BENCHMARKS GENERAL NOTES SITE DEVELOPMENT PLAN 1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY HOWARD COUNTY BENCHMARK 09BM1 ALL WORK AND MATERIALS SHALL COMPLY WITH O.S.H.A. STANDARDS METAL MARK SOLAR N 600,761.020 E 1,332,632.438 ELEV. 459.104 THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK, THE CONTRACTOR IS TO NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE DAYS BEFORE STARTING HOWARD COUNTY BENCHMARK 09AB 1-800-252-1133 BGE (CONSTRUCTION SERVICES) 410-637-8713 N 612,167.152 E 1,316,859.812 ELEV. 606.406 410-685-0123 410-313-4900 BGE (EMERGENCY) 700 SYKESVILLE ROAD 410-795-1390 1-800-257-777 COLONIAL PIPELINE CO MISS UTILITY HOWARD COUNTY, MARYLAND STATE HIGHWAY ADMINISTRATION 410-531-5533 VERIZON 1-800-743-0033 SITE ANALYSIS: TOTAL PARCEL AREA: 144.69 AC. PRESENT ZONING: RC-DEO USE OF STRUCTURE: SOLAR PANEL FARM TOTAL COVERAGE: 14,511 SF (0.33 AC. OR 1.91% OF GROSS AREA) PAVED PARKING LOT/AREA ON SITE: 0 SF (0 AC. OR 0.00% OF GROSS AREA) ABILIO L. MACHADO & N 615000 AREA OF LANDSCAPE ISLAND: 0 SF (0 AC. OR 0.00% OF GROSS AREA) ISABEL A. MACHADO AREA OF WETLAND AND BUFFERS: 6,741 SF OR 0.15 AC. AREA OF STREAM AND BUFFERS: 80,509 SF OR 1.84 AC. TAX MAP 4 PARCEL 65 AREA OF EXISTING FOREST: 706.653 SF OR 16.22 AC. LIBER 15680 FOLIO 414 COORDINATE AREA OF NRCS/MDE/HSCD STEEP SLOPES (20% OR GREATER): 0.00 AC ZONE: RC-DEO AREA OF STEEP SLOPES (25% OR GREATER): 422,532 SF OR 9.7 AC. **TABLE** AREA OF ERODIBLE SOILS: 1,263,416 OR 29.00 AC. AREA OF FLOODPLAIN: 0.00 AC. LIMIT OF DISTURBED AREA: 17.43 AC. CUT: 1,186 CY FILL: 182 CY PROJECT BACKGROUND: LOCATION: SYKESVILLE, MD.; TAX MAP 9, BLOCK 3, PARCEL 94 ZONING: RC-DEO SUBDIVISION: N/A ADC MAP COORDINATES: PAGE 11 / GRID A-B 3 & A-B 4 SECTION/AREA: N/A SITE AREA: 17.43 AC DPZ REFERENCES: SDP-03-089, BA-19-008C, ECP-20-036 THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT ELIZABETH TAYLOR (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO START OF WORK. TAX MAP 4 PARCEL 67 LOT ANY DAMAGE TO PUBLIC RIGHT-OF-WAY, PAVING, OR EXISTING UTILITIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. TAX MAP 4 PARCEL 1 LIBER 18286 FOLIO 5 THE SUBJECT PROPERTY IS ZONED "RR-DEO" IN ACCORDANCE WITH THE 10/6/13 ZONING REGULATIONS, AND IS SUBJECT TO THE STATE OF MARYLAND HUGG-THOMAS SUBDIVISION AND LAND DEVELOPMENT REGULATIONS EFFECTIVE 10/2/03 PER COUNCIL BILL 75-2003. THE PROJECT BOUNDARY SHOWN HEREON IS BASED ON THE SURVEY PERFORMED BY VOGEL ENGINEERING+TIMMONS GROUP ON ZONE: RC-DEO WILDLIFE MANAGEMENT AREA USE: RESIDENTIAL ZONE: RC-DEO 10. THE EXISTING TOPOGRAPHY SHOWN HEREON IS BASED ON A TOPOGRAPHIC SURVEY PREPARED BY VOGEL ENGINEERING+TIMMONS GROUP DATED SEPTEMBER 2019. OFFSITE TOPOGRAPHY FROM HOWARD COUNTY GIS. 11. 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. 09AB AND 09BM1 WERE USED FOR THIS PROJECT. WILLIAM C. BARKER, ET UI LEGEND: TAX MAP 4 PARCÉI 12. STORMWATER MANAGEMENT FOR THE PROJECT IS PROVIDED BY THE USE OF NON-STRUCTURAL PRACTICES AND MICRO-SCALE LIBER 636 FOLIO 221 PRACTICES IN ACCORDANCE WITH ENVIRONMENTAL SITE DESIGN CRITERIA. NON-STRUCTURAL PRACTICES INCLUDE NON-ROOFTOP PROPERTY LINE ZONE: RG-DEO DISCONNECTION (N-2). MICRO-SCALE PRACTICES INCLUDE MICRO-BIORETENTION (M-6). THESE FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED. USE: RESIDENTIAL RIGHT-OF-WAY LINE 13. EXISTING UTILITIES LOCATED FROM ROAD CONSTRUCTION PLANS AND AVAILABLE RECORD DRAWINGS. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FOR THE CONTRACTORS INFORMATION. CONTRACTOR SHALL LOCATE EXISTING UTILITIES WELL IN ADVANCE OF CONSTRUCTION ACTIVITIES AND TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ADJACENT PROPERTY LIN 14. THERE ARE EXISTING DWELLINGS/STRUCTURES LOCATED ON THIS SITE. 15. DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY EXISTING PAVING WIDTH - 12 FEET (16 FEET IF SERVING MORE THAN ONE RESIDENCE) SURFACE - 6" OF COMPACTED CRUSHER RUN BASE W/TAR AND CHIP COATING (1-1/2" MIN.) GEOMETRY - MAXIMUM 15% GRADE, MAXIMUM 10% GRADE CHANGE, AND MINIMUM 45 FOOT TURNING RADIUS STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING) TM. 4.P. 99 LOFV ZONE: RC-DE DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100 YEAR FLOOD EVENTS WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE USE: RESIDEN F) MAINTENANCE — SUFFICIENT TO ENSURE ALL WEATHER USE 14. ALL DRIVEWAY ENTRANCES SHALL UTILIZE HOWARD COUNTY STANDARD DETAIL NO. R—6.06. 15. SYKESVILLE ROAD (MD ROUTE 32) IS CLASSIFIED AS AN INTERMEDIATE ARTERIAL ROAD AND DAY ROAD IS A LOCAL ROAD. NEITHER IS CONSIDERED 16. 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. 17. THIS PROPERTY IS NOT WITHIN THE METROPOLITAN DISTRICT METAL MARK SOLAR SITE SAMUEL L. WARFIELD, 18. WATER FOR THIS PROJECT IS PRIVATE. 19. SEWER FOR THIS PROJECT IS PRIVATE. THE HEALTH DEPARTMENT HAS NOT APPROVED THIS PROPERTY FOR WASTEWATER DISCHARGE. 20. TO THE BEST OF THE OWNERS KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS PROPERTY OR THE COUNTY'S 144,69 +/- ACRES HOWARD COUNTY AGRICULTURAL LAND 21. WETLANDS AND STREAMS SHOWN ONSITE ARE BASED ON ENVIRONMENTAL REPORT BY ECO-SCIENCE PROFESSIONALS, INC. C/O MR. JOHN CANOLES, DATED AUGUST 23, 2019. 22. THE REQUIRED FOREST CONSERVATION OBLIGATION PER SECTION 3.2.5 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL OF 3.0 ACRES PRESERVATION PROGRAM EASEMENT HO-85-04-E SHALL MEET THE INTENT OF SECTION 16.117 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. FOREST CONSERVATION REQUIREMENTS ARE BASED ON COUNCIL BILL CB62-2019. THE REQUIRED FOREST CONSERVATION WILL BE PROVIDED BY A PURCHASE IN AN SHEET INDEX OFFSITE FOREST BANK. THE FOREST BANK MUST BE COMPLETED PRIOR TO SIGNATURE OF THE SITE DEVELOPMENT PLAN. TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY; DESCRIPTION TAX MAP 9 PARCEL 94 THE PURCHASE OF 2.5 ACRES OF AFFORESTATION CREDIT IN THE MILLERS MILL FOREST BANK; SDP-18-052. THE PURCHASE OF 1.0 ACERS (1.0 / 2 = 0.5) OF RETENTION CREDIT IN THE MILLERS MILL FOREST BANK; SDP-18-052. L 5715 F. 542 EXHIBIT A COVER SHEET **RADIUS 309.71** 23. A TRAFFIC STUDY IS NOT REQUIRED. THE PROPOSED SOLAR FACILITY WILL GENERATE ONE TO TWO TRIPS PER MONTH FOR MAINTENANCE. 24. A NOISE STUDY IS NOT REQUIRED. THE PROPOSED PROJECT IS NOT FOR RESIDENTIAL USE. LAYOUT PLAN 25. CERTIFIED TEST PITS HAVE BEEN PROVIDED TO VERIFY THE LOCATIONS OF THE GROUNDWATER AND/OR ROCK. OPEN TEST PITS WERE OBSERVED SITE DETAILS BY VOGEL ENGINEERING + TIMMONS GROUP, INC., NOVEMBER 12, 2020. 26. THE PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON JUNE 25, 2019 AT THE FRIENDSHIP BAPTIST CHURCH. SOILS MAP, GRADING, EROSION AND SEDIMENT CONTROL PLAN 27. THE ENVIRONMENTAL CONCEPT PLAN (ECP-20-036) WAS APPROVED PER LETTER DATED OCTOBER 30, 2020. 28. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. CHARLES D. & KIMBERLY WARFIELD-GRADING, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS TAX MAP 9 PARCEL 94 A FINANCIAL SURETY IN THE AMOUNT OF \$66,000 SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT: LOT 2 LIBER 6097 FOLIO 543 STORMWATER MANAGEMENT DRAINAGE AREA MAP -PERIMETER PLANTINGS IN THE AMOUNT OF \$16,500 FOR THE REQUIRED 55 SHADE TREES, AND \$49,500 FOR THE REQUIRED 330 EVERGREEN TREES. IE PROPOSED SUBDIVISION AND RELATED CONSTRUCTION WILL NOT IMPACT ENVIRONMENTAL FEATURES OR BUFFERS. STORMWATER MANAGEMENT NOTES AND DETAILS O. SOIL TYPES SHOWN HEREON ARE IN ACCORDANCE WITH THE USDA NRCS WEB SOIL SURVEY. 1. FLOODPLAINS ARE NOT LOCATED ONSITE. 2. STEEP SLOPES OVER 20,000 SF CONTIGUOUS ARE SHOWN HEREON. USE: RESIDENTIAL STORM DRAIN DRAINAGE AREA MAP 33. A KNOX LOCK SHALL BE LOCATED AT THE MAIN ENTRANCE. 34. ALL GATES SHALL NOT BE LOCATED CLOSER THAN 30 FT FROM AN INTERSECTION AND SHALL OPEN IN THE DIRECTION OF EMERGENCY VEHICLE TRAVEL. STORM DRAIN PROFILES 35. PRIMARY ELECTRICAL DISCONNECT ARE THE SWITCHGEARS. THE SECONDARY DISCONNECT ARE THE TRANSFORMERS. 36. AN ELECTRICAL HAZARD SIGN. AND EMERGENCY CONTACT INFORMATION FOR SITE REPRESENTATIVES SHALL BE LOCATED AT THE ENTRANCE. FOREST CONSERVATION PLAN 37. PANEL LISTINGS AND FLAME SPREAD RATINGS SHALL BE LISTED AT THE ENTRANCE. 38. THE DEVELOPER SHALL PROVIDE TRAININGS TO THE FIRE DEPARTMENT FOR EVERY SOLAR SITE. TAX MAP 9 PARCEL 104 LANDSCAPE PLAN LIBER 4782 FOLIC N55'42'16"E-175.00' THIS PROJECT IS SUBJECT TO ZONING AND LAND USE BOARD OF APPEALS CASE BA-19-008C. ON OCTOBER 5, 2020; THE ZONING AND LAND USE BOARD OF APPEALS GRANTED THE PETITION OF ONEENERGY DEVELOPMENT, LLC PROVIDED THAT THE PETITIONER MEET CERTAIN CONDITIONS. THE PETITION IS GRANTED PROVIDED THAT THE PETITIONER MEET THE FOLLOWING CONDITIONS: ZONE: RC-DEC FOREST CONSERVATION AND LANDSCAPE NOTES AND DETAILS S32°21'39"E THE COMMERCIAL SOLAR FACILITY CONDITIONAL USE SHALL BE CONDUCTED IN CONFORMANCE WITH AND SHALL ONLY TO THE PETITION AS SUBMITTED AND AS SHOWN ON THE REVISED CONDITIONAL USE PLAN DATE JUNE, 2019, AND NOT TO ANY OTHER ACTIVITIES USES, OR STRUCTURES ON THE PROPERTY. HARRY PRESSMAN PETITIONER SHALL COMPLY WITH ALL CONDITIONAL USE STANDARDS. THE SITE DEVELOPMENT PLAN, OR ITS EQUIVALENT, SHALL INCLUDE A NOTE CONTAINING ALL CONDITIONS OF APPROVAL. PETITIONER SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS. THE SYSTEMS SHALL COMPLY WITH APPLICABLE LOCAL, STATE, AND FEDERAL LAWS AND PROVISIONS. CYNTHIA D. PRESSMA TAX MAP 9 PARCEL 15 **DEVELOPER** LIBER 4484 FOLIO 10 ANY COMMERCIAL SOLAR FACILITY THAT IS NO LONGER USED SHALL BE REMOVED BY THE PROPERTY OWNER FROM THE SITE WITHIN ONE YEAR OF THE DATE THAT THE USE CEASES. ZONE: RC-DEO ONEENERGY DEVELOPMENT, LLC THE PREMISES SHALL BE MAINTAINED AT ALL TIMES IN A CLEAN AND ORDERLY CONDITION, INCLUDING THE CARE OR REPLACEMENT OF PLANT USE: RESIDENTIA 2003 WESTERN AVENUE MATERIALS REQUIRED IN THE LANDSCAPING PLAN. THE RESPONSIBILITY FOR COMPLIANCE WITH THIS PROVISION SHALL BE WITH ALL PARTIES SUITE 225 HAVING A LEASE OR OWNERSHIP INTEREST IN THE COMMERCIAL SOLAR FACILITY. THE PETITIONER SHALL REGISTER ALL SOLAR COLLECTORS WITH THE DEPARTMENT OF FIRE AND RESCUE SERVICES. THE REGISTRATION SHALL INCLUDE A MAP OF THE SOLAR FACILITY NOTING THE RESCUE SERVICES. THE REGISTRATION SHALL INCLUDE A MAP OF THE SOLAR FACILITY NOTING THE LOCATION OF THE SOLAR COLLECTORS AND THE PANEL DISCONNECT. LENGTH 85.00' SEATTLE, WA 98121 PLAT# 18217 PHONE: 206-922-7072 TM. 9 PARCEL 120 TREE REMOVAL SHALL BE MINIMIZED, AND REFORESTATION SHALL BE DONE IN ACCORDANCE WITH SECTION 16.1026 OF HOWARD COUNTY CODE. ALL REQUIRED LANDSCAPING SHALL BE PROVIDED WITHIN 6 MONTHS OF INSTALLATION OF THE SOLAR PANELS. ATTENTION: KATE LARKIN JEFFREY A. & CHERYL WARFIELD ZONE: RC-DEO HOARD COUNTY AGRICULTURAL PRESERVATION BOARD REVIEWED THIS PROPOSAL ON OCTOBER 1, 2018, AND FOUND IT TO BE CONSISTENT WITH TAX MAP 9 PARCEL 347 LOT 1 LIBER 3800 FOLIO 25 THE REQUIREMENTS OF AGRICULTURAL PRESERVATION EASEMENT HO-85-04-E SHALL BE CONSIDERED WITH THE DEVELOPMENT OF THE PROPERTY. TM. 9 P. 137 42. THE SOLAR FARM MANAGER AND/OR OWNER IS REQUIRED TO SUBMIT A VEGETATION MANAGEMENT PLAN TO THE HOWARD COUNTY FIRE DEPARTMENT PLAT 12912 OFFICE OF THE FIRE MARSHAL WHICH WILL BE MAINTAINED ON FILE AND ENFORCED. ZONE: RC-DEO ZONE: RC-DEO 43. UPON DECOMMISSIONING OF THE SOLAR FACILITY THE PETITIONER/OPERATOR WILL REMOVE LANDSCAPING AND STORMWATER MANAGEMENT USE: RESIDENTIAL PRACTICES AND RESTORE ACCORDINGLY (AT THE REQUEST OF THE PROPERTY OWNER). LOCATION MAP REVISION SCALE: 1"=300' SITE DEVELOPMENT PLAN **COVER SHEET** METALMARK SOLAR 700 SYKESVILLE RD SYKESVILLE, MD 21784 TAX MAP 9 BLOCK 3 3RD ELECTION DISTRICT **VOGEL ENGINEERING TIMMONS GROUP** P: 410.461.7666 F: 410.461.8961 www.timmons.com NOT TO SCALE APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING ADDRESS CHART DESIGN BY: BUILDING NO. | STREET ADDRESS DRAWN BY: SYKESVILLE ROAD CHIEF. DEVELOPMENT ENGINEERING DIVISION CHECKED BY: PERMIT INFORMATION CHART PARKING TABULATION

STORMWATER MANAGEMENT PRACTICES

FACILITY TYPE & MDE NO.

