### SHEET INDEX DESCRIPTION 1 COVER SHEET 2 OVERALL PLAN 3 SITE DEVELOPMENT PLAN 4 SITE DEVELOPMENT PLAN 5 SITE DEVELOPMENT PLAN 6 GRADING, SEDIMENT & EROSION CONTROL PLAN 7 GRADING, SEDIMENT & EROSION CONTROL PLAN 8 GRADING, SEDIMENT & EROSION CONTROL PLAN 9 SEDIMENT & EROSION CONTROL NOTES 10 | SEDIMENT & EROSION CONTROL DETAILS 11 STORMWATER MANAGEMENT PLAN 12 STORMWATER MANAGEMENT PLAN 13 STORMWATER MANAGEMENT PLAN 14 LANDSCAPE & FOREST CONSERVATION PLAN 15 LANDSCAPE & FOREST CONSERVATION PLAN 16 LANDSCAPE & FOREST CONSERVATION PLAN 17 FOREST CONSERVATION PLAN 18 FOREST CONSERVATION PLAN 19 LANDSCAPE NOTES AND DETAILS 20 FOREST CONSERVATION NOTES AND DETAILS AND SOILS MAP 21 SITE DETAILS

### **GENERAL NOTES**

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE

EASTERN PORTION OF THE SOLAR ARRAY, ALONG SO0'31'59"W. THIS WOULD EQUATE TO A BUFFER 953' IN LENGTH (TAKING INTO ACCOUNT PROPOSED CREDIT AREAS) FOR A

TOTAL OF 24 SHADE TREES AND 48 EVERGREENS FOR A TOTAL SURETY OF \$14,400.00.

4. A LANDSCAPE SURETY OF \$14,400.00 WILL BE POSTED AS PART OF THE DEVELOPER'S

DEVELOPER/BUILDER] LANDSCAPE PLAN WHICH REFLECTS CHANGES TO BUFFER TYPE ['C'

BUFFER-ENTIRE LENGTH OF PERIMETER], PLANT LISTS, SURETY NOTES) AND ADDRESSING

SUBMITTED TO PLANNING AND ZONING WITHIN 2 WEEKS OF WAIVER APPROVAL (ON OR

6. IN ACCORDANCE WITH THE ATTACHED COMMENTS FROM THE DEVELOPMENT ENGINEERING

DIVISION DATED AUGUST 23, 2012, THE DEVELOPER AGREEMENTS FOR THE CONSTRUCTION

AND MAINTENANCE OF THE STORMWATER MANAGEMENT FACILITY SHALL BE EXECUTED BY

THE DEVELOPER AND RETURNED TO THE COUNTY (REAL ESTATE SERVICES DIVISION-DPW)

TO BE EXECUTED SIMULTANEOUSLY WITH THE SIGNING OF THE SUPPLEMENTAL PLAN FOR

THE WAIVER PETITION, WITHIN 45 DAYS OF WAIVER APPROVAL (ON OR BEFORE OCTOBER

AS THE SUBSTITUTION FOR A SITE DEVELOPMENT PLAN FOR DEVELOPMENT OF PHASE 1

FOR THIS PROJECT. ALL IMPROVEMENTS SHOWN ON THE SIGNED PLAN EXHIBIT MUST BE

8. THE WAIVER PETITION SHALL APPLY ONLY TO THE USES AND STRUCTURES DESCRIBED

9. COMPLIANCE WITH ALL APPLICABLE COUNTY AND STATE REGULATIONS INCLUDING ALL

NECESSARY PERMITS FROM THE DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS

(DILP) PRIOR TO INITIATING ANY ON-SITE DEVELOPMENT IS REQUIRED. THE SIGNATURE

1. WITHIN 60 DAYS OF WAIVER APPROVAL (ON OR BEFORE NOVEMBER 10,

2013), FOREST CONSERVATION OF PHASE 1 OF THE PROJECT WILL BE

ADDRESSED WITH THE SUBMISSION OF THE SITE DEVELOPMENT PLAN

(SDP-14-014) FOR PHASE 11 OF THE PROJECT WHICH WILL ADDRESS

FOREST CONSERVATION REQUIREMENTS FOR BOTH PHASE I AND II; OR

WITHIN 60 DAYS OF WAIVER APPROVAL ON OR BEFORE NOVEMBER 10, 2013)

