ESD CONCEPT INCLUDES THE USE OF NON ROOFTOP DISCONNECTION (N-2), MICRO BIO RETENTIONS (M-6), AND LEVEL SPREADERS.
4. SEDIMENT CONTROL FOR THIS SPECIFIC SITE PLAN WILL BE PROVIDED THROUGH THE USE A PROPOSED SILT FENCE PERIMETER CONTROLS. SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH CURRENT REQUIREMENTS AND SHALL BE APPROVED BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT DURING THE FUTURE SITE DEVELOPMENT PLAN PHASE OF THE PROJECT.
5. STORMWATER MANAGEMENT FOR THE PROJECT SHALL BE MET THROUGH THE USE OF NON ROOFTOP DISCONNECTION (N-2), MICRO BIO RETENTIONS (M-6), AND LEVEL SPREADERS. PROPOSED PRACTICES HAVE BEEN MAXIMIZED TO THE EXTENT PRACTICAL. THE CALCULATED RAINFALL TARGET (PE) FOR THIS PROJECT IS 1.0", THE TOTAL RUNOFF VOLUME (ESDv) REQUIRED IS 4,490 CF. AND THE TOTAL RUNOFF VOLUME (ESDv) PROVIDED IS 4,514 CF.
6. AT THIS CONCEPT STAGE OF DEVELOPMENT, NO DESIGN MANUAL WAIVERS ARE ANTICIPATED.

SITE ANALYSIS DATA CHART

A. TOTAL PROJECT AREA:	145.65 AC
B. AREA OF PLAN SUBMISSION:	20.45 AC (SEE CONDITIONAL USE PLAN)
C. AREA OF WETLANDS AND BUFFERS:	6,740.74 SF OR 0.15 AC. (WITHIN PROPERTY BOUNDARY)
D. AREA OF FLOODPLAIN:	0.00 SF OR 0.00 AC. (WITHIN PROPERTY BOUNDARY)
E. AREA OF 100' STREAM BUFFER:	80,509.35 SF OR 1.84 AC. (WITHIN PROPERTY BOUNDARY)
F. AREA OF FOREST:	706,653 SF OR 16.22 AC. (WITHIN PROPERTY BOUNDARY)
G. AREA OF STEEP SLOPES (25% & GREATER):	422,532 SF OR 9.7± AC. (WITHIN PROPERTY BOUNDARY)
H. ERODIBLE SOILS:	1,263,416.47 SF OR 29.00± AC. (WITHIN PROPERTY BOUNDARY)
I. LIMIT OF DISTURBED AREA:	818,928.00 SF OR 18.80± AC.
J. PROPOSED USES FOR SITE AND STRUCTURES:	SOLAR PANEL FARM
K. GREEN OPEN AREA:	842,529.45± SF OR 19.34± AC. (WITHIN LOD)
L. PROPOSED IMPERVIOUS AREA:	14,221± SF OR 0.33± AC. (WITHIN LOD)
M. PRESENT ZONING DESIGNATION:	RC-DEO
N. OPEN SPACE REQUIRED:	N/A
O. DPZ FILE REFERENCES:	SDP-03-089, BA-19-008C

NOTE:

THIS ECP INCORPORATES THE LIMIT OF DISTURBANCE FOR THE SOLAR PROJECT. THE AREAS OUTSIDE THE LIMIT OF DISTURBANCE ARE NOT INCLUDED IN THE ECP.