NON-ROOFTOP DISCONNECT (N-2), MICRO-BIORETENTION (M-6)

700 SYKESVILLE ROAD

12/28/21

12/79/21

CHIEF DIVISION OF LAND DEVELOPMENT

REQUIRED:

2 SPACES

2 SPACES

2 SPACES

2 SPACES PER BA CASE NO. 18-013C

TOTAL PARKING SPACES REQUIRED:

TOTAL PARKING SPACES PROVIDED:

SHEET 17

DATE: <u>SEPTEMBER 2021</u>

____ AS SHOWN

SCALE:

W.O. NO.:

LOT/PARCEL NUMBER

CENSUS TR

603003

SECTION/AREA

ELECT. DIST.

SUBDIVISION NAME

METALMARK SOLAR

L.5715/F.542

PLAT OR L/F | GRID NO. | ZONING | TAX MAP NO. |

PUBLIC | PRIVATE | MAINTENANCE BY

VICINITY MAP

SCALE: 1"=2000

SHEET NO.

1 OF 17

2-3 OF 17

4 OF 17

5-6 OF 17

8-9 OF 17

10 OF 17

11-12 OF 17

13 OF 17

14-15 OF 17

16 OF 17

17 OF 17

METALMARK SOLAR, LLC

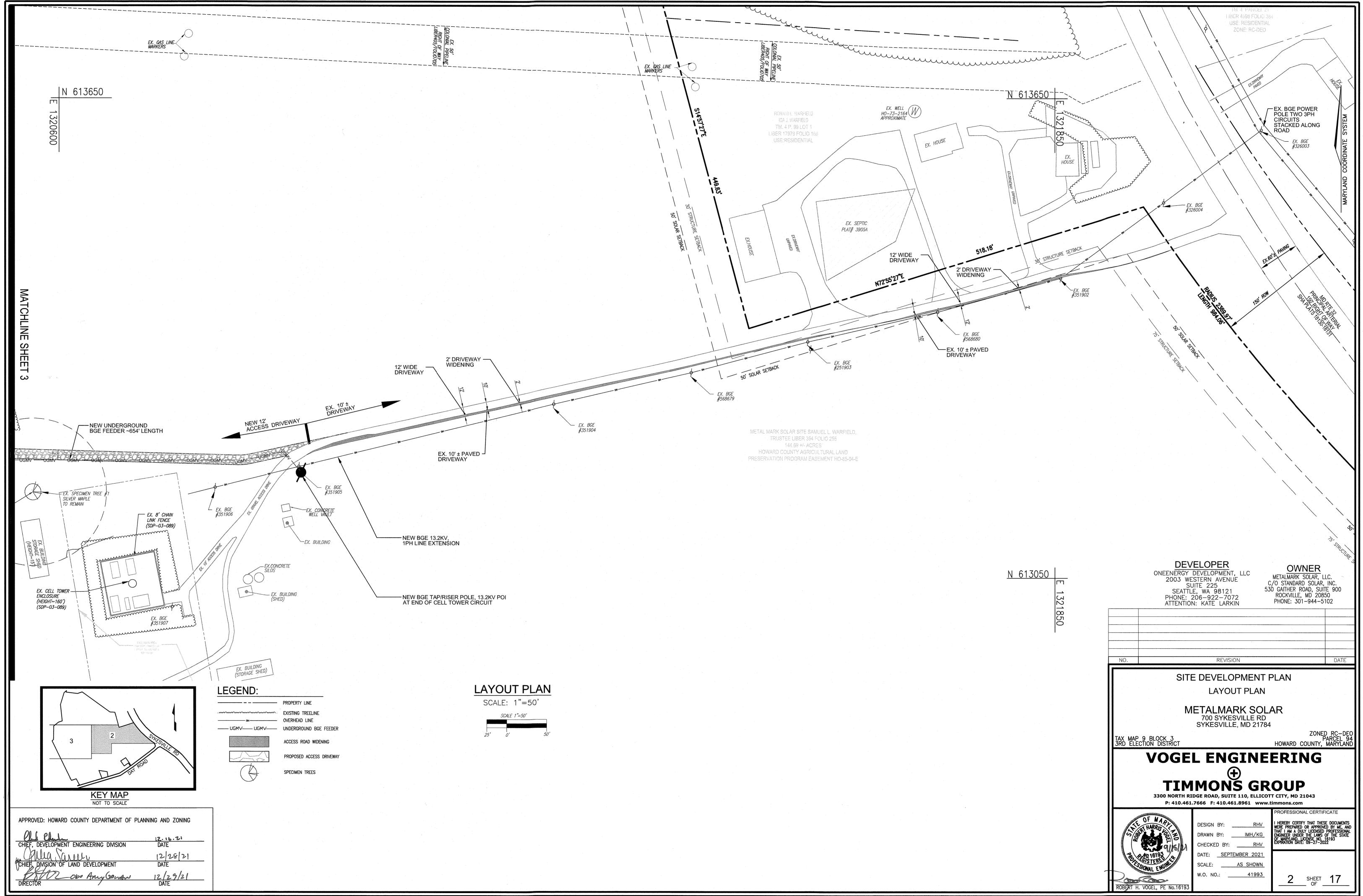
C/O STANDARD SOLAR, INC.