\$78,212.00 (PAYABLE TO THE DIRECTOR OF FINANCE OF HOWARD COUNTY)

MUST BE MADE TO ADDRESS THE FOREST CONSERVATION OBLIGATION FOR

2. ALL REMAINING CONDITIONS (#2 THROUGH #9) OF WP-13-018 STILL APPLY.

25. WP-15-017. APPROVED ON 8/21/14, IS SUBJECT TO THE FOLLOWING

1. THE DEVELOPER MUST RESUBMIT SITE DEVELOPMENT PLAN ORIGINALS IN

ASSOCIATION WITH SDP-14-014 FOR SIGNATURE AND WITHIN 180 DAYS OF

2. SUBMIT SITE DEVELOPMENT MYLARS AND PAY ANY APPLICABLE FEE CHARGES

25. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS OR

26. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF

SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

27. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS

PART OF THE GRADING PERMIT IN THE AMOUNT OF \$49,500.00 FOR 50 SHADE

28. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE

HOWARD COUNTY CODE FOR FOREST CONSERVATION BY PRESERVING 8.86 ACRES

NON-CREDITED) AND BY EXCEEDING THE BREAK-EVEN POINT OF 6.44 ACRES. NO

30. STORMWATER MANAGEMENT FOR THIS PROJECT IS PROVIDED BY NON-ROOFTOP

DISCONNECT CREDITS AND SHEETFLOW TO CONSERVATION AREAS. STORMWATER

OF OF ON-SITE RETENTION (6.79 ACRES CREDITED AND 2.07 ACRES

FOREST CONSERVATION SURETY IS REQUIRED. ALL NON-CREDITED FOREST

CONSERVATION EASEMENT AREAS ARE LOCATED WITHIN THE FLOODPLAIN.

29. NO STEEP SLOPES, STREAMS, WETLANDS OR THEIR BUFFERS WILL BE

MANAGEMENT WILL BE PRIVATELY OWNED AND MAINTAINED.

THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR

THAT MAY HAVE OCCURED SINCE THE ORIGINAL APPROVAL DATE OF FEBRUARY 20.

AUGUST 19, 2014 (ON OR BEFORE FEBRUARY 15, 2015).

PHASE I OF DEVELOPMENT CONSISTING OF A LIMIT OF DISTURBANCE OF

APPROVED SUPPLEMENTAL PLAN EXHIBIT SHALL BE SUBMITTED FOR ANY PERMITS

AND AS SHOWN ON THE SIGNATURE APPROVED SUPPLEMENTAL PLAN EXHIBIT AND NOT TO

CONSTRUCTED PER THE SIGNATURE APPROVED SUPPLEMENTAL PLAN EXHIBIT.

ANY OTHER ACTIVITIES, USES, STRUCTURES OR ADDITIONS TO THIS PROPERTY.

5. A CORRECTED WAIVER EXHIBIT, (INCLUDING AN AMENDED AND SIGNED [BY THE

ALL ATTACHED COMMENTS FROM THE DIVISION OF LAND DEVELOPMENT SHALL BE

AGREEMENT FOR THIS PROJECT.

BEFORE SEPTEMBER 11, 2012).

12, 2012).

REQUIRED FROM DILP.

A FEE-IN-ILEU PAYMENT OF

9.46 ACRES.

FLOODPLAIN.

DISTURBED BY THIS PROJECT.

2. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.

3. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU

LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

4. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.

OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT

5. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY PREPARED BY VIRGINIA RESOURCE MAPPING, INC. DATED JANUARY 2005, AND WAS SUPPLEMENTED BY FIELD RUN TOPOGRAPHIC SURVEY PREPARED BY PATTON HARRIS RUST AND ASSOCIATES IN 2005.

THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY PATTON HARRIS RUST AND ASSOCIATES DATED FEBRUARY 13, 2004.