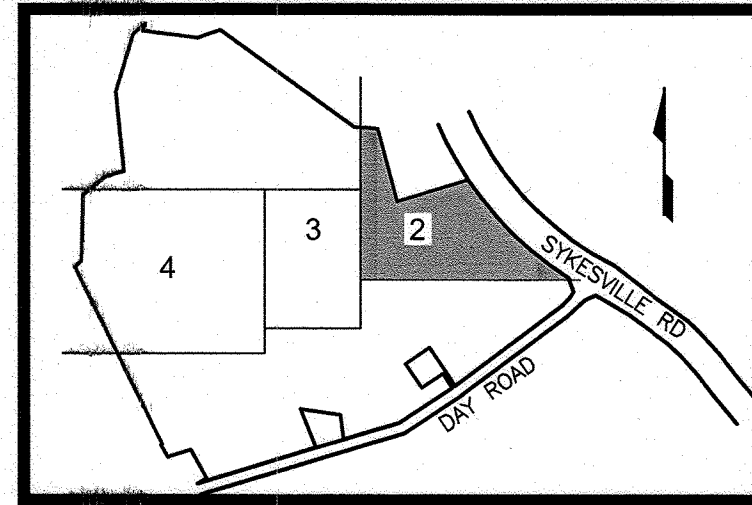
SPECIMEN TREE CHART

KEY	DESCRIPTION	SIZE	CONDITION	COMMENTS
ST.1	SILVER MAPLE	67.5'	POOR	TO REMAIN

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

12/18/20
DATE

12/14/20
DATE

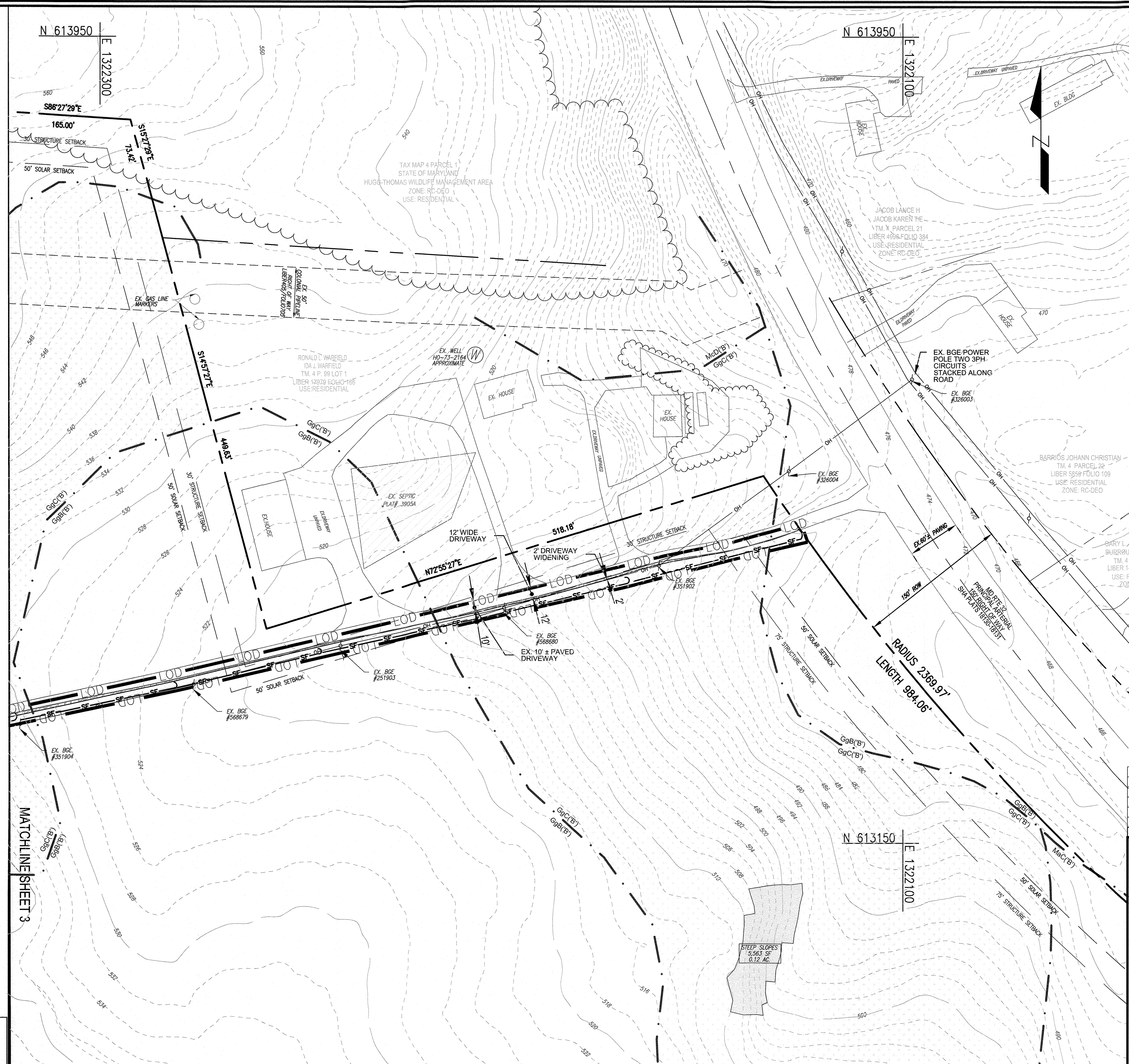
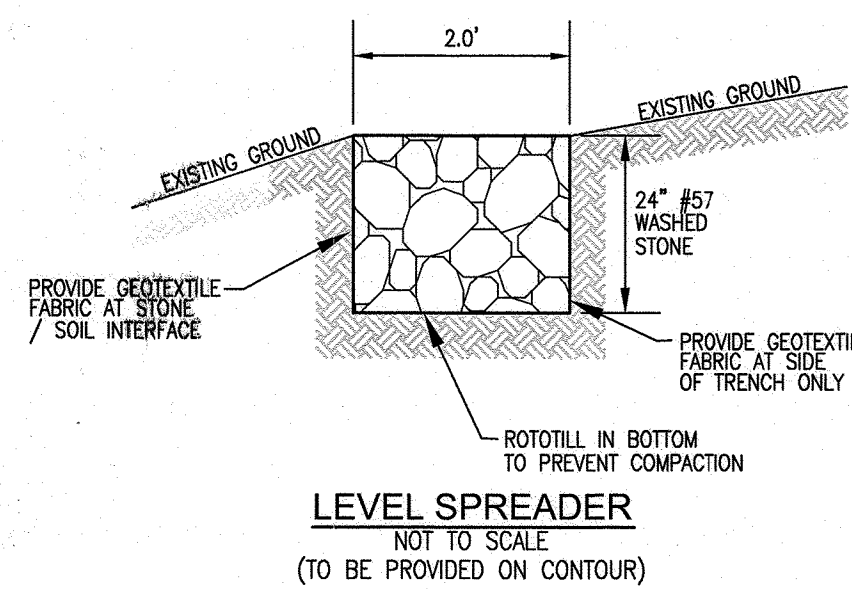


KEY MAP
NOT TO SCALE

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.

- 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 LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE 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.

- 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 SITE DEVELOPMENT 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. NO MASS GRADING PROPOSED WITHIN PROJECT BOUNDARY.



LEGEND:

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- RIGHT OF WAY LINE
- PROJECT SETBACK
- MAJOR CONTOUR (10')
- MINOR CONTOUR (2')
- SOILS BOUNDARY
- EXISTING TREELINE
- OVERHEAD LINE
- EXISTING UTILITY POLE
- LIMIT OF DISTURBED AREA
- EXISTING 50' COLONIAL PIPELINE ROW
- PROPOSED DRIVEWAY WIDENING
- SILT FENCE
- STEEP SLOPE (>25%)
- ERODIBLE SOILS

SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	Kw-FACTOR	ERODIBLE	HYDROIC
GgB	GLENELG LOAM, 3 TO 8 PERCENT SLOPES	B	0.37	YES	NO
GgC	GLENELG LOAM, 8 TO 15 PERCENT SLOPES	B	0.43	YES	NO
GmA	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES	C	0.49	NO	YES
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	0.55	YES	YES
GmC	GLENVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES	C	0.49	YES	NO
GmD	GLENVILLE-SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	0.49	YES	YES
MdC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	0.32	NO	NO
MdD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.32	YES	NO
MkF	MANOR BRINKLOW COMPLEX, 25 TO 65 PERCENT SLOPES, VERY ROCKY	B	0.32	YES	NO

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

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C/O RONALD L. WARFIELD
700 ROUTE 32
SYKESVILLE, MD 21784

NO.	REVISION	DATE

**ENVIRONMENTAL CONCEPT PLAN
LAYOUT, SOILS MAP, GRADING, EROSION AND
SEDIMENT CONTROL PLAN**

METALMARK SOLAR
700 SYKESVILLE RD
SYKESVILLE, MD 21784

TAX MAP 9 BLOCK 3
3RD ELECTION DISTRICT

ZONED RC-DEO
PARCEL 94
HOWARD COUNTY, MARYLAND

VOGEL ENGINEERING

TIMMONS GROUP

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P: 410.461.7666 F: 410.461.8961 www.timmons.com

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. EXPIRATION DATE: 09-27-2022

DESIGN BY: RHY
DRAWN BY: KG
CHECKED BY: RHY
DATE: NOVEMBER 2020
SCALE: AS SHOWN
W.O. NO.: 41993

ROBERT H. VOGEL, PE No. 16193

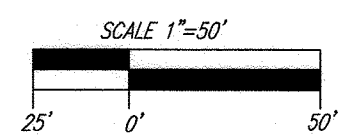
2 SHEET OF 6

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *KJR* 12/15/20 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT *W* 12/11/20 DATE

LAYOUT, SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=50'



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

Material	Specifications	Size	Notes
Planting	See Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2" to 4" deep)	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration terms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" TO 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDN35	Slotted or perforated pipe, 3/8" perf. @ 6" on center, 4 holes per row; minimum of 2" of gravel over pipe; not necessary underdrain pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Min No. 3; f' = 3500 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-615-04	n/a	swirl testing of poured-in-place concrete required; 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland design to include meeting ACI Code 350R.09; vertical loading (14-10 or 14-20), allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Gneiss (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