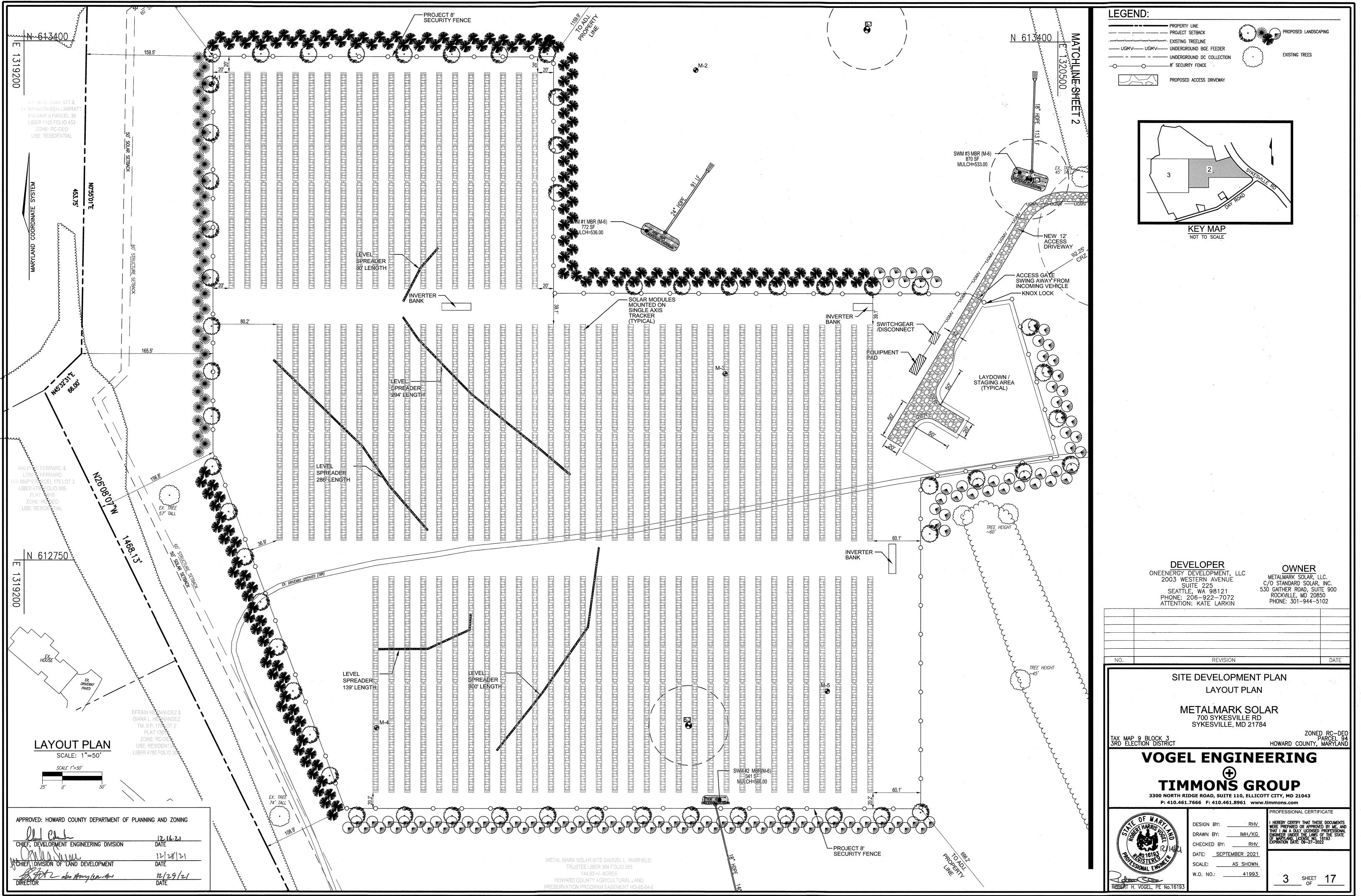
530 GAITHER ROAD, SUITE 900

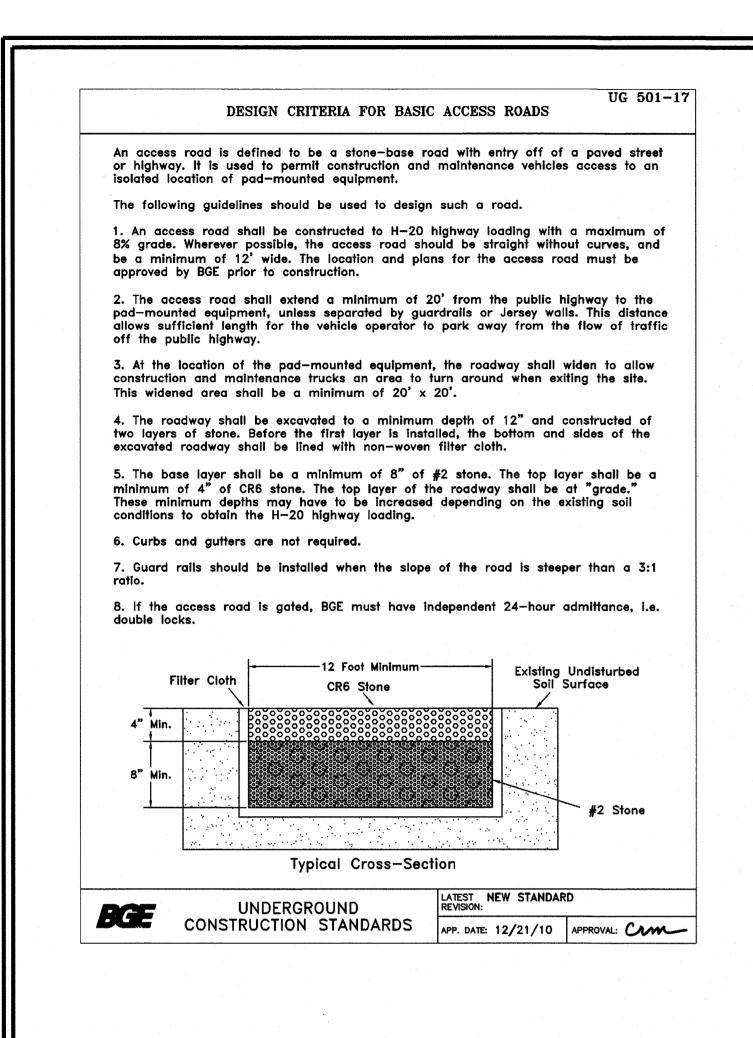
ROCKVILLE, MD 20850

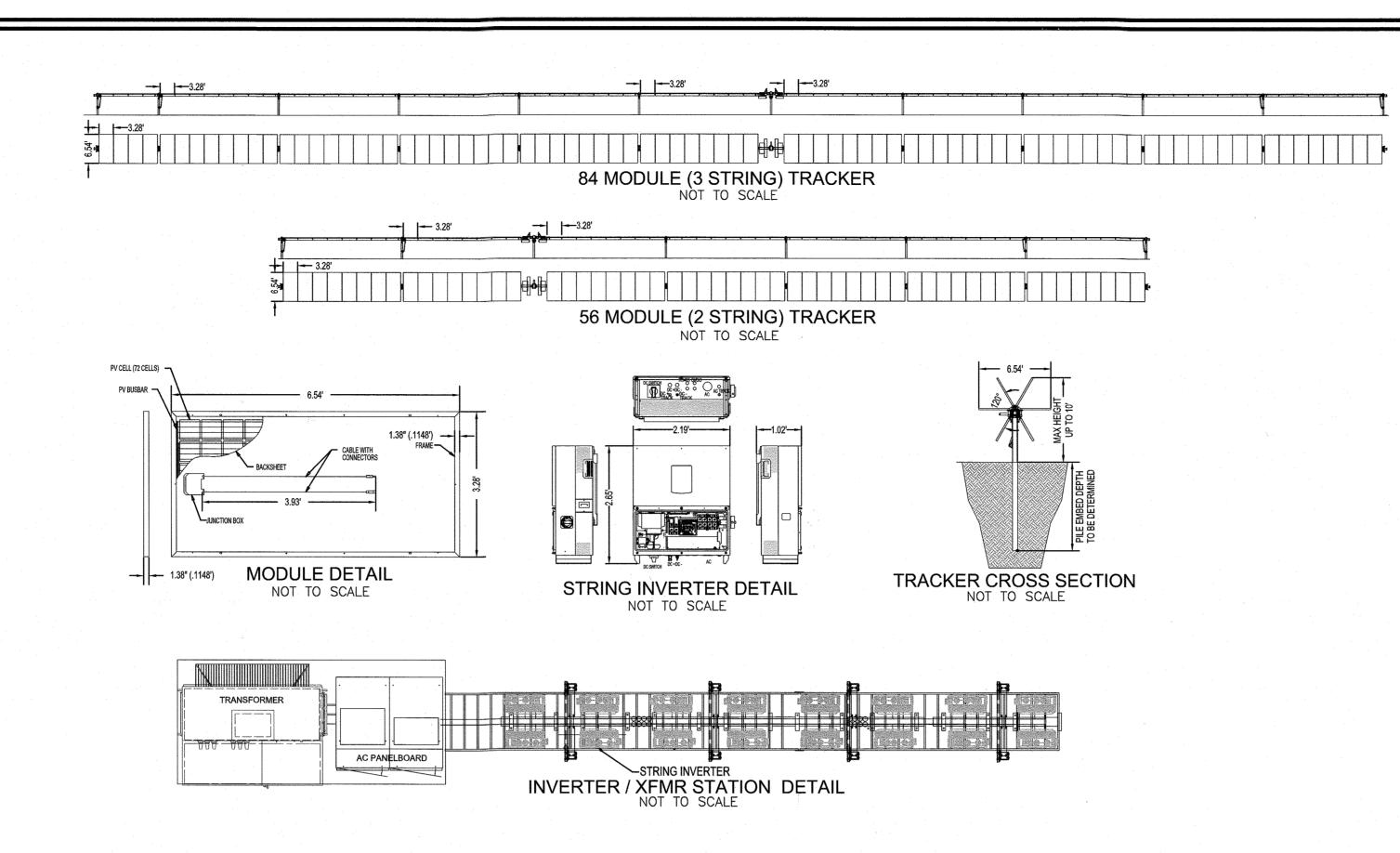
PHONE: 301-944-5102

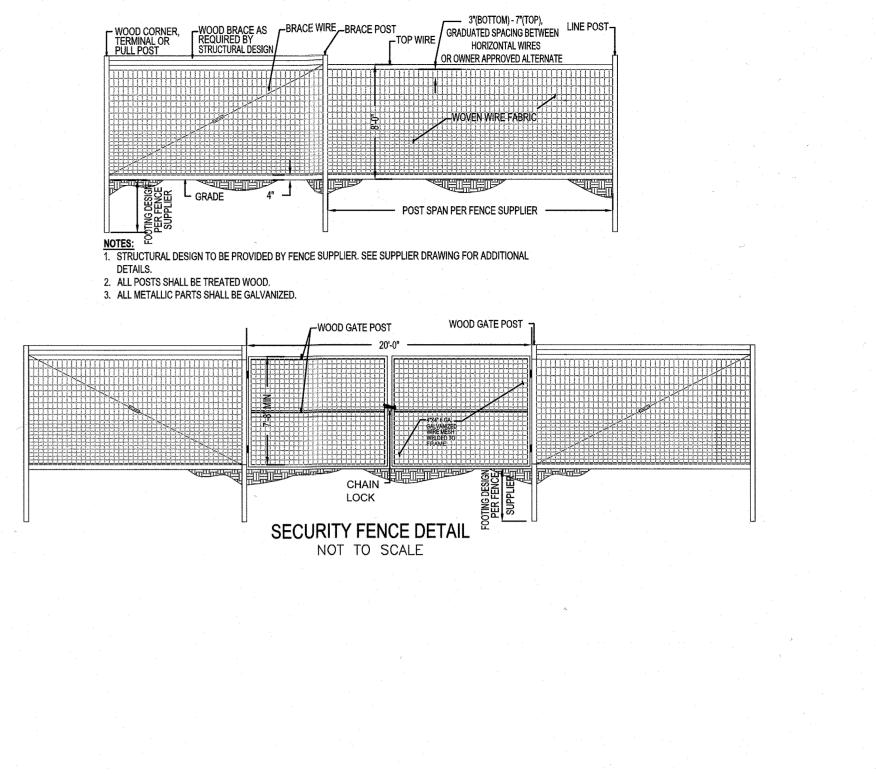
ZONED RC-DEO PARCEL 94 HOWARD COUNTY, MARYLAND

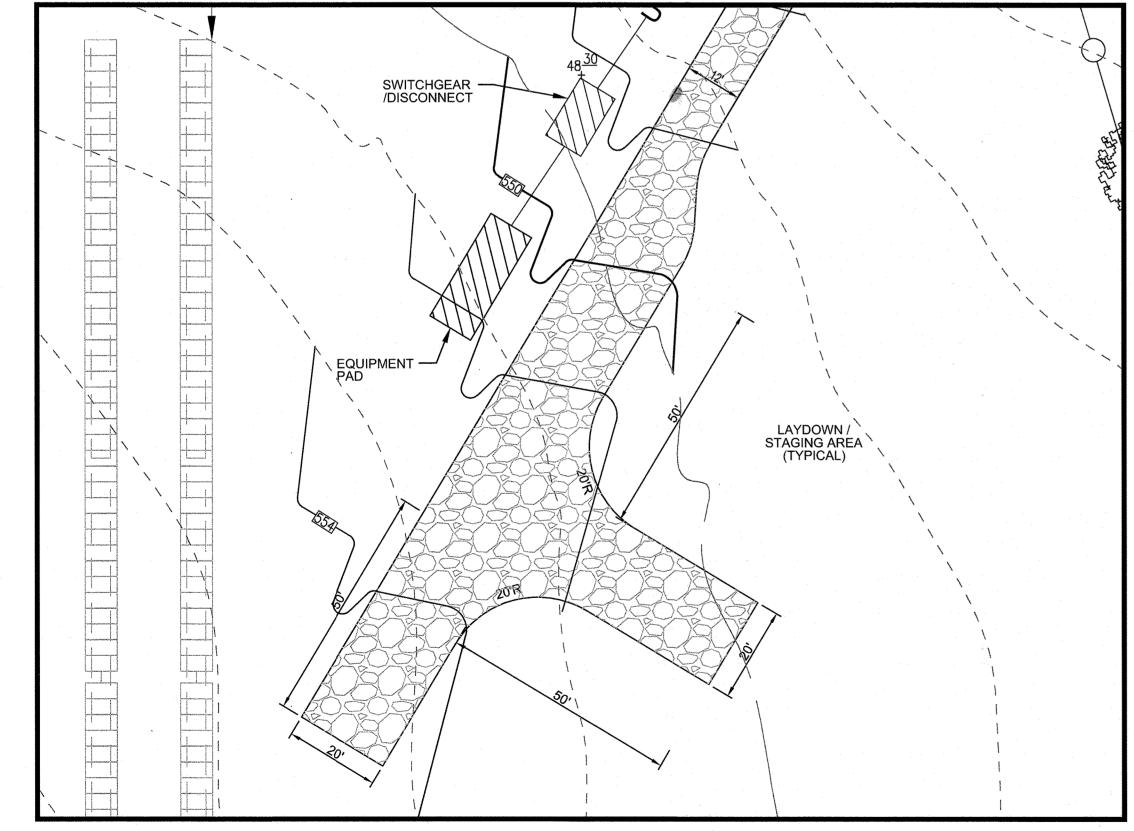




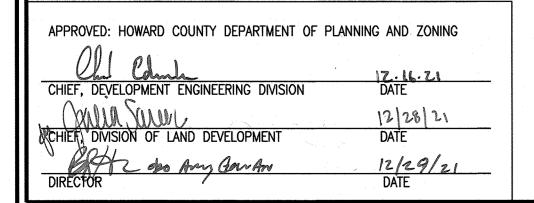








TURN AROUND PLAN VIEW SCALE: 1" = 20'



METALMARK SOLAR 700 SYKESVILLE RD SYKESVILLE, MD 21784 TAX MAP 9 BLOCK 3 3RD ELECTION DISTRICT **VOGEL ENGINEERING** TIMMONS GROUP RQBERT H. VOGEL, PE No.1619

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

REVISION

SITE DEVELOPMENT PLAN

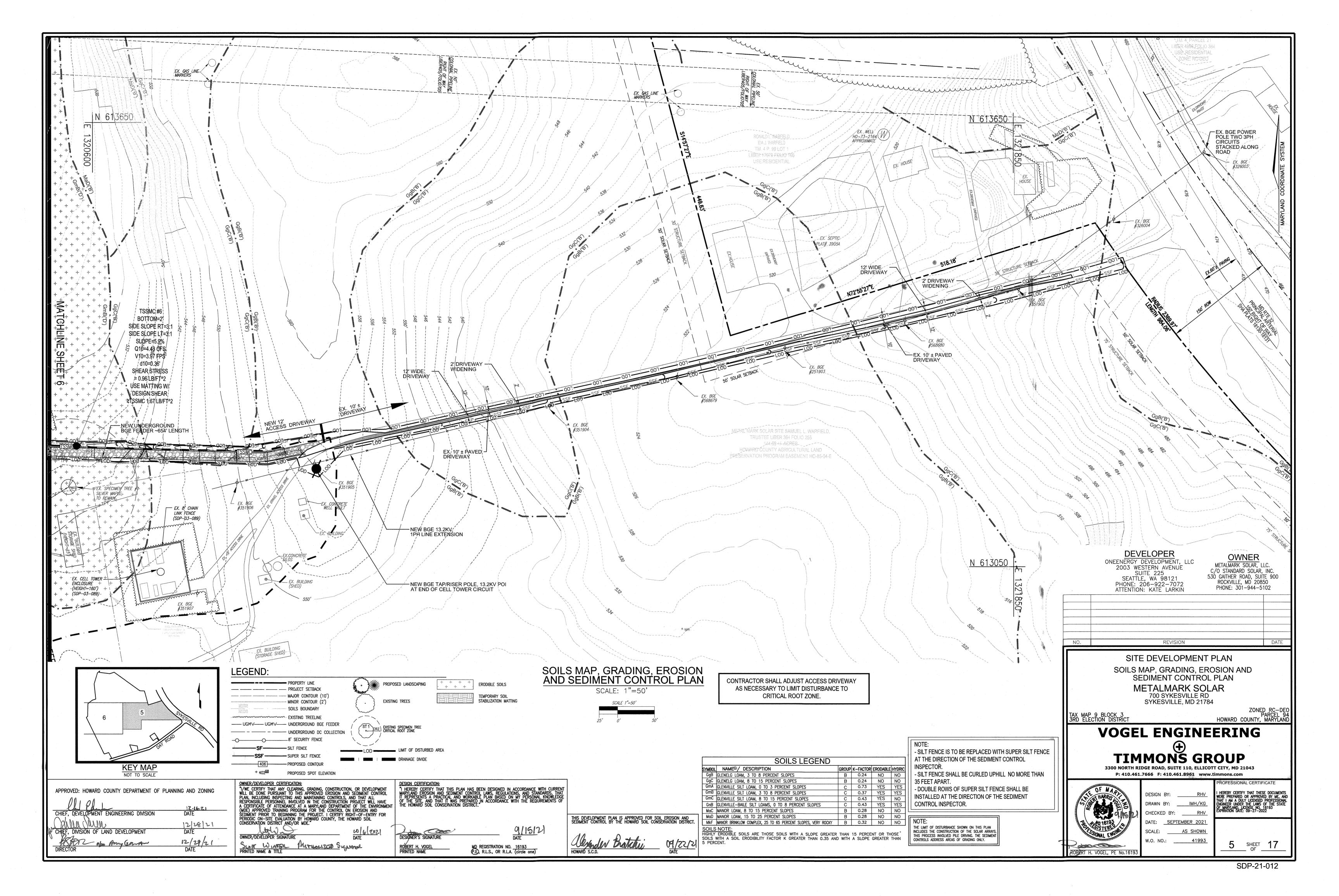
SITE DETAILS

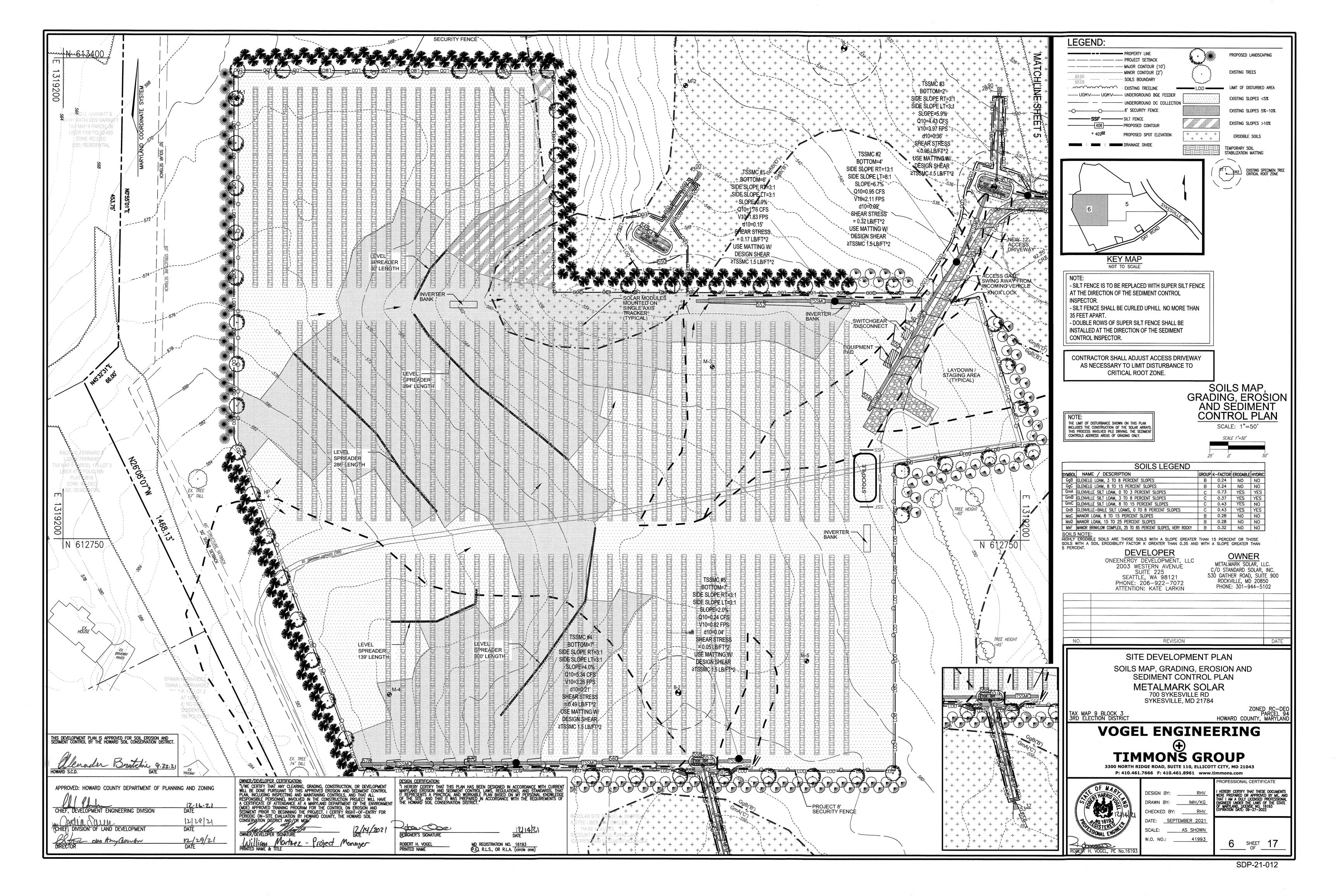
P: 410.461.7666 F: 410.461.8961 www.timmons.com CHECKED BY: RHV DATE: SEPTEMBER 2021 SCALE: AS SHOWN W.O. NO.: 41993 4 SHEET 17

METALMARK SOLAR, LLC.

C/O STANDARD SOLAR, INC. 530 GAITHER ROAD, SUITE 900 ROCKVILLE, MD 20850 PHONE: 301-944-5102

ZONED RC-DEC PARCEL 94 HOWARD COUNTY, MARYLAND





HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID.), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES: PRIOR TO THE START OF EARTH DISTURBANCE
- UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
- PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE
- AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO
- THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). EMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN, INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND
- HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6). ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

* ACRES

CU. YDS. TOTAL

TOTAL AREA OF SITE AREA DISTURBED AREA TO BE ROOFED OR PAVED: AREA TO BE VEGETATIVELY STABILIZED: TOTAL FILL OFFSITE WASTE/BORROW AREA LOCATION: TO BE DETERMINED

(1) REFER TO ITEM 11 BELOW

- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED IF DEFMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE
 - INSPECTION DATE INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT) NAME AND TITLE OF INSPECTOR
 - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION) BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
 - EVIDENCE OF SEDIMENT DISCHARGES IDENTIFICATION OF PLAN DEFICIENCIES
 - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
 - PHOTOGRAPHS MONITORING/SAMPLING MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
- OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE). TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS
- OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY WHICHEVER IS SHORTER ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION
- MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE
- SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC PER GRADING LINIT) AT A TIME WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN
- SO ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHE
- SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT 13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND
- BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN FI EVATION. 15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
- USE I AND IP MARCH 1 JUNE 1 USE III AND IIIP OCTOBER 1 - APRIL 30
- 16. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

ITEM 11, REGARDING PROJECT DISTURBANCE IS NO LONGER A REQUIREMENT OF THE STATE OF MARYLAND, HOWEVER REMAINS A REQUIREMENT OF HOWARD COUNTY

EITHER PERMANENT OR TEMPORARY

SEDIMENT CONTROL NOTES AND/OR

INSPECTOR REGARDLESS OF

SEEDING SPECIFICATIONS.

CHIEF. DEVELOPMENT ENGINEERING DIVISION

CHIEF, DIVISION OF LAND DEVELOPMEN

DAYS/DATES IN THE STANDARD

STABILIZATION IS TO BE APPLIED AT THE

DIRECTION OF THE SEDIMENT CONTROL

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

B-4-5 STANDARDS AND SPECIFICATIONS

DEFINITION TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND

CONDITIONS WHERE PRACTICE APPLIES

COVER ON DISTURBED SOILS.