7. THE COORDINATES SHOWN HEREON ARE IN MARYLAND COORDINATE SYSTEM NAD 83/91 BASED ON THE HOWARD COUNTY GEODETIC CONTROL. HOWARD COUNTY 7. THE SIGNATURE APPROVED SUPPLEMENTAL PLAN (WAIVER PLAN EXHIBIT) SHALL SERVE MONUMENT NOS. 22AA AND 22BB WERE USED FOR THIS PROJECT.

8. WATER IS PRIVATE

### 9. SEWER IS PRIVATE

10. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.

11. THE 100-YEAR FLOODPLAIN SHOWN FOR THIS PROJECT IS BASED ON A FLOODPLAIN STUDY PREPARED BY PATTON HARRIS RUST AND ASSOCIATES, DATED 24. WP-14-020, APPROVED ON 9/11/13, IS SUBJECT TO THE FOLLOWING NOVEMBER 28, 2005, AND APPROVED BY HOWARD COUNTY ON AUGUST 17, 2006.. CONDITIONS:

12. THE WETLANDS SHOWN FOR THIS PROJECT ARE BASED ON A STUDY PREPARED BY McCARTHY AND ASSOCIATES, DATED MARCH 2005, AND UPDATED IN JULY OF

13. A NOISE STUDY FOR THIS PROJECT IS NOT REQUIRED.

14. SUBJECT PROPERTY IS ZONED RC-DEO PER THE 10/06/2013 COMPREHENSIVE ZONING PLAN.

15. ALL ELEVATIONS SHOWN ARE BASED NAVD88.

16. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND

17. ALL LIGHTING IS TO BE DIRECTED/REFLECTED AWAY FROM ADJACENT PUBLIC ROADS AND RESIDENTIALLY ZONED PROPERTIES, AND BE IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. LIGHT TRESPASS ONTO A PROPERTY IN THE RC ZONING DISTRICT IS LIMITED TO 0.1 FOOT CANDLES.

18. THERE ARE EXISTING PERMANENT STRUCTURES ONSITE (HOUSE AND GARAGE). OTHER THAN AN EXISTING SHED, ALL EXISTING STRUCTURES ARE TO REMAIN.

18. BASED ON AVAILABLE COUNTY MAPS AND RECORDS, THERE ARE NO HISTORIC STRUCTURES OR KNOWN CEMETERIES LOCATED ON THE SUBJECT PROPERTY.

19. FIFTY SEVEN (57) SPECIMEN TREES EXIST ON SITE. SEE SPECIMEN TREE CHART IN THE PLAN SHEET. NO SPECIMEN TREES WILL BE REMOVED WITH THIS

20. APPLICABLE DPZ FILE REFERENCES: BA-80-39E, BA-390-C, BA-13-012C (APPROVED 6/24/13), SP-05-19, F-08-24, WP-13-018, ECP-13-057, & WP-14-020.

21. A TRAFFIC STUDY FOR THIS PROJECT IS NOT REQUIRED.

22. CONDITIONAL USE NOTE: THE CONDITIONAL USE, BA-13-013C APPROVED ON 6/24/13. SHALL BE CONDUCTED IN CONFORMANCE WITH, SHALL APPLY ONLY TO THE CONDITIONAL USE PLAN AND PETITION SUBMITTED ON MARCH 27, 2013 AND TREES AND 230 EVERGREEN TREES. NOT TO ANY OTHER ACTIVITIES, USES, OR STRUCTURES ON THE PROPERTY.