DESIGN CRITERIA FOR BASIC ACCESS ROADS UG 501-17

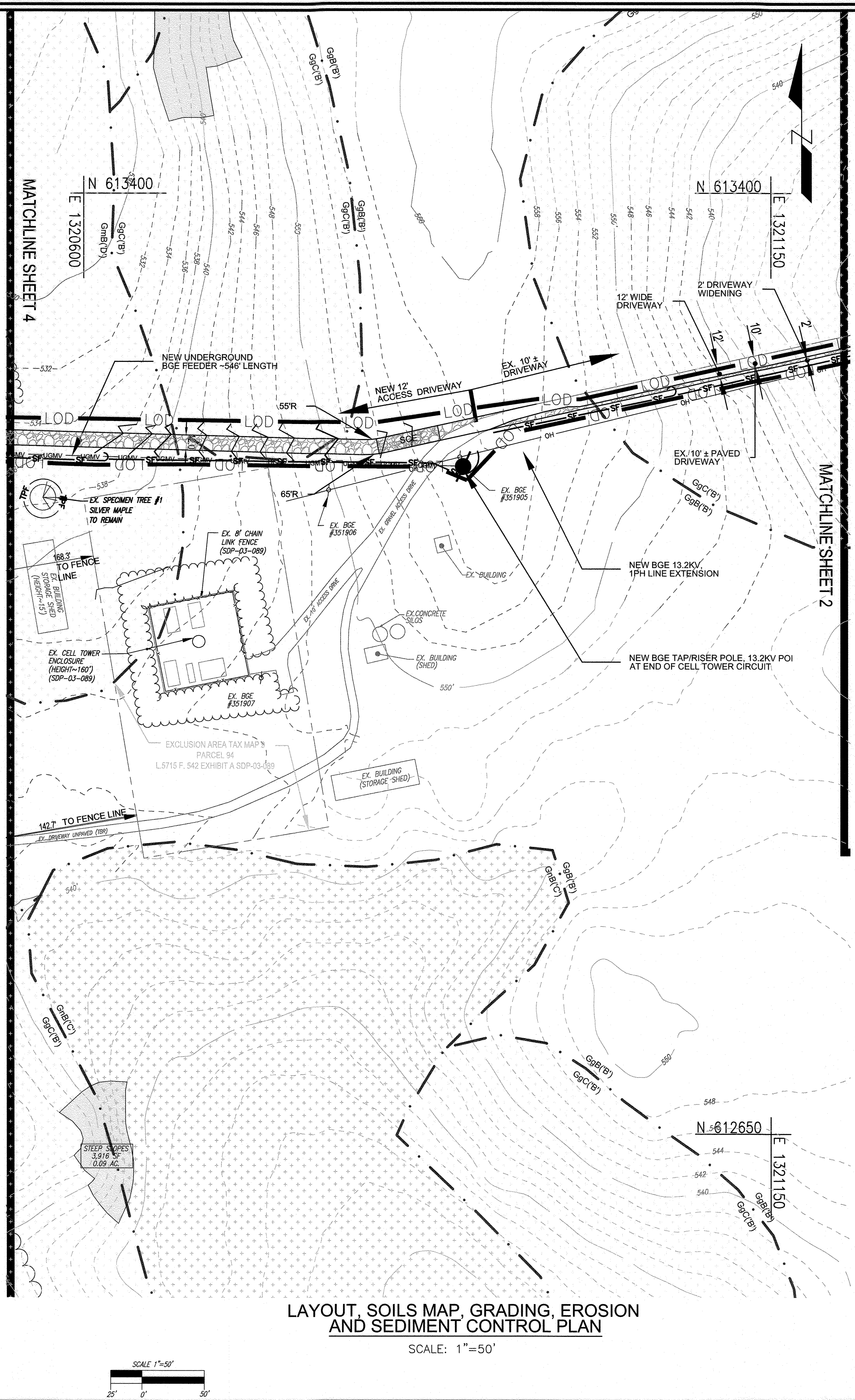
An access road is defined to be a stone-base road with entry off of a paved street or highway. It is used to permit construction and maintenance vehicles access to an isolated location of pad-mounted equipment.

The following guidelines should be used to design such a road.

1. An access road shall be constructed to H-20 highway loading with a maximum of 8% grade. Wherever possible, the access road should be straight without curves, and be a minimum of 12' wide. The location and plans for the access road must be approved by BGE prior to construction.
2. The access road shall extend a minimum of 20' from the public highway to the pad-mounted equipment, unless separated by guardrails or Jersey walls. This distance allows sufficient length for the vehicle operator to park away from the flow of traffic off the public highway.
3. At the location of the pad-mounted equipment, the roadway shall widen to allow construction and maintenance trucks an area to turn around when exiting the site. This widened area shall be a minimum of 20' x 20'.
4. The roadway shall be excavated to a minimum depth of 12" and constructed of two layers of stone. Before the first layer is installed, the bottom and sides of the excavated roadway shall be lined with non-woven filter cloth.
5. The base layer shall be a minimum of 8" of #2 stone. The top layer shall be a minimum of 4" of CR6 stone. The top layer of the roadway shall be at "grade." These minimum depths may have to be increased depending on the existing soil conditions to obtain the H-20 highway loading.
6. Curbs and gutters are not required.
7. Guard rolls should be installed when the slope of the road is steeper than a 3:1 ratio.
8. If the access road is gated, BGE must have Independent 24-hour admittance, i.e. double locks.

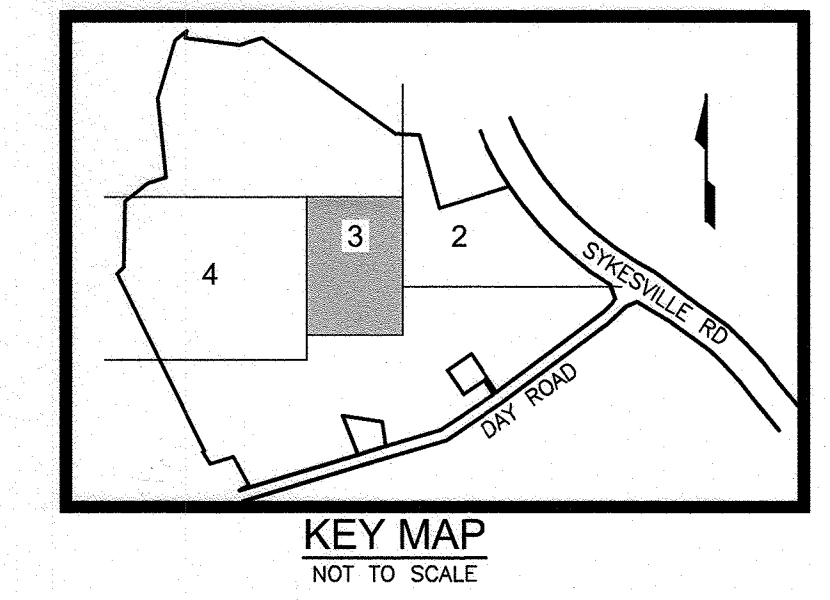
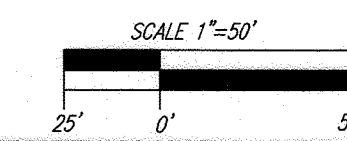
Typical Cross-Section

BGE UNDERGROUND CONSTRUCTION STANDARDS LATEST REVISION: NEW STANDARD
APP. DATE: 12/21/10 APPROVAL: *Cm*



LAYOUT, SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN

SCALE: 1"=50'