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

A. SEED MIXTURES

A. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 8.3 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 8.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE 8.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN

B. ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHORELINES

- STREAM BANKS. OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING C. FOR SITES HAVING DISTURBED AREA OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY. D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREA FORM FERTILIZER (46-0-0) AT 3-1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
- A. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE B. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE ENTER SELECTED MIXTURE(S) APPLICATION RATES AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED
- KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. IRRIGATION REQUIRED IN THE AREAS OF CENTRAL MARYLAND AND EASTERN SHORE, RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT. II. KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE: FOR USE IN FULL SUN AREAS WHERE RAPID ESTABLISHMENT IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/
- CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT. III. TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN DROUGHT PRONE AREAS AND/OR FOR AREAS RECEIVING LOW TO MEDIUM MANAGEMENT IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE ULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED
- IV. KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE: FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA. MIXTURE INCLUDES; CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT SEEDING RATE: 11/2 TO 3 POUNDS PER 1000 SQUARE FEET.

SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND" CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE. TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC

C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

- WESTEM MD: MARCH 15 TO JUNE 1. AUGUST ITO OCTOBER 1 (HARDINESS ZONES: 5B. 6A) - CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONE: 6B) - SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDINESS ZONES: 7A, 7B)
- TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES, LEVEL AND RAKE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS OVER 11/4 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY IF SOIL MOISTURE IS DEFICIENT. SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVERSE SITES.
- B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

A. CLASS OF TURFGRASS SOD MUST BE MARYLAND STATE CERTIFIED, SOD LABELS MUST BE MADE AVAILABLE TO THE JOB FOREMAN AND INSPECTOR. B. SOD MUST BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4 INCH, PLUS OR MINUS 1/4 INCH. AT THE TIME OF CUTTING, MEASUREMENT FOR THICKNESS MUST FXCLUDE TOP GROWTH AND THATCH. BROKEN PADS AND TOM OR UNEVEN ENDS WILL NOT BE **ACCEPTABLE** C. STANDARD SIZE SECTIONS OF SOD MUST BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED VERTICALLY WITH A FIRM GRASP ON THE UPPER 10 PERCENT OF THE SECTION. D. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL. SOD MUST BE HARVESTÉD, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS. SOD NOT TRANSPLANTED WITHIN THIS PERIOD MUST BE APPROVED BY AN AGRONOMIST OR SOIL SCIENTIST PRIOR TO ITS INSTALLATION.

A. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL LIGHTLY IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD B. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED RALLEL TO IT AND TIGHTLY WEDGED AGAINST EACH OTHER. STAGGER LATERAL JOINTS TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE AIR DRYING OF THE ROOTS. C. WHEREVER POSSIBLE, LAY SOD WITH THE LONG EDGES PARALLEL TO THE CONTOUR AND WITH STAGGERING JOINTS. ROLL AND TAMP, PEG OR OTHERWISE SECURE THE SOD TO PREVENT

SLIPPAGE ON SLOPES. ENSURE SOLID CONTACT EXISTS BETWEEN SOD ROOTS AND THE UNDERLYING SOIL SURFACE. D. WATER THE SOD IMMEDIATELY FOLLOWING ROLLING AND TAMPING UNTIL THE UNDERSIDE OF HE NEW SOD PAD AND SOIL SURFACE BELOW THE SOD ARE THOROUGHLY WET. COMPLETE THE OPERATIONS OF LAYING, TAMPING AND IRRIGATING FOR ANY PIECE OF SOD WITHIN EIGHT

A. IN THE ABSENCE OF ADEQUATE RAINFALL, WATER DAILY DURING THE FIRST WEEK OR AS OFTEN AND SUFFICIENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF 4 INCHES, WATER SOD DURING THE HEAT OF THE DAY TO PREVENT WILTING B. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE CONTENT. C. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS EAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

OWNER/DEVELOPER CERTIFICATION

PERMANENT SEEDING SUMMARY

		ONE (FROM FIGURE E (FROM TABLE B.3		6b		FERTILIZER RATE (10-20-20)		LIME RATE
NO	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	. · N	P ₂ 0 ₅	к ₂ 0	
9	COOL SEASON TALL FESCUE & KENTUCKY BLUEGRASS PERENNIAL RYEGRASS OR EQUAL	T.F. 60 LB / AC K.B. 40 LB / AC P.R. 20 LB / AC	AUG 15 TO OCT 15	1/4-1/2 IN.	(1 LB PER	(2 LB PER		1 '
4	WARM/COOL SEASON GRASS MIX DEERTOUNGE CREEPING RED FESCUE & CANADA WILD RYE	CRF 20 LB / AC	MAR 1 TO MAY 15 <><> MAY 16 TO JUNE 15*					

FOR ALTERNATES, REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL - PAGES B.26 - B.32

R-4-2 STANDARDS AND SPECIFICATIONS

SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS PERMANENT STABILIZATION

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

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

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

CRITERIA

A. SOIL PREPARATION

- A. SEEDBED PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 5 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT, SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPPERS MOUNTED ON CONSTRUCTION FOUIPMENT AFTER THE SOIL IS LOOSENED, IT MUST NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
- OR OTHER SUITABLE MEANS. PERMANENT STABILIZATION A. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:

INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING

- I. SOIL PH BETWEEN 6.0 AND 7.0. IL SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM). III. SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD À MODERATE AMOUNT OF MOISTURE, AN EXCÉPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD
- IV. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT. V. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION. B. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET
- THE APPROVED PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO D. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST E. MIX SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS, RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED

OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE.

PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR

C. GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON

SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

- I. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCEM HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PURPOSE PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION. 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS, TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE
- REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-3. TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE: A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH. B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FLIRNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT . THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH. D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE
- 4. AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND 5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING A. TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR BY THE APPROPRIATE APPROVAL AUTHORITY. TOPSOIL MUST NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND MUST CONTAIN LESS THAN 5 PERCENT BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 11/2 INCHES IN DIAMETER.
- B. TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED C. TOPSOIL SUBSTITUTES OR AMENDMENTS, AS RECOMMENDED BY A QUALIFIED AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY, MAY BE USED IN LIEU OF NATURAL TOPSOIL.
- 6. TOPSOIL APPLICATION A. EROSION AND SEDIMENT CONTROL PRACTICES MUST BE MAINTAINED WHEN APPLYING 3. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPAC TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE, ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS MUST BE CORRECTED IN ORDER TO PREVENT THE C. TOPSOIL MUST NOT BE PLACED IF THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT
- MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION. C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS) I. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES . FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTY OF THE PRODUCER.
- 3. LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE. 4. LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. 5. WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

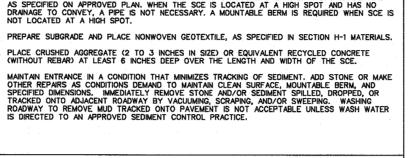
-PIPE (SEE NOTE 6) PROFILE 50 FT MIN. PLAN VIEW CONSTRUCTION NOTES PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE, PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5-11 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE, PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT NECESSARY. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS

MPT -

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DETAIL B-1 STABILIZED CONSTRUCTION

ENTRANCE

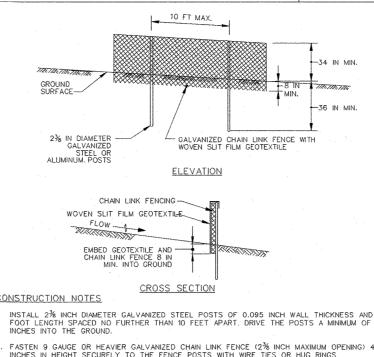


MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

SCE

- EXISTING PAVEMENT

1

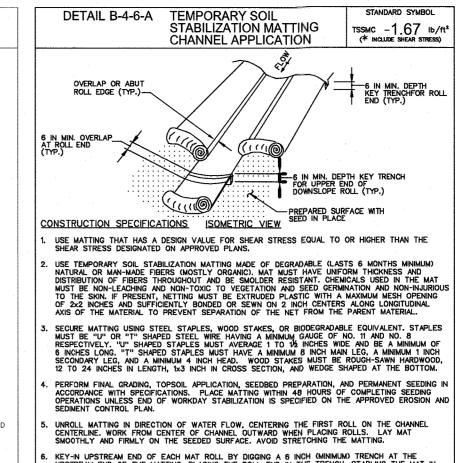


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DETAIL E-3 SUPER SILT FENCE

- INSTALL 2% INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2% INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO HE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TO D SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE. THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

2011



- KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
- OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT

ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABLIZATION.

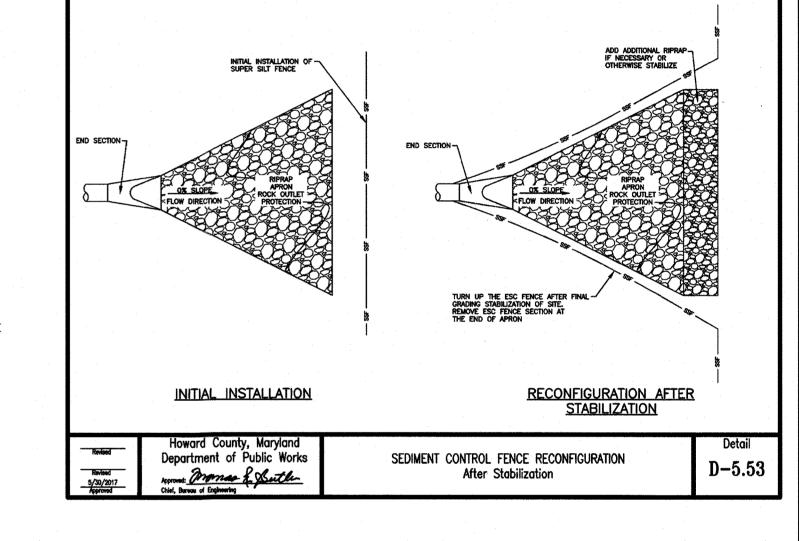
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

SEQUENCE OF CONSTRUCTION

OBTAIN GRADING PERMIT. (1 DAY) NOTIFY HOWARD COUNTY BUREAU OF INSPECTIONS AND PERMITS (410-313-1880) AT

- LEAST 24 HOURS BEFORE STARTING ANY WORK. (1 DAY)
- STAKEOUT LIMITS OF DISTURBANCE (1 DAY) *DISTURBANCE SHALL BE HELD TO THE SURROUNDING AREA OF GRADING SHOWN ON PLAN.
- CLEAR AND GRUB AND INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 DAY) INSTALL PERIMETER CONTROLS AS SHOWN IN PLAN VIEW IN ACCORDANCE WITH DETAILS HEREON. STOCKPILING SHALL BE LIMITED TO PROJECT SITE AS SHOWN HEREON. STOCKPILES SHALL BE STABILIZED AS DETAILED HEREON. (1 DAY)
- UPON APPROVAL OF PERIMETER CONTROL INSTALLATION BY COUNTY INSPECTOR, BEGIN GRAVEL DRIVEWAY CONSTRUCTION. (2 WEEKS). BEGIN CONSTRUCTION OF SOLAR ARRAYS, MICRO-BIORETENTION, INSTALL UNDERGROUND ELECTRIC AND
- PERFORM FINE GRADING AS SHOWN ON PLAN. STABILIZE AREA WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH OR EQUAL STABILIZATION. INSTALL LANDSCAPING PER PLAN AND DETAILS. (3 WEEKS)
- 11. AFTER PERMISSION HAS BEEN GIVEN BY SEDIMENT CONTROL INSPECTOR, REMOVE ANY REMAINING EROSION AND SEDIMENT CONTROLS AND STABILIZE THE DISTURBED AREAS FROM THE DISTURBANCES WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH. (1 DAY)

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



B-4-4 STANDARDS AND SPECIFICATIONS TEMPORARY STABILIZATION

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

TO USE FAST GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS.

FOR LONGER DURATION OF TIME, PERMANENT STABILIZATION PRACTICES ARE REQUIRED. 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE 8.1 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE B.3). AND ENTER THEM IN THE TEMPORARY SEEDING SUMMARY BELOW ALONG WITH APPLICATION RATES.

SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE PLAN

ND COMPLETED, THEN TABLE 8.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT 2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY 3. WHEN STABILIZATION IS REQUIRED OUTSIDE OF A SEEDING SEASON, APPLY SEED AND MULCH OR STRAW MULCH ALONE AS PRESCRIBED IN SECTION B-4-3.A.1.B AND MAINTAIN UNTIL THE NEXT SEEDING SEASON TEMPORARY SEEDING SUMMARY

		ONE (FROM FIGURE E (FROM TABLE B.	NE 6b	FERTILIZER RATE	LIME RATE		
0	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS	(10-20-20)		
-	COOL SEASON ANNUAL RYEGRASS OR EQUAL	40 LB / AC	MAR 1 TO MAY 15 AUG 1 TO OCT 15	1/2 IN.	436 LB/AC (10 LB PER 1000 SF)	2 TONS/AC (90 LB PER 1000 SF)	
?	WARM SEASON FOXTAIL MILLET OR EQUAL	30 LB / AC	MAY 16 TO JUL 31	1/2 IN.			

FOR ALTERNATES, REFER TO THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

B-4-8 STANDARDS AND SPECIFICATIONS STOCKPILE AREA

TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT

CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE

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

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

THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT

CONTROL PRACTICE. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO

INTERCEPT THE DISCHARGE STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DA STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN

ONEENERGY DEVELOPMENT, METALMARK SOLAR, LLC 2003 WESTERN AVENUE C/O STANDARD SOLAR, INC. SUITE 225 530 GAITHER ROAD, SUITE 900 SEATTLE, WA 98121 ROCKVILLE, MD 20850 PHONE: 206-922-7072 PHONE: 301-944-5102 ATTENTION: KATE LARKIN DATE

OWNER

DEVELOPER

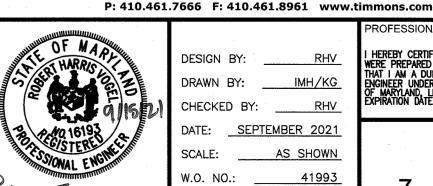
SITE DEVELOPMENT PLAN GRADING, EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

METALMARK SOLAR 700 SYKESVILLE RD

SYKESVILLE, MD 21784 AX MAP 9 BLOCK 3 SRD ELECTION DISTRICT

> **VOGEL ENGINEERING TIMMONS GROUP**

3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043



DESIGN BY: DRAWN BY: CHECKED BY: DATE: <u>SEPTEMBER 2021</u> SCALE:

ROFESSIONAL CERTIFICATI IMH/KG AS SHOWN SHEET 17

SDP-21-012

ZONED RC-DE PARCEL 9 HOWARD COUNTY, MARYLAN

PAGE B.20, TABLE B.1 ACCORDANCE WITH SECTION B-3 LAND GRADING. PRINTED NAME & TITLE MD REGISTRATION NO. 16193 (P.E), R.L.S., OR R.L.A. (circle one)

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT." "I/WE CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO REGINNING THE PROJECT: I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON—SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

DESIGN CERTIFICATION:

IV. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4 TO 15 FEET WIDE AND 300 TO 3,000 FEET LONG.

III. SYNTHETIC BINDERS SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSE

POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER

B-4-3 STANDARDS AND SPECIFICATIONS

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER

DEFINITION

CONDITIONS WHERE PRACTICE APPLIES

THE INOCULANT LESS EFFECTIVE

SEED TO SOIL CONTACT

RATE IN EACH DIRECTION.

. MULCH MATERIALS (IN ORDER OF PREFERENCE)

MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

GROWTH OF THE GRASS SEEDLINGS

2. APPLICATION

SHOULD FOLLOW THE CONTOUR.

SEEDING AND MULCHING

FOR

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

TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

A. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE

TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY

PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE

B. MULGHEALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE

GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND

C. INOCULANTS: THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES MUST BE A

INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN

HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL

USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN WEAKEN BACTERIA AND MAKE

D. SOD OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS

OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO

I. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING

TABLE 8.1, PERMANENT SEEDING TABLE 8.3, OR SITE-SPECIFIC SEEDING SUMMARIES.

II. APPLY SEED IN TWO DIRECTIONS. PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDI

B. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL

AT LEAST 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.

C. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND

ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING

. WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN

WCFM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD

CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND

WITH SEED. FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MUICH WATERIAL MUS

PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE

IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE

MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT

B. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS

C. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500

A. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS

BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY

I. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO

LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE

THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS

II. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY

WEIGHT OF 750 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50

TERRA TAX II, TERRA TACK AR OR OTHER APPRÒVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS

SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE

WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY

MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.

MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

PREFERENCE). DEPENDING UPON THE SIZE OF THE AREA AND FROSION HAZARD.

PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A

UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A

POUNDS PER ACRE, MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A

V. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 1

FORM A BLOTTER-LIKE GROUND COVER. ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION

APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY,

I. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.

A. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.

IV. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATI

III MIX SFED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.

A. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, LYE, OAT, OR BARLEY AND REASONABLY

BRIGHT IN COLOR, STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE

USE ONLY STERILE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.

B. WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE

MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE:

I. CULTIPACKING SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE

II. APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING

I. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT

EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN:

P205 (PHOSPHOROUS), 200 POUNDS PER ACRE; K20 (POTASSIUM), 200 POUNDS PER ACRE.

II. LIME: USE ONLY GROUND AGRICULTURAL LIMESTONE (UP TO 3 TONS PER ACRE MAY BE APPLIED

BY HYDROSEEDING). NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT

RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD

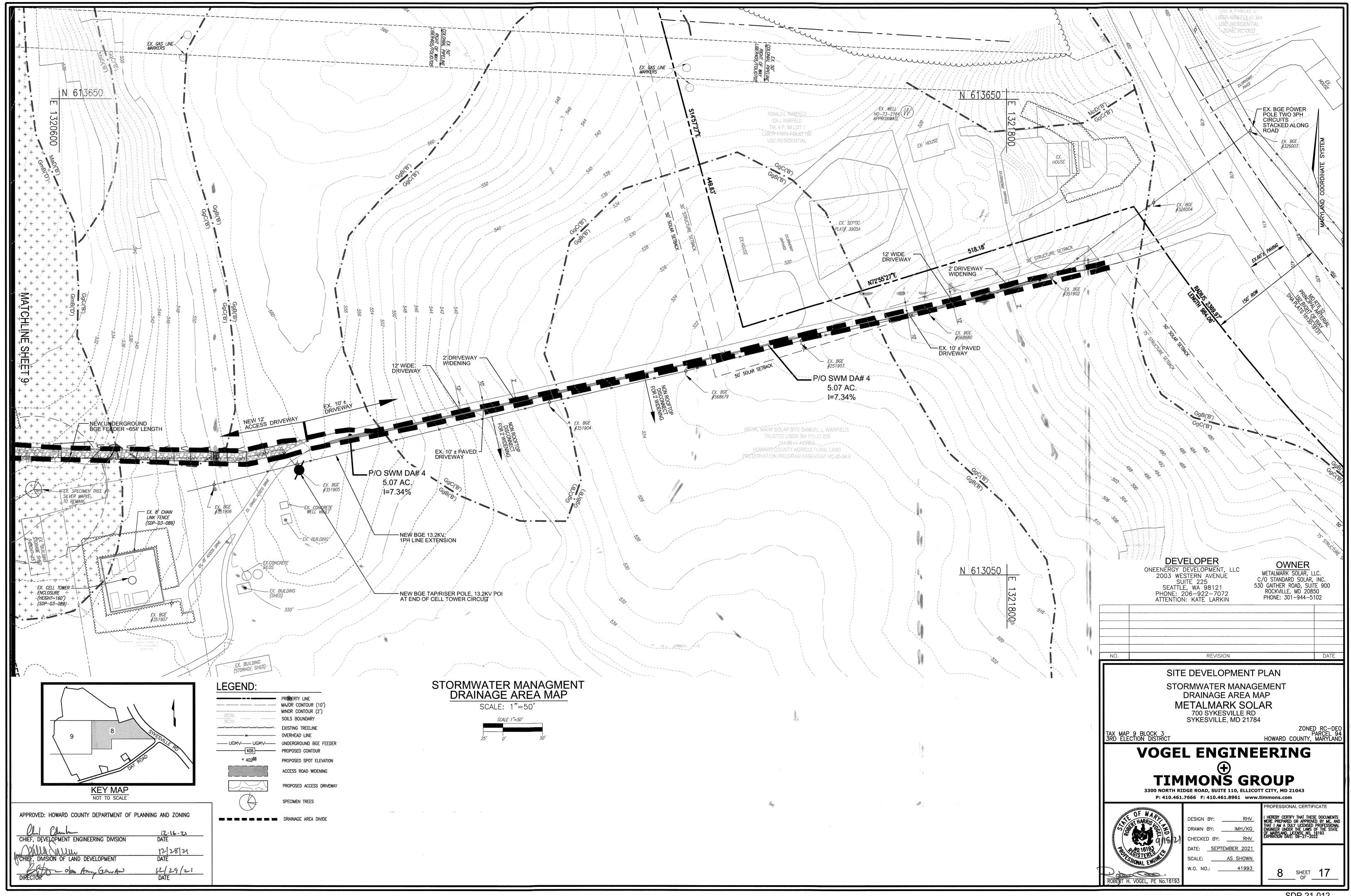
INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER, ADD FRESH

PLIRE CHITTIRE OF NITROGEN FIXING RACTERIA PREPARED SPECIFICALLY FOR THE SPECIES

A. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS

UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.

TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN





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. . 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 DUMPED WITHIN THE MICRO—BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDRANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05. THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:

* SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION).

* ORGANIC CONTEN -- MINIMUM 10% BY DRY WEIGHT (ASTM D 2974), IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).

* CLAY CONTENT — MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.

* CLAY CONTENT — MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.

* PH RANGE — SHOULD BE BETWEEN 5.5 — 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED IN TO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER PROJECT. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH, AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED TOPSOIL. IF TOPSOIL IS IMPORTED, THEN A 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 HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK EQUIPMENT, OR LIGHT EQUIPMENT WITH TURF TYPE TIRES. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH—PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE. COMPACTION CAN BE ALLEVIATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS CHISEL PLOW, RIPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACTURE THE SOILE 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. FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENION FACILITY BEFORE BACKFILLING THE

OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE. WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12" TO 18". DO NOT USE HEAVY EQUIPMENT WITHIN THE BIORETENTION BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN TO SUPPLY SOILS AND SAND. GRADE BIORETENTION MATERIALS WITH LIGHT EQUIPMENT SUCH AS A COMPACT LOADER OR A DOZER/LOADER WITH MARSH TRACKS.
4. PLANT MATERIAL

MMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION 5. PLANT INSTALLATION
COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE

INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2 TO 3". SHREDDED OR CHIPPED HARDWOOD MULCH IS THE ONLY ACCEPTED MULCH. PINE MULCH AND WOOD CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA. DURING A STORM EVENT AND ARE CHIPS WILL FLOAT AND MOVE TO THE PERIMETER OF THE BIORETENTION AREA DURING A STORM EVENT AND ARE NOT ACCEPTABLE. SHREDDED MULCH MUST BE WELL AGED (6 TO 12 MONTHS) FOR ACCEPTANCE. ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT AND ON—SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION. TREES SHALL BE BRACED USING 2" BY 2" STAKES ONLY AS NECESSARY AND FOR THE FIRST GROWING SEASON ONLY. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL. GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF AT LEAST ONE INCH. GRASS AND LEGUME PLUGS SHALL BE PLANTED FOLLOWING THE NON—GRASS GROUND COVER PLANTING SPECIFICATIONS. THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY. ADDING FERTILIZERS DEFEATS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEFT. 6. UNDERDRAINS

UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:

* PIPE - SHOULD BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTMF 758, TYPE PS 28, OR AASHTO-M-278) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED, 4" RIGID PIPE (E.G., PVC OF HDPE).

* PERFORATIONS — IF PERFORATED PIPE IS USED, PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6"
ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4)

OR 4x4) GALVANIZED HARDWARE CLOTH.

* GRAVEL – THE GRAVEL LAYER (NO. 57 STONE PREFERRED) SHALL BE AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN.

* THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

* A RIGID, NON-PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1,0000 SQUARE FEET) TO PROVIDE A CLEAN-OUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

* A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES IN TO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".

THIS MAIN COLLECTOR PIPE FOR UNDERDRAIN SYSTEMS SHALL BE CONSTRUCTED AT A MINIMUM SLOPE OF 0.5%.

OBSERVATION WELLS AND/OR CLEAN-OUT PIPES MUST BE PROVIDED (ONE MINIMUM PER EVERY 1000 SQUARE FEET OF SURFACE AREA).
7. MISCELLANEOUS THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

DISCONNECTION OF NON ROOFTOP RUNOFF

ADDITIONALLY, AMENDMENTS MAY BE NEEDED FOR TIGHT, CLAYEY SOILS.

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

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 RECEIVINGRUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED AS WELL.

OPERATION AND MAINTENANCE SCHEDULE FOR 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, MULTCH 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.

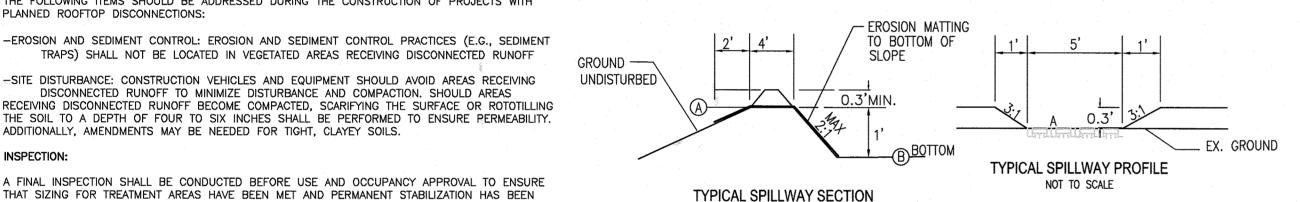
APPROVED: HOWARD COUNTY DEPARTMENT OF PLA	ANNING AND ZONING
Clad Clade	12.16.21
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
Mha Sum	12/28/21
CHIEF, DIVISION OF LAND DEVELOPMENT	ĎATĚ
1 Stor de Any Contra	12/29/21
DIRECTOR	DATE

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

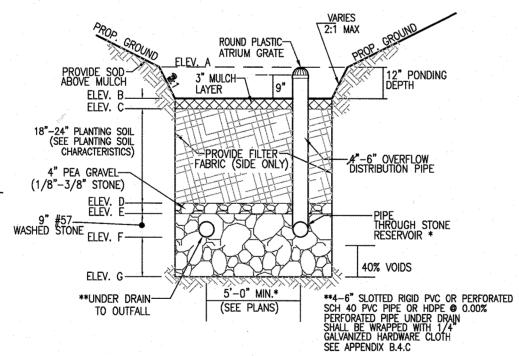
Material	Specification	Size	Nates
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
	sandy loam (30%), coarse sand (30%) & compost (40%)		
Organic 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 berms)	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 SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f _c = 3500 psi @ 28 days, normal weight, air-entrained; reinforcing to meet ASTM-615-60	n/a	on-site 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 350.R/89; vertical loading [IH-10 or H-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 Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.

TEST PIT DATA										
BORING#	APPROX. EXIST	APPROX. PROP	INVERT FACILITY/	TEST PIT	воттом	NOTES				
Committee (Market Committee Committe	GROUND ELEV	GROUND ELEV	PRACTICE	DEPTH	PT PT A recognition of the exploration of the second of	The second secon				
TEST PITS										
B-1	534.40	533.00	529.00	8.00	526.40	DRY, NO ROCK				
B-2	560.40	560.00	556.00	8.00	552.40	DRY, NO ROCK				
B-3	534.96	533.00	529.00	8.00	526.96	DRY, NO ROCK				

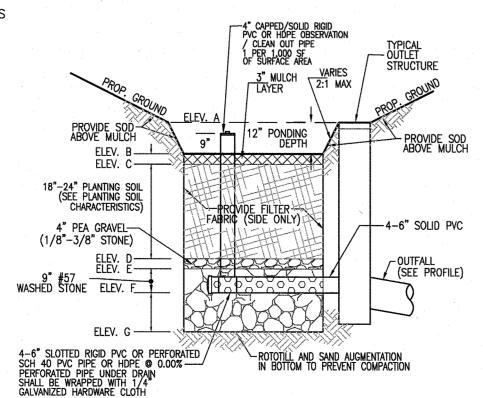
		MICRO	-BIORETEN	TOP BOTTOM BOTTOM INV INV SURFACE APPROX					
MBR/BR	ESD	ТОР	ТОР	воттом	воттом	INV	INV	SURFACE	APPROX
FACILITY	WSEL	MULCH	PLANT SOIL	PLANT SOIL	PEA GRAVEL	PIPE (1)	STONE	AREA	DIM
#	Α	В	С	D	Ε	F	G	SF	
1	548.00	547.00	546.75	544.75	544.42	543.67	542.67	772	SEE PLAN
2	558.00	557.00	556.75	555.25	554.92	554.17	553.17	341	SEE PLAN
3	534.00	533.00	532.75	530.75	530.42	529.67	528.67	870	SEE PLAN
(1) UNDER	RDRAIN PIPE	AND OVE	RFLOW DISTR	IBUTION PIPE					



NOT TO SCALE DETAIL WEIR OUTLET BIORETENTION

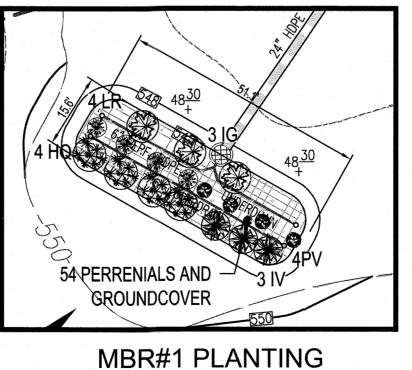


MICRO-BIORETENTION (OVERFLOW) (M-6)

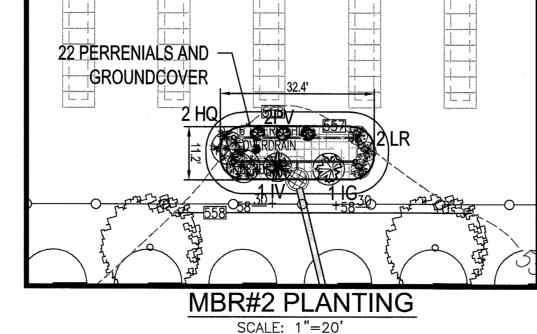


MICRO-BIORETENTION (UNDERDRAIN) (M-6)

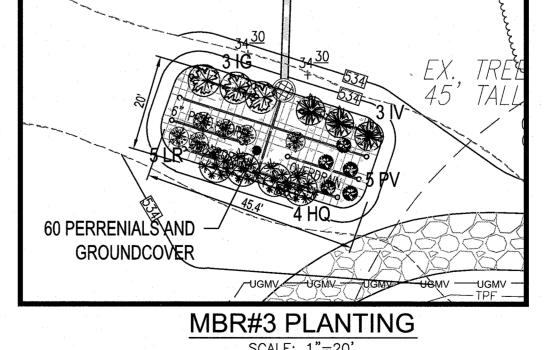
SEE APPENDIX B.4.C



SCALE: 1"=20'



BIORETENTION AREAS ARE TO BE PLANTED BASED ON A MINIMUM DENSITY OF 1000 STEMS PER PLANTED ACRE (0.0227 STEMS PER SQUARE FOOT).



SCALE: 1"=20'

Appendix A. Landscaping Guidance for Stormwater BMPs Specific Landscaping Criteria Table A.4 Commonly Used Species for Bioretention Areas Rottlebrush Ruckeye Supatorium pernur Joe Pye Weed Scirpus pungens Witch Hazel Three Square Bulrush Vaccinium corymbosum Iris versicolor Highbush Blueberry Blue Flag Lobelia cardinalis Cardinal Flower Ilex verticillat Panicum virgatun Viburum dentan Dichanthelium scond Broom Panic Grass Rudbeckia laciniata Tall Coneflower Scirpus cyperinu. Note 1: For more options on plant selection for bioretention, consult Bioretention Manual (ETAB, 1993) or the Design of Stormwater Filtering Systems (Claytor and Schneler, 1997). 3. NO TREES SHALL BE PLANTED WITHIN A MICRO-BIORETENTION FACILITY. USE

1. TABLE A.4 IS TAKEN FROM THE "2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II - APPENDIX A. 2. CONTRACTOR SHALL BE FAMILIAR WITH APPENDIX B.4.C. CONSTRUCTION SPECIFICATIONS AND TABLE B.4.1 MATERIAL SPECFICAITIONS. IN ADDITION THE "2000 MARYLAND STORMWATER DESIGN MANUAL - VOLUME II - APPENDIX A OFFERS ADDITIONAL HELPFUL INFORMATION.