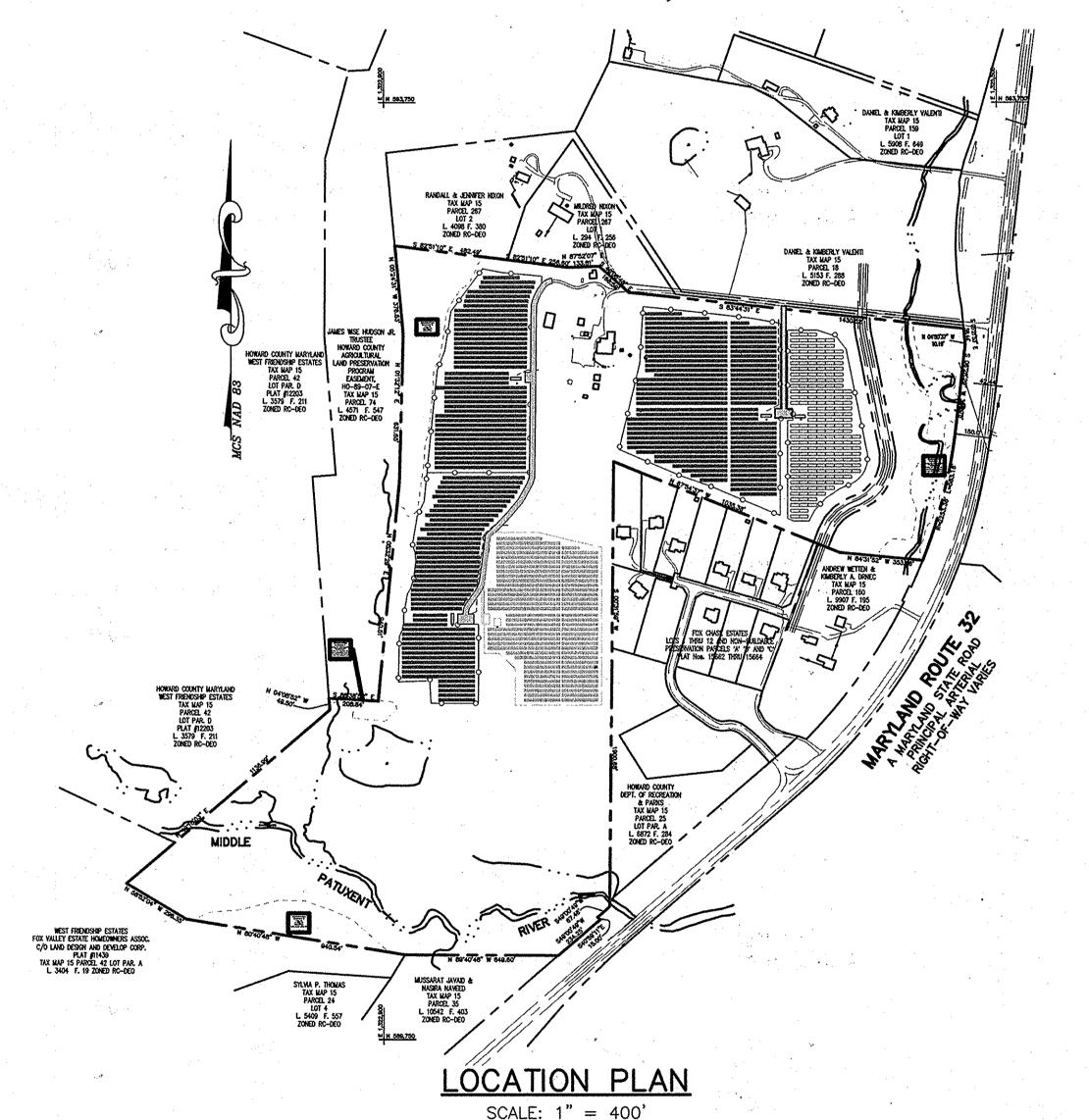
23. WP-13-018, APPROVED ON 8/28/12, IS SUBJECT TO THE FOLLOWING CONDITIONS:

1. WITHIN 1 YEAR OF WAIVER APPROVAL (ON OR BEFORE AUGUST 28, 2013), FOREST CONSERVATION OF PHASE 1 OF THE PROJECT WILL BE ADDRESSED WITH THE SUBMISSION OF THE SITE DEVELOPMENT PLAN FOR PHASE 2 OF THE PROJECT WHICH WILL ADDRESS FOREST CONSERVATION REQUIREMENTS FOR BOTH PHASE 1 AND 2: OR WITHIN 1 YEAR OF WAIVER APPROVAL (ON OR BEFORE AUGUST 28, 2013) A FEE-IN-LIEU PAYMENT OF \$78.212.00 (PAYABLE TO THE DIRECTOR OF FINANCE OF HOWARD COUNTY) MUST BE MADE TO ADDRESS THE FOREST CONSERVATION OBLIGATION FOR PHASE 1 OF DEVELOPMENT CONSISTING OF A LIMIT OF DISTURBANCE OF 9.46 ACRES (IF A SITE DEVELOPMENT PLAN FOR PHASE 2 IS NOT SUBMITTED WITHIN 1 YEAR). 2. THE LOD FOR PHASE 1 OF THE PROJECT MAY NOT EXCEED 9.46 ACRES AS INDICATED ON THE WAIVER EXHIBIT.