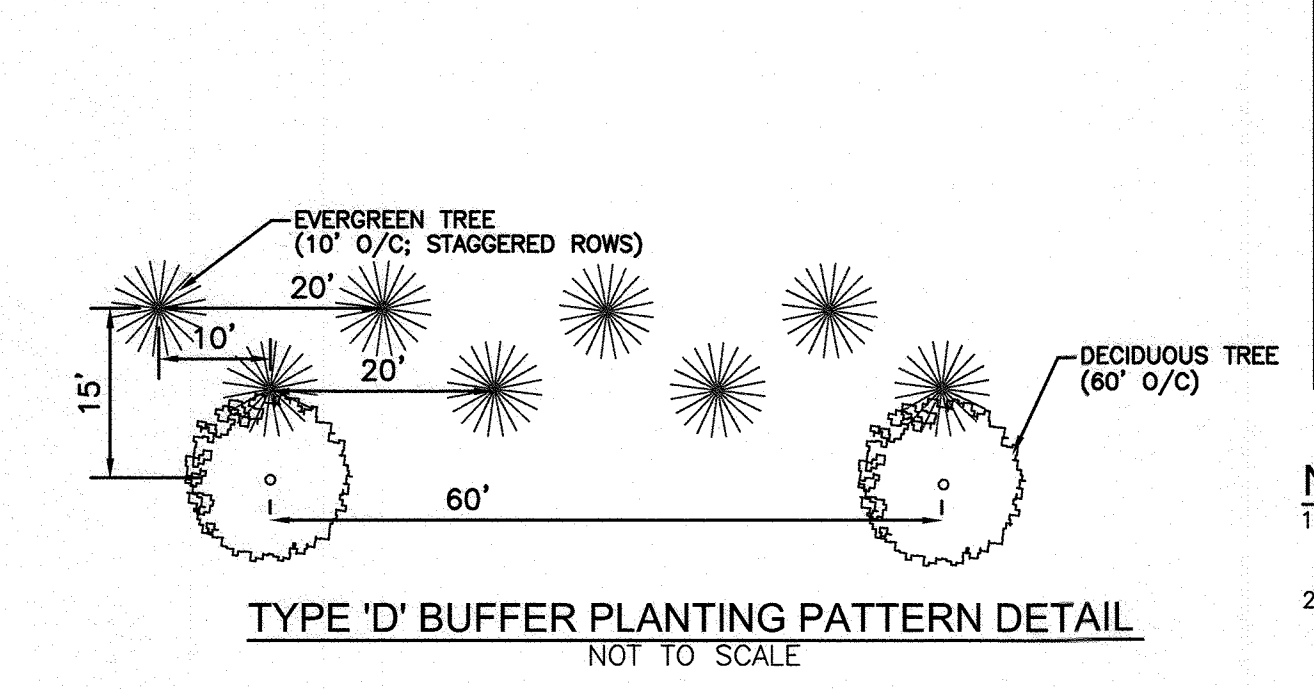
SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	K _f -FACTOR	ERODIBLE	HYDRIC
GgB	GLENELO LOAM, 3 TO 8 PERCENT SLOPES	B	0.37	YES	NO
GgC	GLENELO LOAM, 8 TO 15 PERCENT SLOPES	B	0.43	YES	NO
GmA	GLENEVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES	C	0.49	NO	YES
GmB	GLENEVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	0.55	YES	YES
GmC	GLENEVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES	C	0.49	YES	YES
GmD	GLENEVILLE-PALE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	0.49	YES	YES
MgC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	0.32	NO	NO
MgD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.32	YES	NO
MkF	MANOR BRINKLOW COMPLEX, 25 TO 65 PERCENT SLOPES, VERY ROCKY	B	0.32	YES	NO

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LEGEND:

- PROPERTY LINE
- MAJOR CONTOUR (10')
- MINOR CONTOUR (2')
- SOILS BOUNDARY
- EXISTING TREELINE
- OVERHEAD LINE
- EXISTING UTILITY POLE
- UGM-V UGM-V
- EXISTING UNDERGROUND BGE FEEDER
- LOD
- LIMIT OF DISTURBED AREA
- PROPOSED DRIVEWAY WIDENING
- SPECIMEN TREES
- SF
- SILT FENCE
- ERODIBLE SOILS
- STABILIZED CONSTRUCTION ENTRANCE
- STEEP SLOPE (>25%)



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.

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 LAND DEVELOPMENT REGULATIONS SHALL OCCUR AT THE 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.

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 SITE DEVELOPMENT 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. NO MASS GRADING PROPOSED WITHIN PROJECT BOUNDARY.

DEVELOPER
ONEENERGY DEVELOPMENT, LLC
2003 WESTERN AVENUE
SUITE 225
SEATTLE, WA 98121
PHONE: 206-922-7072
ATTENTION: KATE LARKIN

OWNER
SAMUEL L. WARFIELD TRUSTEE
C/O RONALD L. WARFIELD
700 ROUTE 32
SKYESVILLE, MD 21784

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
LAYOUT, SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN
METALMARK SOLAR
700 SYKESVILLE RD
SYKESVILLE, MD 21784

TAX MAP 9 BLOCK 3
3RD ELECTION DISTRICT

ZONED RC-DEO
PARCEL 94
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

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. EXPIRATION DATE: 09-27-2022