ONLY SHRUB OR HERBACEOUS SPECIES. 4. ABOVE TABLE A.4. IS FOR INFORMATIONAL PURPOSES ONLY. LANDSCAPE CONTRACTOR SHALL INSTALL PLANTINGS SPECIFIED OR USE APPROVED EQUAL SPECIES WHICH ARE TOLERANT TO FLUCTUATING WATER LEVELS.

5. PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO

INSTALL DURING THE CONSTRUCTION OF THIS FINAL PLAN.

"MICRO-BIORETENTION/RAINGARDEN" PLANTING SCHEDULE NOTES:

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

BIORETENTION PLANTING SCHEDULE (SHRUB/ORNIMENTAL GRASSES)

BIORETENTION PERENNIALS/GROUNDCOVER PLANTING SCHEDULE

SIZE

GALLON

GALLON

GALLON

1 GAL.

" POT AND BOTTOM OF MBR,
MIX ALL VARIETIES IN A
NATURALIZED RANDOM

PLANT IN GROUPS OF NO LESS THAN 9 PLANT PER CLUMP

PLANTINGS PROVIDED

REMARKS

1000 STEMS PER PLANTED ACRE (.0227 STEMS PER SQUARE FOOT). ABOVE PLANTING RATIOS ARE TO BE APPLIED TO THE AREAS PROVIDED IN THE ESDV SUMMARY. 6. FILTER AREA SHALL BE 50% COVERED BY PLANTINGS AT FULL GROWTH

LEGEND/KEY QTY BOTANICAL NAME/COMMON NAME

INKBERRY HOLLEY

ILEX GLABRA 'SHAMROCK'

HYDRANGEA QUERCIFOLIA

OAKLEAF HYDRANGEA

LEUCOTHEO RACEMOSA

PANICUM VIRGATUM SWITCHGRASS

BAPTISIA AUSTRALIS

MICRO-BIORETENTION PLANTING REQUIREMENTS

AREA

772

TOTALS: 122 1983 46 46 46

32 341

MBR #3 39 870

MBR #

ACORUS GRAMINEUS 'OGON'

GOLDEN VARIEGATED SWEET FLAG

REQUIRED

 $\{0.0227\}$

20

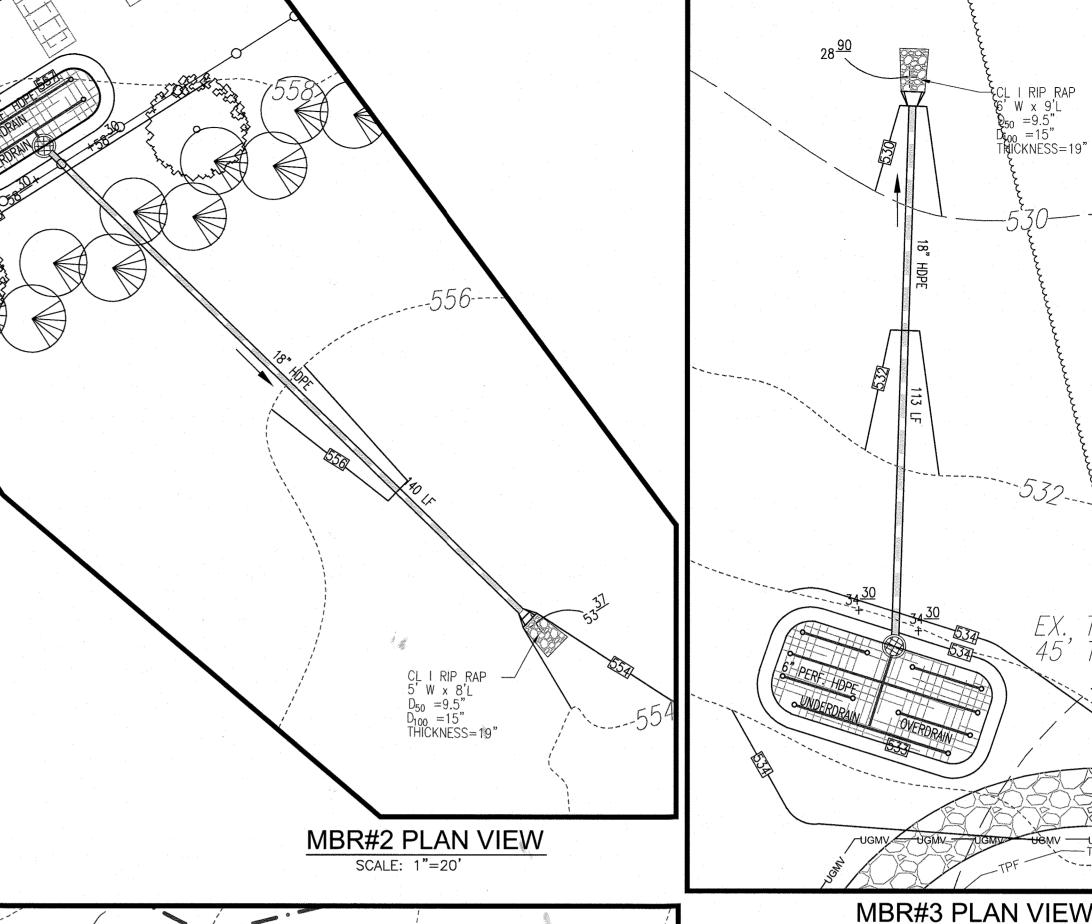
PROVIDED

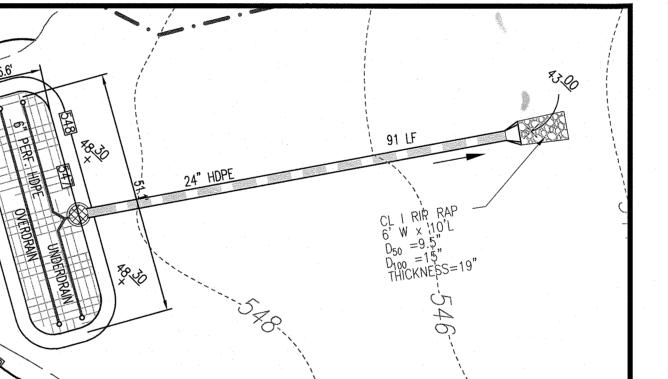
FETTERBUSH

LEGEND QTY BOTANICAL NAME/COMMON NAME

FALSE INDIGO

ITEA VIRGINICA 'HENRY'S GARNETT'





MBR#1 PLAN VIEW

SCALE: 1"=20'

PERRENIALS/GROUND

COVER PROVIDED

AG

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

OWNER METALMARK SOLAR, LLC. C/O STANDARD SOLÁR, INC. 530 GAITHER ROAD, SUITE 900 ROCKVILLE, MD 20850 PHONE: 301-944-5102

-UGMV ----UGMV -

-TPF -----TPF -

SITE DEVELOPMENT PLAN STORMWATER MANAGEMENT

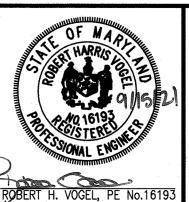
SCALE: 1"=20'

METALMARK SOLAR 700 SYKESVILLE RD SYKESVILLE, MD 21784 ZONED RC-DEC PARCEL 94 HOWARD COUNTY, MARYLAND AX MAP 9 BLOCK 3 STRICT

NOTES AND DETAILS

VOGEL ENGINEERING

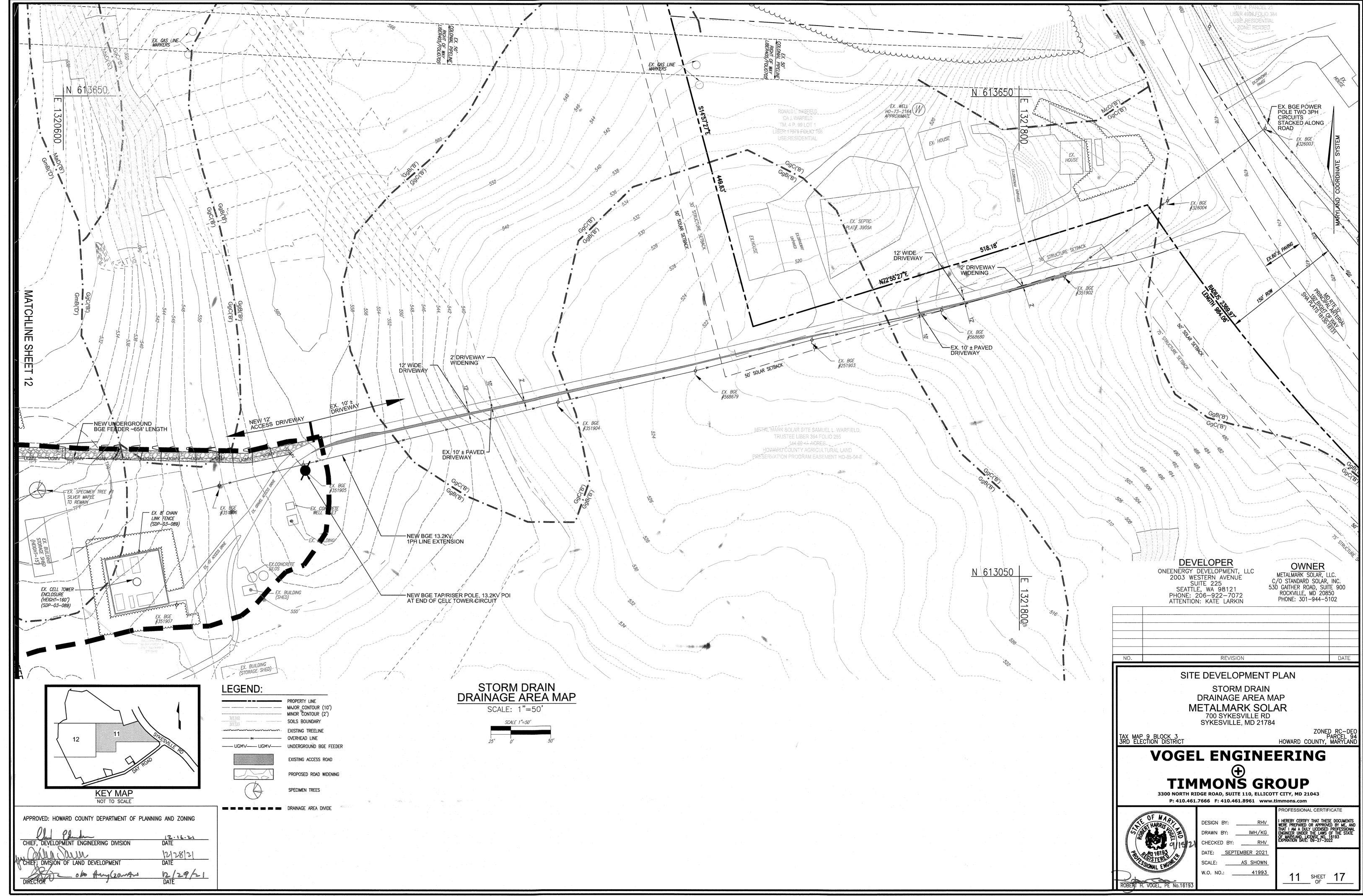
TIMMONS GROUP 3300 NORTH RIDGE ROAD, SUITE 110, ELLICOTT CITY, MD 21043 P: 410.461.7666 F: 410.461.8961 www.timmons.com

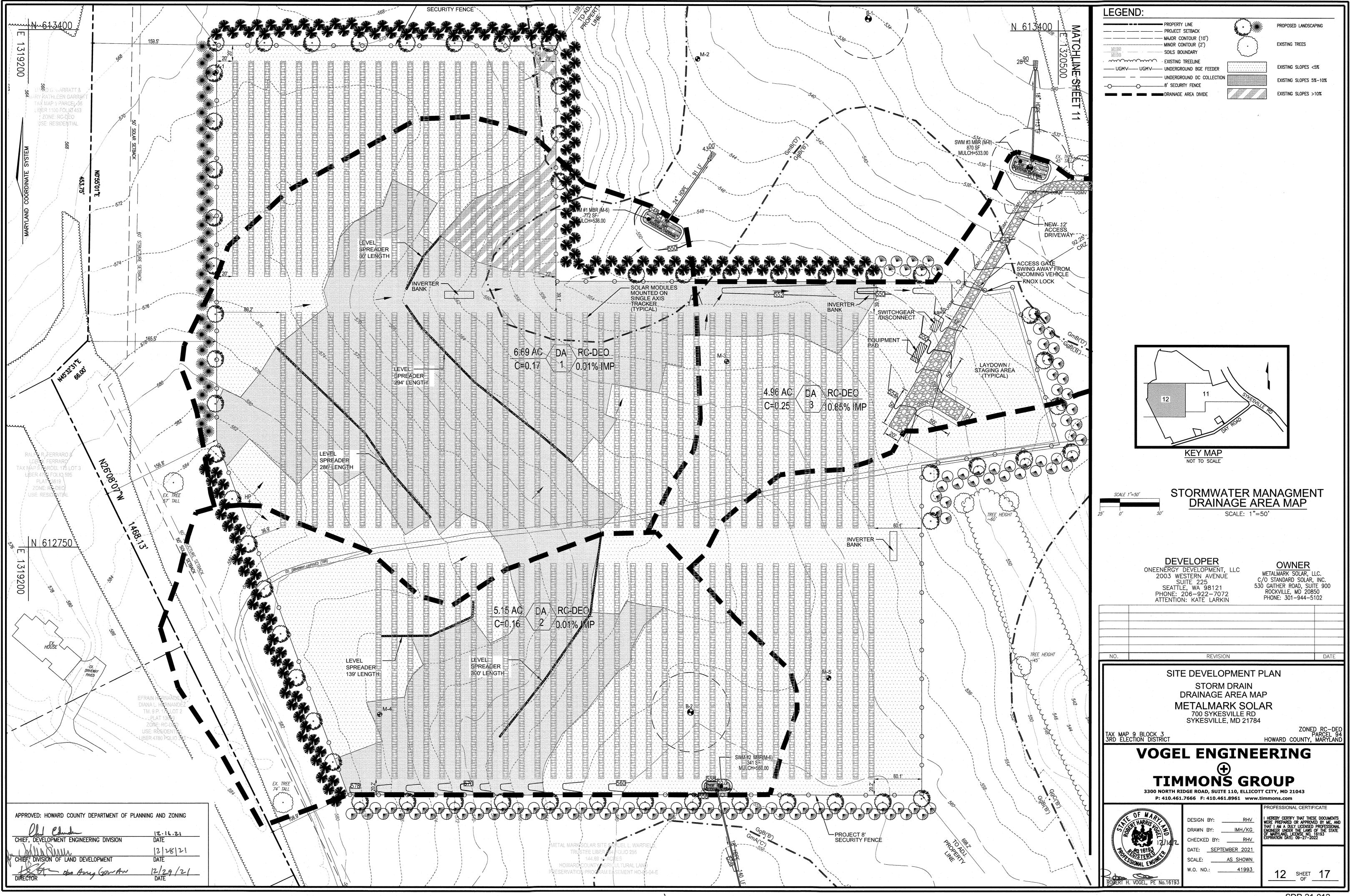


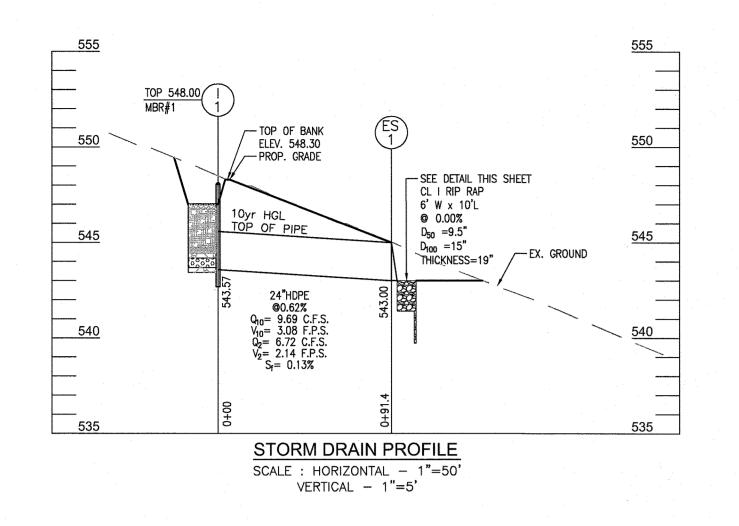
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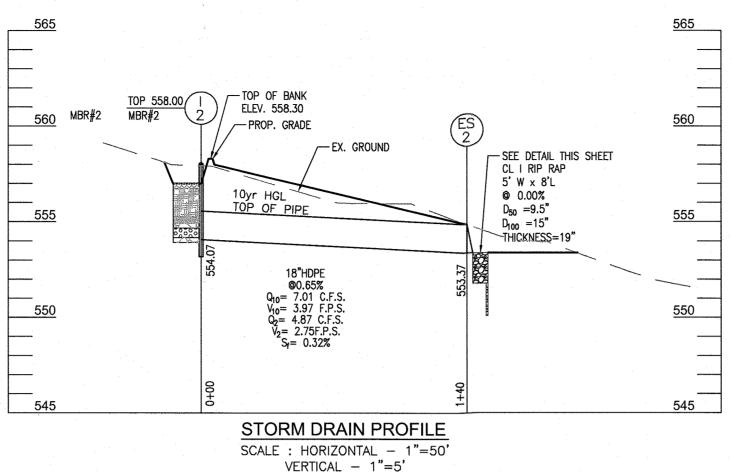
10 SHEET 17