DESIGN BY: RHV
DRAWN BY: KG
CHECKED BY: RHV
DATE: NOVEMBER 2020
SCALE: AS SHOWN
W.O. NO.: 41993

ROBERT H. VOGEL, PE No. 16193

3 SHEET OF 6

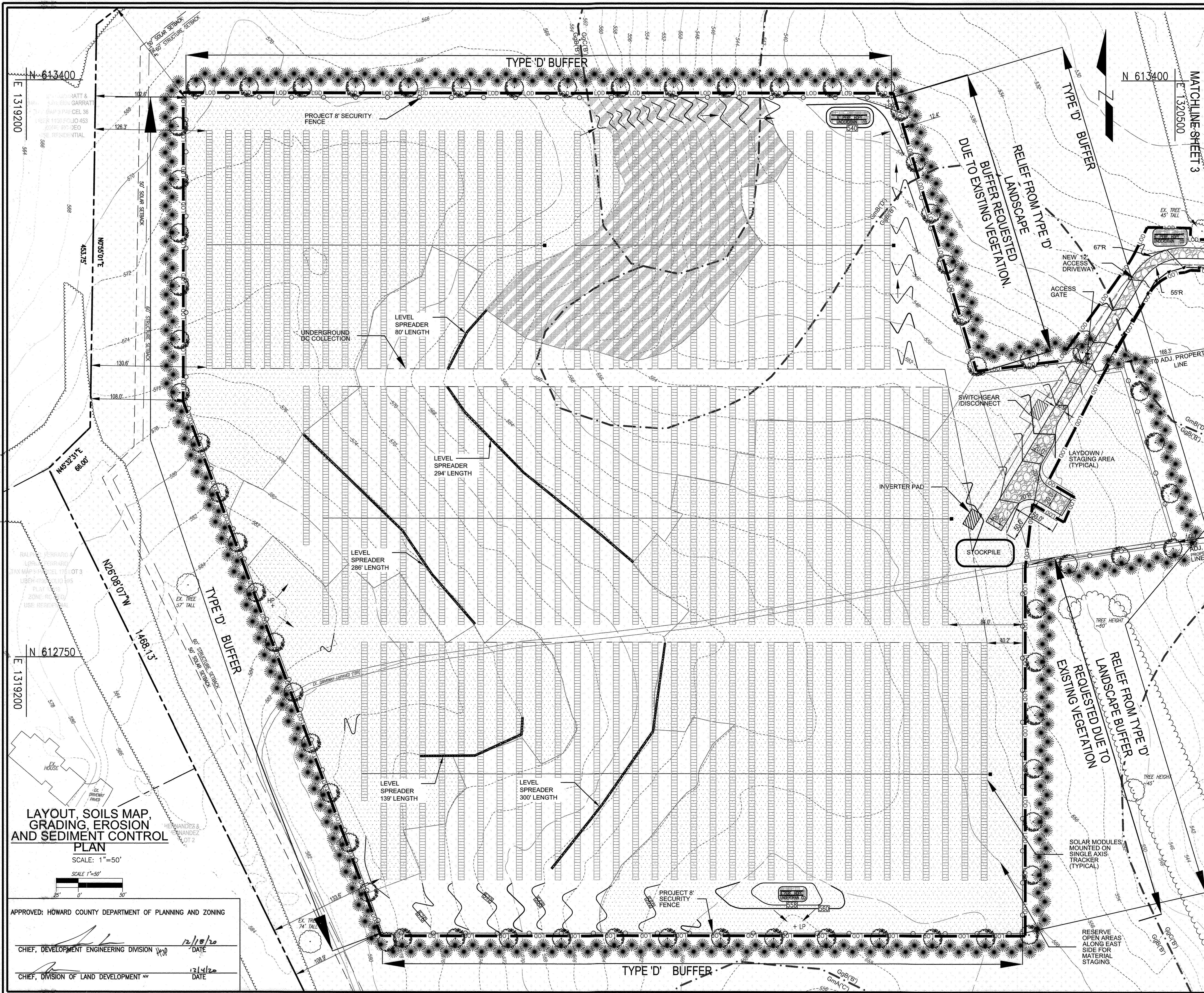
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

12/15/20
DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

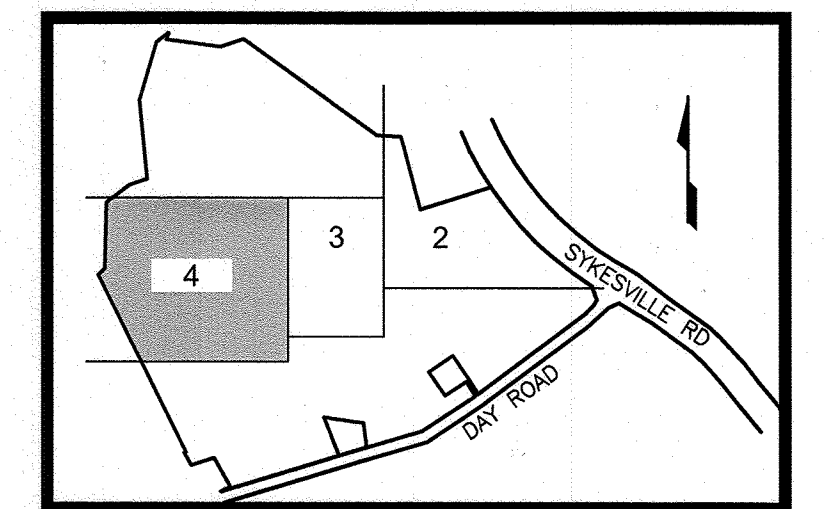
12/14/20
DATE

CHIEF, DIVISION OF LAND DEVELOPMENT



LEGEND:

- PROPERTY LINE
- PROJECT SETBACK
- MAJOR CONTOUR (10')
- MINOR CONTOUR (2')
- SOILS BOUNDARY
- EXISTING TREELINE
- UGMV
- UNDERGROUND DGE FEEDER
- UNDERGROUND DC COLLECTION
- 8" SECURITY FENCE
- SILT FENCE
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- PROPOSED LANDSCAPING
- EXISTING TREES
- LIMIT OF DISTURBED AREA
- EXISTING SLOPES <5%
- EXISTING SLOPES 5%-10%
- EXISTING SLOPES >10%
- ERODIBLE SOILS



NOTE:

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- SILT FENCE SHALL BE CURLED UPHILL NO MORE THAN 35 FEET APART.
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SOILS LEGEND

SYMBOL	NAME / DESCRIPTION	GROUP	Kv-FACTOR	ERODIBLE	HYDRIC
GgB	GLENLEIGH LOAM, 3 TO 8 PERCENT SLOPES	B	0.37	YES	NO
GgC	GLENLEIGH LOAM, 8 TO 15 PERCENT SLOPES	B	0.43	YES	NO
GmA	GLENVILLE SILT LOAM, 0 TO 3 PERCENT SLOPES	C	0.49	NO	YES
GmB	GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES	C	0.55	YES	YES
GmC	GLENVILLE SILT LOAM, 8 TO 15 PERCENT SLOPES	C	0.49	YES	NO
GnB	GLENVILLE-BAILE SILT LOAMS, 0 TO 8 PERCENT SLOPES	C	0.49	YES	YES
McC	MANOR LOAM, 8 TO 15 PERCENT SLOPES	B	0.32	NO	NO
McD	MANOR LOAM, 15 TO 25 PERCENT SLOPES	B	0.32	YES	NO
MmF	MANOR BRINKLOW COMPLEX, 25 TO 85 PERCENT SLOPES, VERY ROCKY	B	0.32	YES	NO

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

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PROFESSIONAL CERTIFICATE

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DRAWN BY: KG
CHECKED BY: RHV
DATE: NOVEMBER 2020
SCALE: AS SHOWN
W.O. NO.: 41993

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16193 EXPIRATION DATE: 08-27-2022

ROBERT H. VOGEL, PE No.16193

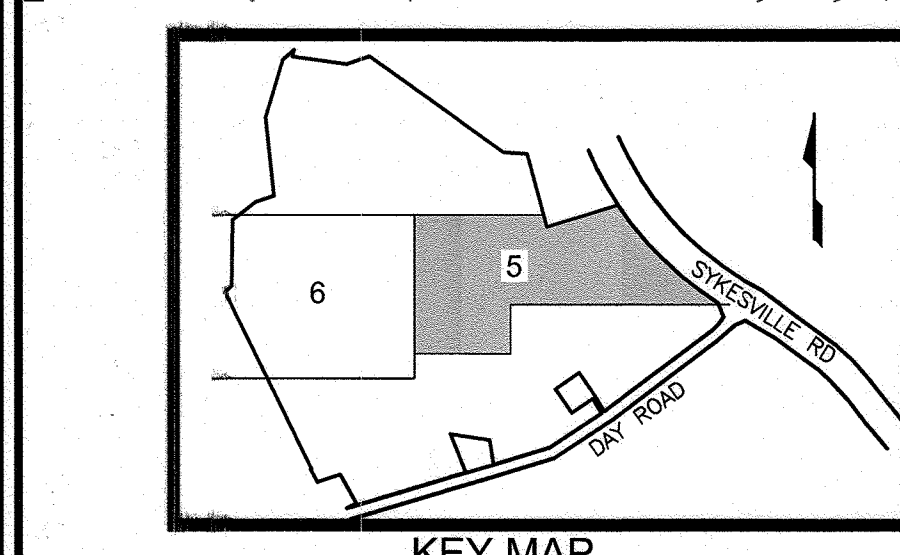
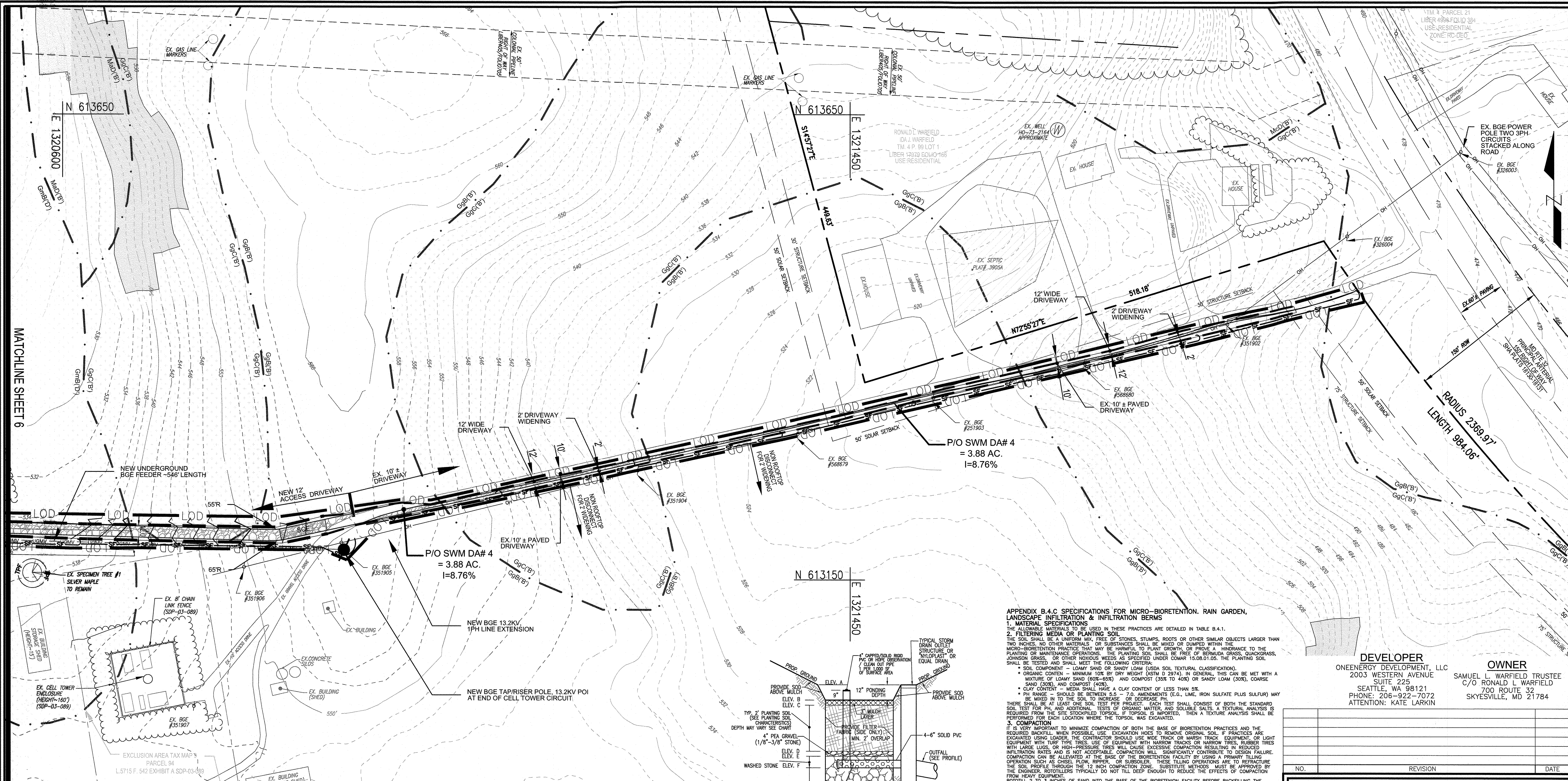
4 SHEET OF 6

LAYOUT, SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=50'
SCALE 1"=50'

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 12/10/20 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 12/14/20 DATE