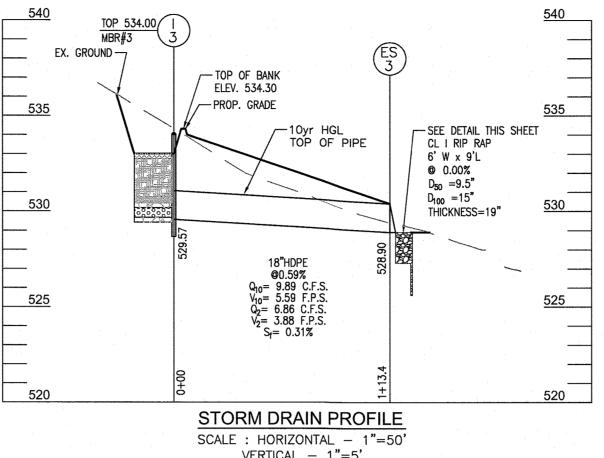
SDP-21-012

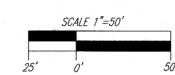


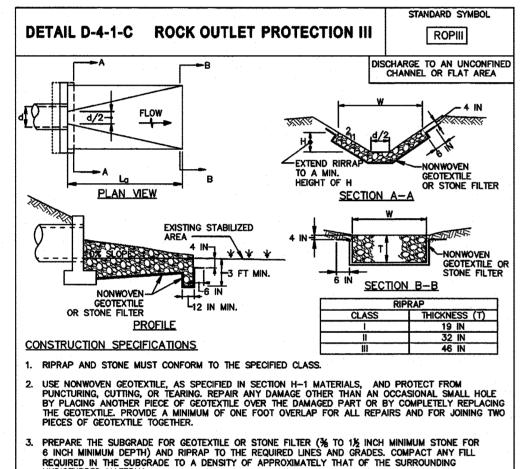












- 5. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (% TO 1½ INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- 4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RIPRAP.
- . CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY. . WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
- CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

ADS, Inc. Drainage Handbook

Specifications • 1-38

ADS FLARED END SECTION SPECIFICATION

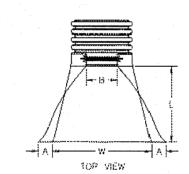
This specification describes 12- through 36-inch (300 to 900mm) ADS Flared End Sections for use in culvert and drainage outlet applications.

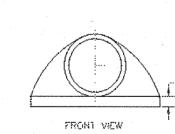
Requirements

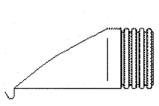
The ADS Flared End Section shall be high density polyethylene meeting ASTM D3350 minimum cell classification 213320C; contact manufacturer for additional cell classification information. When provided, the metal threaded fastening rod shall be stainless steel.

Installation shall be in accordance with ADS installation instructions and with those issued by state or local authorities. Contact your local ADS representative or visit www.ads-pipe.com for the latest installation

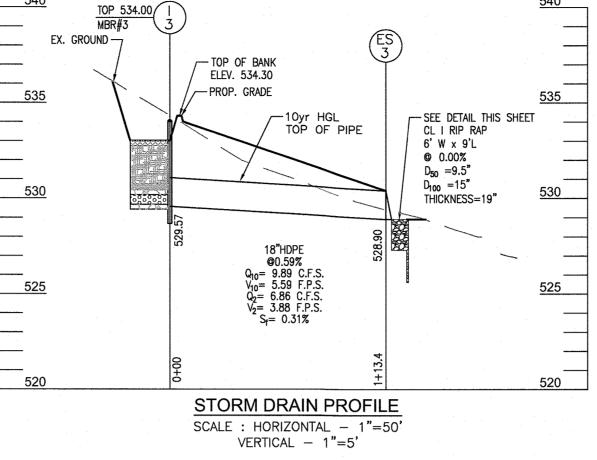
		PIPE DIAMETER, in (mm)									
Diameter	12	15	18	24	30	36					
jar (ਪਸ਼ਮ)	(300)	(375)	(450)	(600)	(750)	(900)					
A	6.5	6.5	7.5	7.5	7.5	7.5					
in (mm)	(165)	(165)	(191)	(191)	(191)	(191)					
В (max)	10.0	10.0	15.0	18.0	22.0	25.0					
is (mm)	(254)	(254)	(381)	(475)	(559)	(635)					
H	6.5	6.5	6.5	6.5	8.6	8.6					
ja {mm)	(165)	(165)	(165)	(165)	(218)	(218)					
1.	25.0	25.0	32.0	36.0	58.0	58.0					
ខែ (៣២)	(635)	(635)	(813)	(914)	(1473)	(1473					
W	29.0	29 . C	35,0	45,0	63,0	63,0					
ंस (तास)	(737)	(737)	(889)	(1143)	(1600)	(1600					







RIGHT SIDE VIEW



	PIPE	SCHE	DULE	
SIZE	PUBLIC/ PRIVATE	CLASS	LENGTH	
18"	PRIVATE	HDPE	289	
24"	PRIVATE	HDPE	91	

	STRUCTURE SCHEDULE										
STR#	TYPE	INV. IN	INV. OUT	*TOP ELEV	DETAIL	LOCATION	REMARKS				
I -1	30" DRAIN BASIN W/ DOME		543.57	548.00	NYLOPLAST	N 613160.63 E 13200	06.24 (1) PRIVATE				
F2	30" DRAIN BASIN W/ DOME		554.07	558.00	NYLOPLAST	N 612444.29 E 13200	69.06 (1) PRIVATE				
I -3	30" DRAIN BASIN W/ DOME		529.57	534.00	NYLOPLAST	N 613237.7 E 13204	67.21 (1) PRIVATE				
*	TOP ELEV. IS FLOW LINE OF D	RAIN BASIN V	VHICH IS BO	OTTOM OF DOM	E GRATE.						

	STRUCTURE SCHEDULE										
STR#	TYPE	INV. IN	INV. OUT	TOP OR UPPER/LOWER	DETAIL		LOCA	TION	REMARKS		
ES-1	24" HDPE		543.00	544.00	HDPE	N	613235.98	E 1320057.97	(2) PRIVATE		
ES-2	18" HDPE		553.37	554.37	HDPE	N	612308.20	E 1320101.92	(2) PRIVATE		
ES-3	18" HDPE		528.90	529.90	HDPE	N	613351.04	E 1320470.98	(2) PRIVATE		

(1) Coordinate for Proposed Structure = Centerline of Structure (2) Coordinate for End Section = Centerline of Pipe @ Downstream Face

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

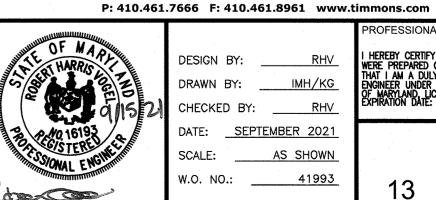
OWNER METALMARK SOLAR, LLC. C/O STANDARD SOLAR, INC. 530 GAITHER ROAD, SUITE 900 ROCKVILLE, MD 20850 PHONE: 301-944-5102