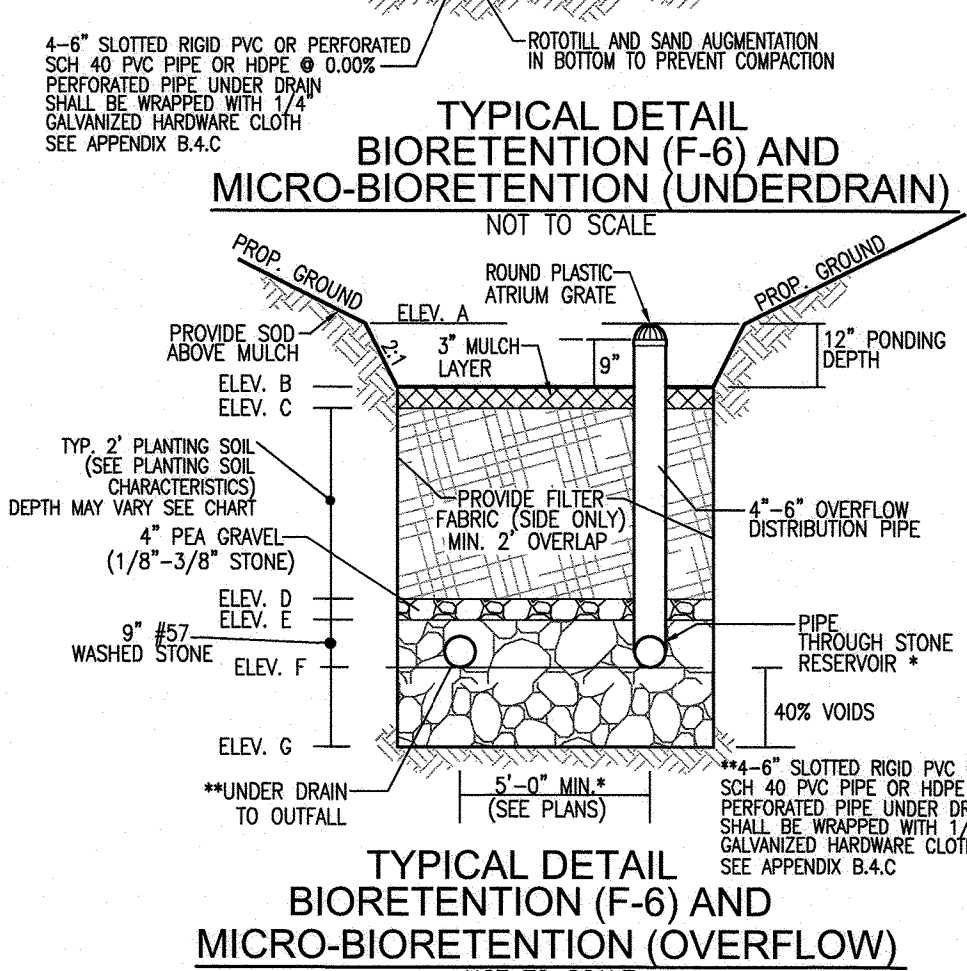
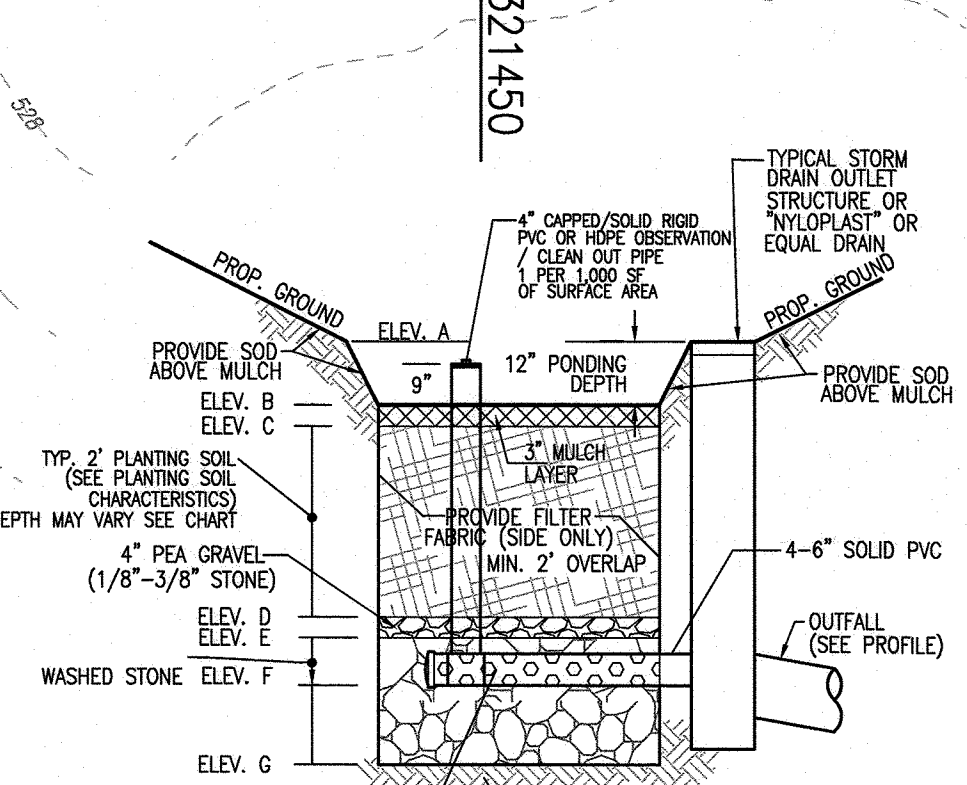
LEGEND:

	PROPERTY LINE
	MAJOR CONTOUR (10')
	MINOR CONTOUR (2')
	SOILS BOUNDARY
	EXISTING TREELINE
	OVERHEAD LINE
	UNDERGROUND BGE FEEDER
	LIMIT OF DISTURBED AREA
	PROPOSED ROAD WIDENING
	SPECIMEN TREES
	UNDERDRAIN
	ERODIBLE SOILS
	TREE PROTECTION FENCE

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

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

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



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

1. MATERIAL SPECIFICATIONS
 - THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.
 - 2. FILTERING MEDIA OR PLANTING SOIL
 - THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR QUINDED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDERANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
 - SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).
 - ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-85%) AND COMPOST (30% TO 40% OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
 - CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
 - PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G. LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.
2. THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILE TOPSOIL. TOPSOIL IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.
3. COMPACTION
 - IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE USE EXCAVATION TOOLS TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT OR LIGHT EQUIPMENT WITH TIRE TREADS. USE OF EQUIPMENT WITH NARROW TRACKS OR MARISS TRACKS, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE. COMPACTION CAN BE AVOIDED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACURE THE SOIL PROFILE THROUGH THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.
 - ROTTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY POINDED WATER BEFORE PREPARING (ROTTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LITS 12\"/>
4. PLANT MATERIAL
 - RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.
 - 5. PLANT INSTALLATION
 - COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2\"/>
6. UNDERDRAINS
 - UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 - PIPE - SHOULD BE 4\"/>
7. MISCELLANEOUS
 - THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

DEVELOPER
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700 ROUTE 2
SKYESVILLE, MD 21784

NO.	REVISION	DATE

ENVIRONMENTAL CONCEPT PLAN
STORMWATER MANAGEMENT DRAINAGE AREA MAP
METALMARK SOLAR
700 SYKESVILLE RD
SYKESVILLE, MD 21784

TAX MAP 9 BLOCK 3
3RD ELECTION DISTRICT

ZONED RC-DEO
PARCEL 94
HOWARD COUNTY, MARYLAND

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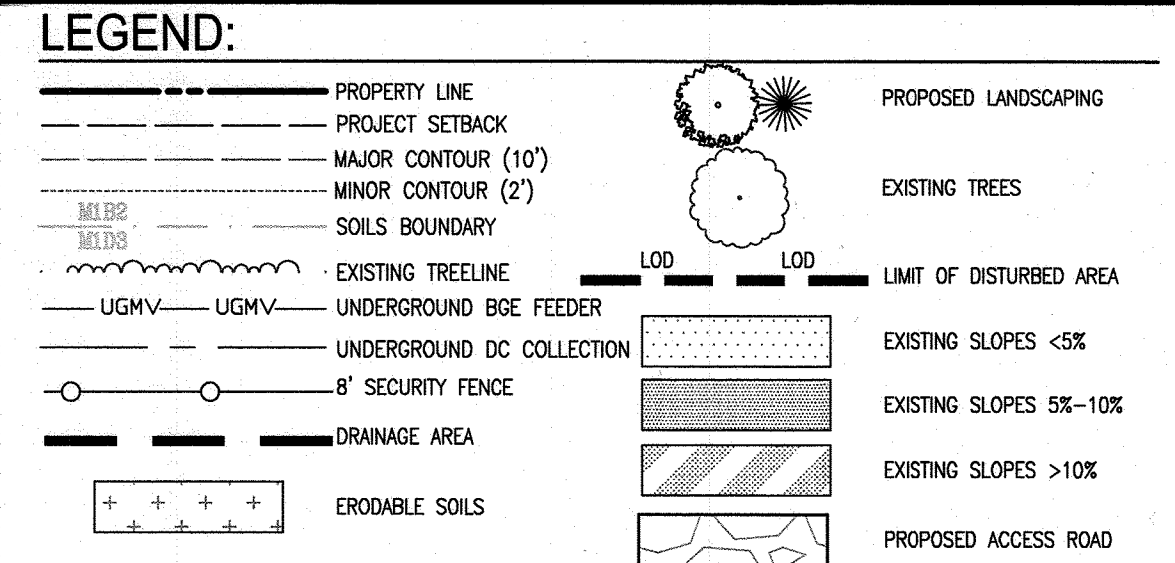
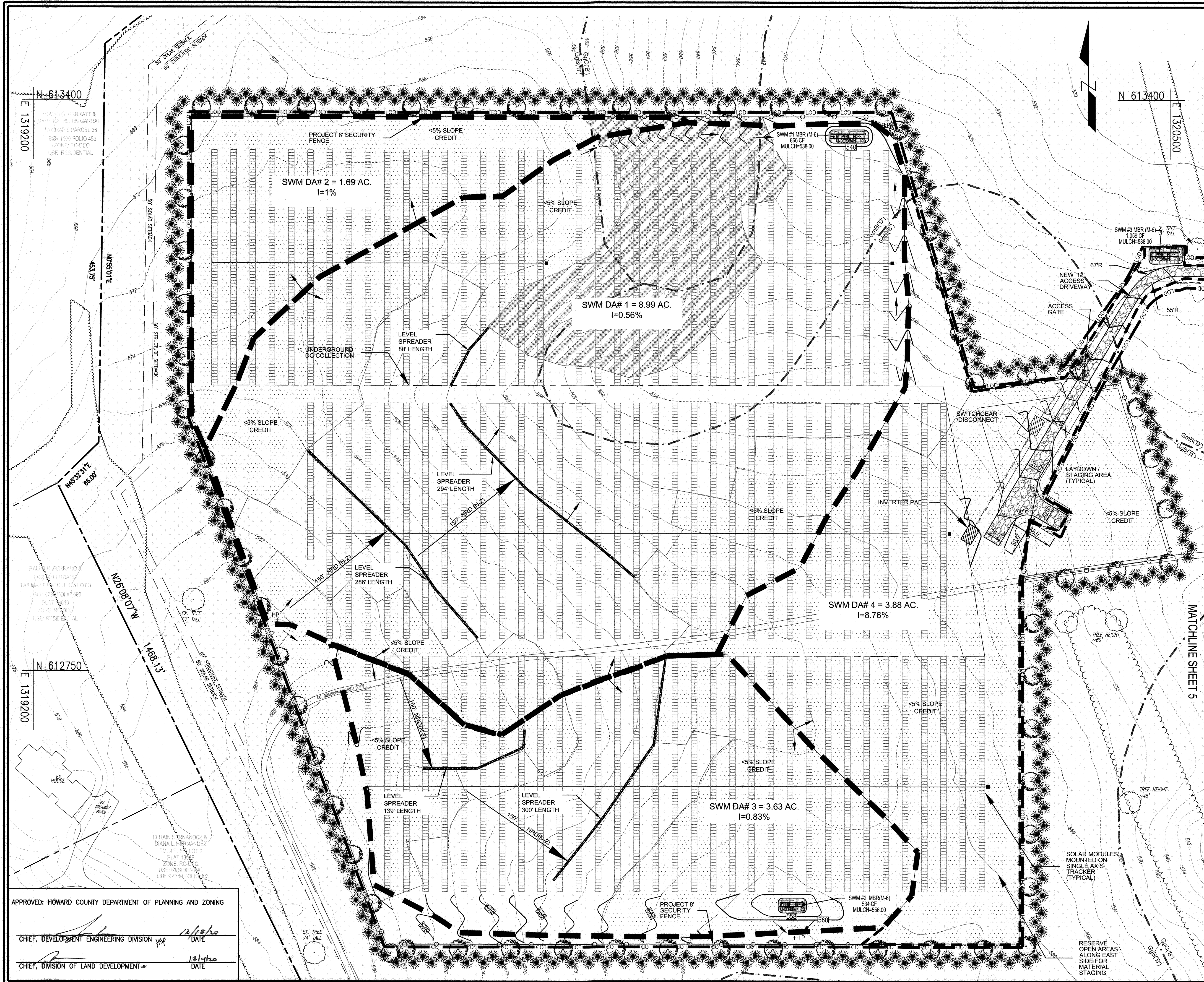
PROFESSIONAL CERTIFICATE
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. MY LICENSE NO. IS 10193 AND MY EXPIRATION DATE IS 09-27-2022.

ROBERT H. VOGEL, PE No.16193

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION *[Signature]* 12/10/20 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT *[Signature]* 12/11/20 DATE



N-2. DISCONNECTION OF NON ROOFTOP RUNOFF

CONSTRUCTION CRITERIA:

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING THE CONSTRUCTION OF PROJECTS WITH PLANNED ROOFTOP DISCONNECTIONS:

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

INSPECTION:

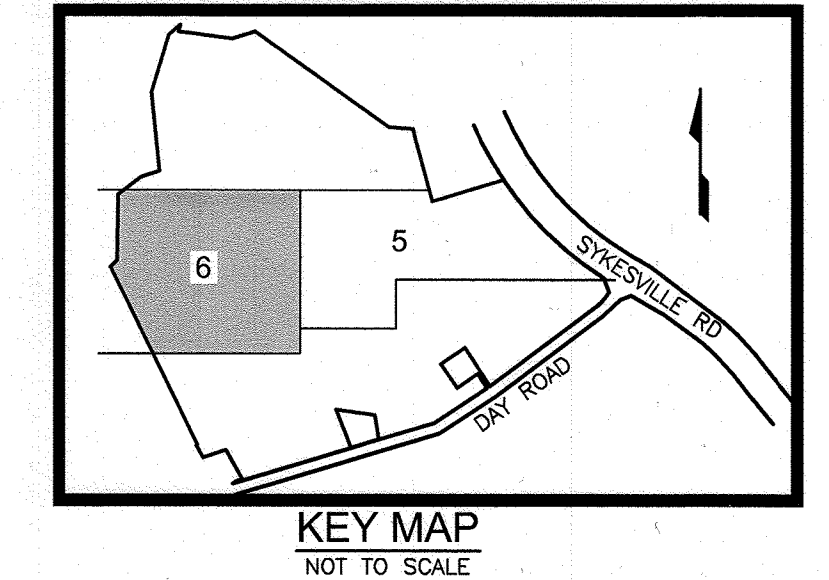
A FINAL INSPECTION SHALL BE CONDUCTED BEFORE USE AND OCCUPANCY APPROVAL TO ENSURE THAT SIZING FOR TREATMENT AREAS HAVE BEEN MET AND PERMANENT STABILIZATION HAS BEEN ESTABLISHED.

MAINTENANCE CRITERIA:

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

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

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



SCALE 1"=50'

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

DEVELOPER: ONEENERGY DEVELOPMENT, LLC
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STATE OF MARYLAND REGISTERED PROFESSIONAL ENGINEER ROBERT H. VOGEL, PE No.16193

6 SHEET OF 6

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 12/10/20 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 12/14/20 DATE