SITE DEVELOPMENT PLAN STORM DRAIN PROFILES METALMARK SOLAR 700 SYKESVILLE RD

SYKESVILLE, MD 21784 TAX MAP 9 BLOCK 3 3RD ELECTION DISTRICT

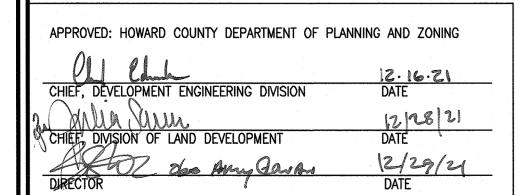
ZONED RC-DEO PARCEL 94 HOWARD COUNTY, MARYLAND **VOGEL ENGINEERING**

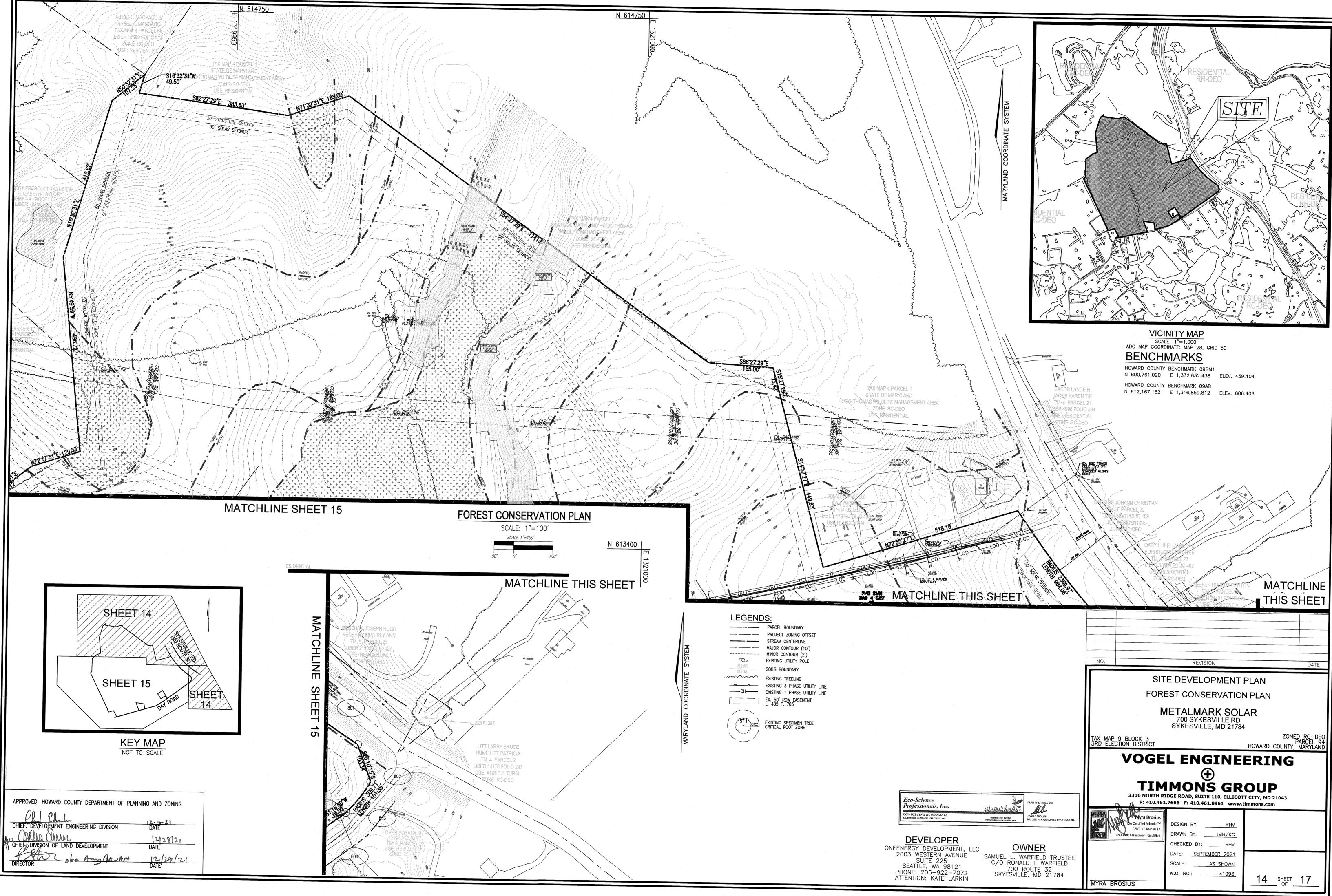
TIMMONS GROUP

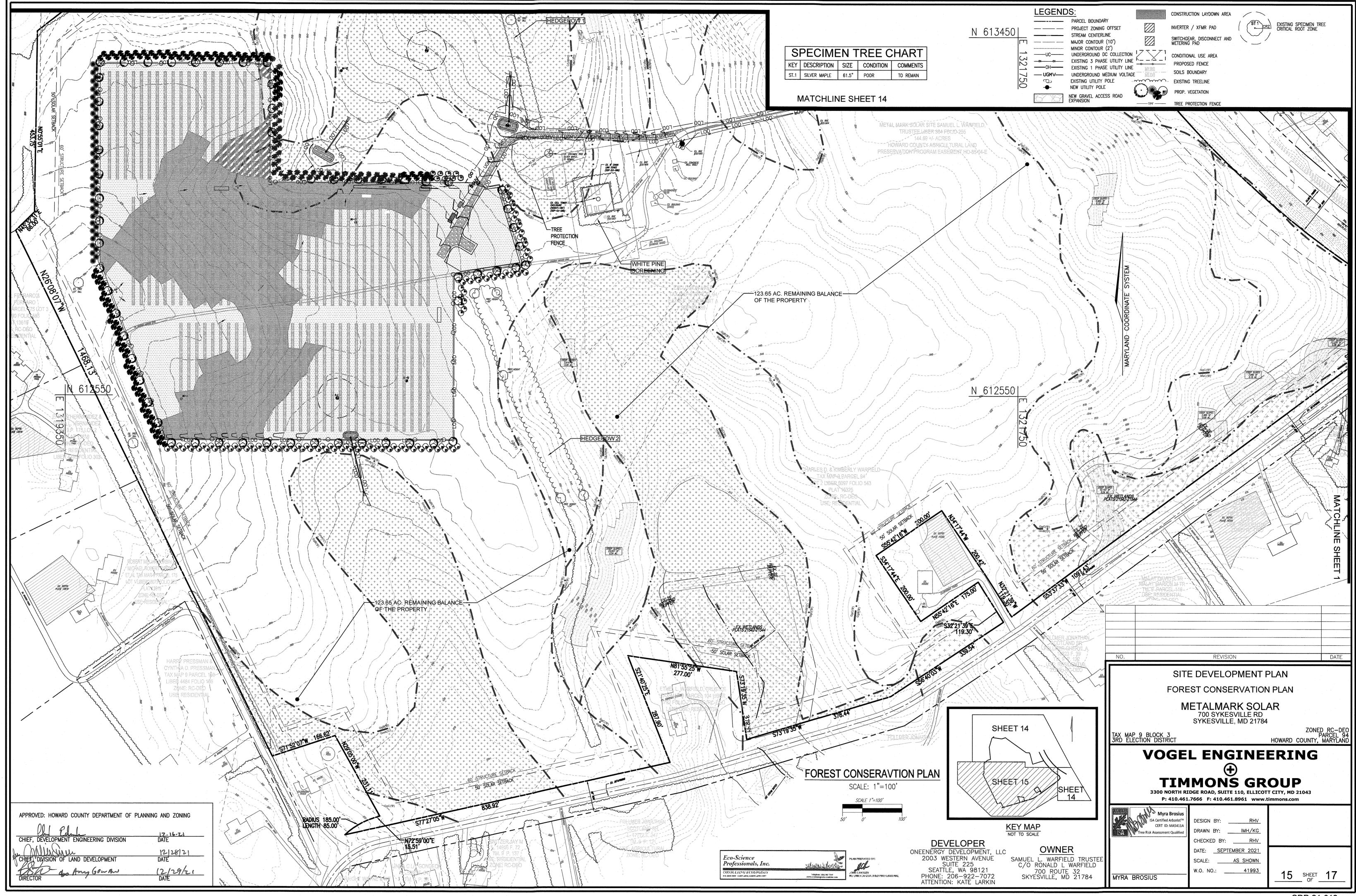


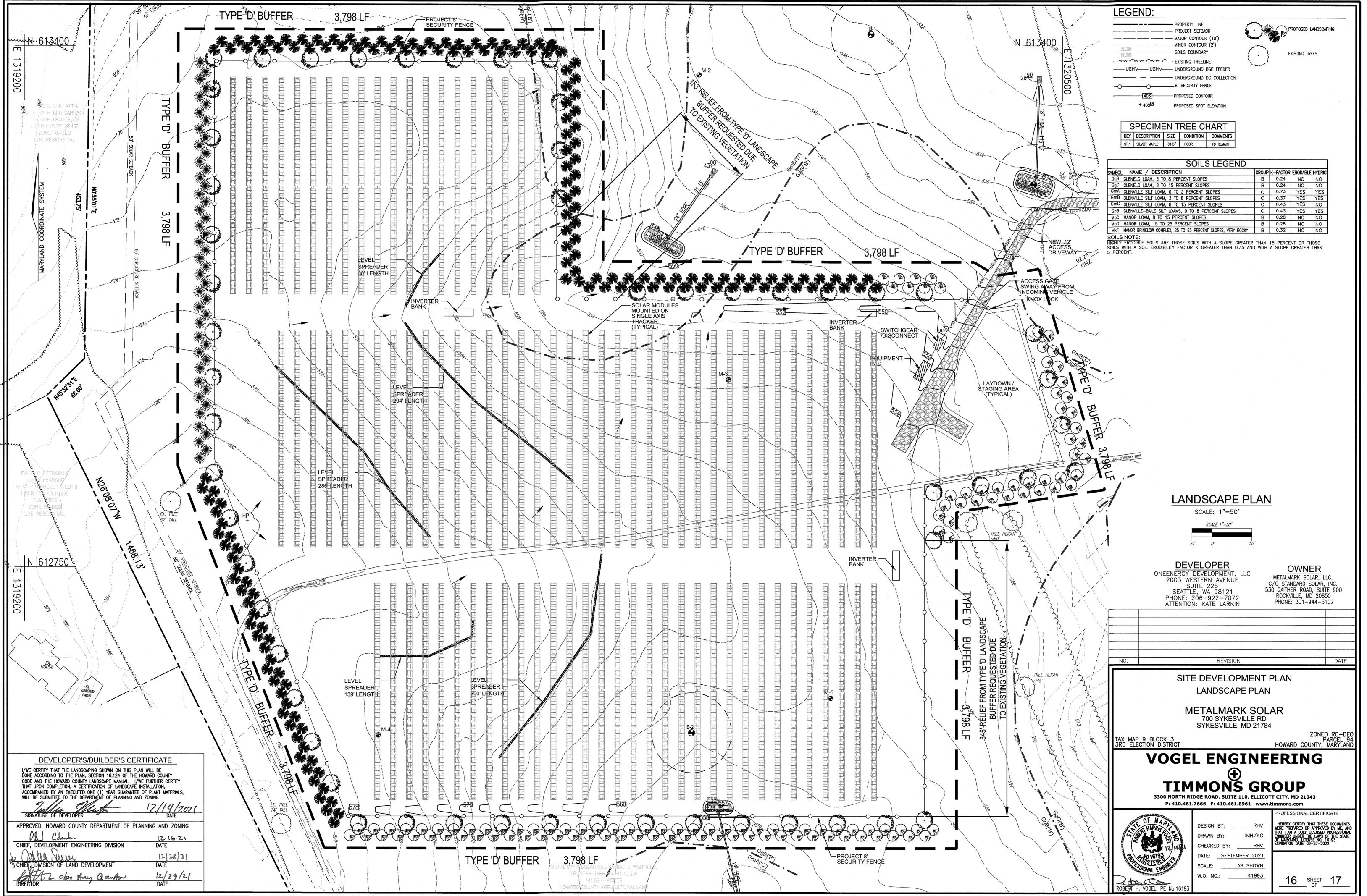
DESIGN BY: RHV DRAWN BY: CHECKED BY: DATE: SEPTEMBER 2021 SCALE: AS SHOWN W.O. NO.:

13 SHEET 17









GENERAL NOTES

WATERSHED NAME: PATAPSCO RIVER WATERSHED NUMBER: 02130908

A. GROSS SITE AREA: 144.69 AC. NET SITE AREA: 19.91 AC. B. AREA OF 100-YEAR FLOODPLAIN: 0.00 AC. DFIRM C. AREA OF WETLANDS AND BUFFERS(ONSITE): 0.15 AC.

AREA OF STREAM AND BUFFERS(ONSITE): 1.84 AC. 9.70 AC. D. AREA OF > 25% STEEP SLOPES: E. EXISTING FOREST: 0.00 AC. F. ZONED:

RC-DEO G. EXISTING USE: AGRICULTURE (19.91 AC.) H. PROPOSED USE: SOLAR PANEL FARM (19.91 AC.)

1. NO WETLANDS, STREAMS OF BUFFERS ARE PRESENT WITHIN OR IMMEDIATELY ADJACENT TO THE 20.5+/- ACRE PROJECT AREA. WATER RESOURCES ARE PRESENT ON THE BALANCE OF THE WARFIELD PROPERTY. THE PROJECT AREA AND THE OVERALL WARFIELD PROPERTY ARE LOCATED WITHIN THE USE I WATERSHED OF THE SOUTH BRANCH OF THE PATAPSCO RIVER (02-13-09).

NO 100 YEAR FLOODPLAIN IS PRESENT ON THE PROJECT AREA. NO RATE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED ON THE PROJECT AREA.

4. STEEP SLOPES ARE PRESENT ON THE PROJECT AREA. 5. NO HISTORIC ELEMENTS OR CEMETERIES ARE KNOWN TO OCCUR ON THE PROJECT AREA.

FOREST CONSERVATION WORKSHEET BASED ON COUNCIL BILL CB62-2019

FOREST CONSERVATION WORKSHEET FOR METALMARK SOLAR

A. B. C. D.		00-year Flood tions (Identify	•	· · · · · · · · · · · · · · · · · · ·			_)	A = B = C = D =	19. 0.0 0.0 19.
	d Use Categorit the number '	-	annronciato k	and use /limit	to apply ago on	ofens)			
11136	Resid. Rural LD	Resid. Rural MD	Resid. Suburban	Inst./ Linear	Retail/Ind./ Office	Mixed Use PUD	/ . #		
E. F.	Afforestation Reforestation			(Net Tract A		15% 15%)	E= -	3.0 3.0
Exis G. H.	Area of Fore	over est Cover with st above Affor st above Refo	estation Thre	eshold				G = 1 H = 1	0.0 0.0 0.0
Brea J. K.	ak Even Point Break Even I Forest Cleari		without Milig	ation				J = * K =	0.0
Proj L. M.		Clearing Forest to be Forest to be						L= 1	0.0 (0.
N. P. Q. R. S. T. U. V	Reforestation Credit for Re Total Refores Total Affores Total Refores 75% of Total Planting Req	n for Clearing n for Clearing lention above station Require tation Require station and Af Obligation (R suired Onsite t	above the Rebelow the Reforest ed forestation Retention + Plog meet 75%	eforestation T tation Thresh requirement fanting) Obligation	hreshold			N = P = Q = R = T = U = V = V = P = P = P = P = P = P = P = P	0.0 0.0 0.0 3.0 3.0 2.3
Plan W. X. Y. AA. BB. CC. DD.	Total Affores Remaining P Reforestation Reforestation Credit for Re Total Refores	ments Outsid g within Devel station Require station within n for Clearing n for Clearing tention above station Require station and Re	opment Site od Watershed f above the Re below the Re the Reforest	Watershed or Reforestat eforestation T eforestation T tation Thresh	hreshold hreshold			W= X= Y= Z= AA= BB= CC= DD=	0. 3.(0.0 0.0 0.0 0.0 3.(

THE FOREST CONSERVATION OBLIGATION REQUIRED PER SECTION 3.2.5 OF THE HOWARD COUNTY FOREST CONSERVATION MANUAL OF 3.0 ACRES SHALL MEET THE INTENT OF SECTION 16.117 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. FOREST CONSERVATION CONSERVATION WILL BE PROVIDED BY A PURCHASE IN AN OFFSITE FOREST BANK.

TOTAL FOREST CONSERVATION OBLIGATION OF THIS PROJECT TO BE FULFILLED BY: 1) THE PURCHASE OF 2.5 ACRES OF AFFORESTATION CREDIT IN THE

MILLERS MILL FOREST BANK; SDP-18-052. 2) THE PURCHASE OF 1.0 ACRES (1.0 / 2 = 0.5) OF RETENTION CREDIT IN THE MILLERS MILL FOREST BANK; SDP-18-052.

GENERAL NOTES

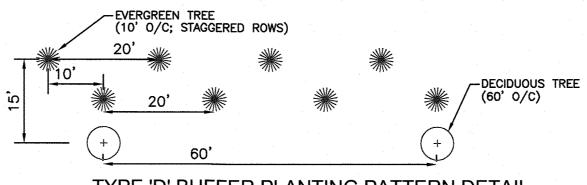
1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. A FINANCIAL SURETY IN THE AMOUNT OF \$66,000 FOR THE REQUIRED LANDSCAPING

(REQUIRED 55 SHADE TREES \$16,500, AND 330 EVERGREEN TREES \$49,500) SHALL BE POSTED WITH THE FINAL DEVELOPERS AGREEMENT. 2. IN A LETTER AND PLAN PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED AUGUST 23, 2019 MR. JOHN CANOLES IDENTIFIED THE ONSITE FOREST, WETLANDS AND

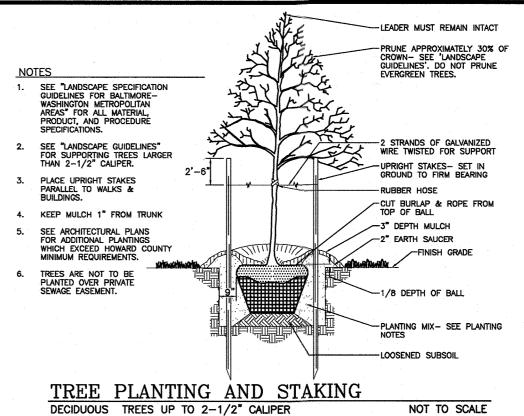
- MR. CANOLES IDENTIFIED ONE (1) SPECIMEN TREE. NO SPECIMEN TREES SHALL BE

3. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE WETLANDS, STREAM(S) OR THEIR BUFFERS, FOREST

CONSERVATION EASEMENT AREAS AND 100-YEAR FLOODPLAIN. 4. TYPE 'D' BUFFER TREES SHALL CONSIST OF A DOUBLE ROW OF OFFSET EVERGREEN TREES PLANTED AT INTERVALS OF 10' ON CENTER; ROWS OFFSET 15'; AND DECIDUOUS TREES PLANTED AT 60' ON CENTER.



TYPE 'D' BUFFER PLANTING PATTERN DETAIL NOT TO SCALE



3798

1:60 = 55

1:10 = 330

PERIMETER/FRONTAGE DESIGNATION

CREDIT FOR EXISTING VEGETATION

DESCRIBE BELOW IF NEEDED)
CREDIT FOR WALL, FENCE OR BERM
(YES, NO, LINEAR FEET
DESCRIBE BELOW IF NEEDED)

IUMBER OF PLANTS REQUIRED

SHRUBS NUMBER OF PLANTS PROVIDED

OTHER TREES (2:1 SUBSTITUTION)

EX. SPECIMEN TREES TO REMAIN

WITH HRD PLANTING SPECIFICATIONS.

DESCRIBE PLANT SUBSTITUTION CREDITS

LANDSCAPE SCHEDULE NOTES:

LANDSCAPE SCHEDULE, THE PLAN SHALL GOVERN.

SHRUBS (10:1 SUBSTITUTION)

EVERGREEN TREES

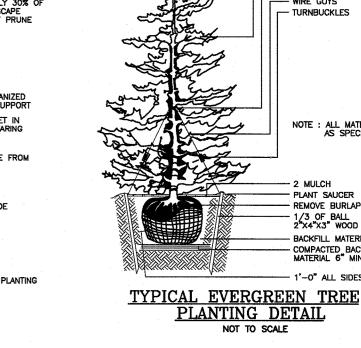
SHADE TREES EVERGREEN TREES

BELOW IF NEEDED

LANDSCAPE TYPE
LINEAR FEET OF ROADWAY

FRONTAGE/PERIMETER

(YES, NO, LINEAR FEET



LANDSCAPE NOTES SCHEDULE A PERIMETER LANDSCAPE EDGE

1. AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING, ANY DEVIATION FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE APPLICABLE PLANS.

- PRUNE AS DIRECTED

----- RUBBER HOSE

- TURNBUCKLES

- PLANT SAUCER

- 1'-0" ALL SIDES

- REMOVE BURLAP FROM TOP

- 1/3 OF BALL 2"X4"X3" WOOD STAKES - BACKFILL MATERIAL

2. THE FACILITY OPERATOR AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED. 3. SHOULD ANY TREE DESIGNATED FOR PRESERVATION FOR WHICH

LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD, AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE HOWARD COUNTY LANDSCAPE MANUAL.

4. PLANTINGS SHOWN HEREON ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL DURING THE CONSTRUCTION OF THE

5. SURETY FOR THE PROPOSED LANDSCAPING SHALL BE BASED ON THE NUMBER OF PLANTINGS REQUIRED.

-	-				
		PE	RIMETER LANDSCAPE EDGE LANDSCAPE SCHEDULE	=	
KEY	QUAN.		BOTANICAL NAME	SIZE	REM.
SHADE	=55				
AR	55		ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B
EVER	REEN=	330			
PS	48	**	PINUS STROBUS EASTERN WHITE PINE	6'-8' HGT.	B & B
GJ	160		THUJA PLICATA GIANT ARBORVITAE 'GREEN GIANT'	6'-8' HGT.	В&В
АН	122		ILEX OPACA AMERICAN HOLLY	6'-8' HGT.	В&В

1. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE MOST CURRENT AAN SPECIFICATIONS AND BE INSTALLED IN ACCORDANCE

2. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO DIGGING.

4. CONTRACTOR SHALL VERIFY PLANT QUANTITIES PRIOR TO BIDDING. IF PLAN DIFFERS FROM

TREES SHALL NOT BE PLANTED IN THE BOTTOM OF DRAINAGE SWALES.

3. FINAL LOCATION OF PLANT MATERIAL MAY NEED TO VARY TO MEET FINAL FIELD CONDITIONS.

NOTE:

- WITH PERMISSION FROM HOWARD COUNTY, PLANTINGS SPECIFIED HEREON MAY BE SUBSTITUTED WITH APPROVED SPECIES LISTED IN APPENDIX B & C OF THE HOWARD COUNTY LANDSCAPE MANUAL.

- CONDITIONAL USE APPROVED SPECIES:

- CYPRESS OCYPARIS LEYLAND / LEYLAND CYPRESS (5'-6' HGT.)

- ACER GINNALA / AMUR MAPLE (2 1/2"-3" CAL.)
- BETULA NIGRA HERITAGE / HERITAGE CLUMP BIRCH (2 1/2"-3 1/2" CAL.)

DEVELOPER OWNER ONEENERGY DEVELOPMENT, LLC METALMARK SOLAR, LLC. 2003 WESTERN AVENUE C/O STANDARD SOLAR, INC. SUITE 225 SEATTLE, WA 98121

530 GAITHER ROAD, SUITE 900 ROCKVILLE, MD 20850 PHONE: 206-922-7072 ATTENTION: KATE LARKIN PHONE: 301-944-5102 REVISION

SITE DEVELOPMENT PLAN FOREST CONSERVATION AND LANDSCAPE NOTES AND DETAILS

METALMARK SOLAR 700 SYKESVILLE RD

SYKESVILLE, MD 21784

ZONED RC-DEC 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



DESIGN BY: CHECKED BY: DATE: SEPTEMBER 2021 AS SHOWN SCALE: W.O. NO.:

17 SHEET 17

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING 12.18.51 CHIEF, DEVELOPMENT ENGINEERING DIVISION 12/28/21

DEVELOPER'S/BUILDER'S CERTIFICATE

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