3. MINIMUM LANDSCAPE BUFFER (TYPE 'C') SHALL BE PROVIDED ALONG THE ENTIRE

# SITE DEVELOPMENT PLAN NIXON SOLAR PHASE II

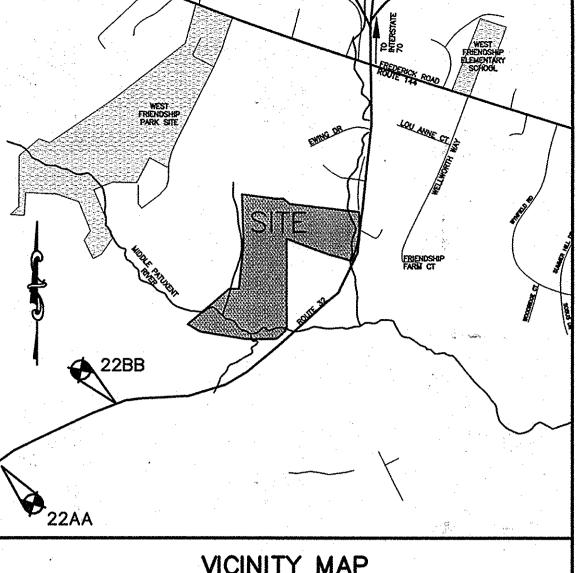
2800 NIXON'S FARM LANE PARCEL 90 3RD ELECTION DISTRICT HOWARD COUNTY, MARYLAND



### BENCHMARKS

HOWARD COUNTY SURVEY CONTROL: 22BB-ELEVATION 538.976 N 588,791.578 E 1,320,292.220 LOCATION IS 24' FROM FACE OF CURB AT THE INTERSECTION OF MD RT. 32 AND RIVER VALLEY

HOWARD COUNTY SURVEY CONTROL: 22AA ELEVATION 569.713 N 587,502.739 E 1,317,897,957 LOCATION IS 4' FROM EDGE OF MD RT. 32 PAVING, 0.45 MILES EAST OF PFEFFERKORN ROAD AND 0.25 MILES WEST OF IVORY ROAD.



### SITE ANALYSIS DATA SHEET

AREA OF SITE (PARCEL 90): 109.82 ACRES (4,783,641.67 SF)

33.65 ACRES (1,465,654 SF) LIMIT OF WORK:

5.84 ACRES (254,227 SF) LIMIT OF DISTURBANCE:

(THE LIMIT OF WORK IS THE EXTENTS OF THE PROJECT. THE LIMIT OF DISTURBANCE S THE LIMITS OF GRADING OPERATIONS ASSOCIATED WITH THE PROJECT. THE INSTALLATION OF THE SOLAR PANELS AND ASSOCIATED UNDERGROUND ELECTRICAL INVOLVES MINIMAL DISTURBANCE AND NO GRADING AS DETAILED ON THE SEDIMENT

EXISTING ZONING:

CONTROL PLANS.)

EXISTING SITE USE:

RC-DEO

COUNTRY CLUB (CASE #: 390-C, BA 80-39)

PROPOSED SITE USE: SOLAR PANEL FARM/COUNTRY CLUB

24.30 AC

AREA OF WETLANDS AND WETLAND BUFFERS:

AREA OF FLOODPLAIN AND

FLOODPLAIN BUFFERS: 31.01 AC

AREA OF FOREST: 26.47 AC

AREA OF STEEP SLOPES 15% OR GREATER: ±10.64 AC

AREA OF ERODIBLE SOILS:

EXISTING: ±108.56 ACRES

PROPOSED: ±107.88 ACRES

IMPERVIOUS AREA: EXISTING:

±1.26 ACRES (±54,886 SF) (INCLUDES PHASE I DEVELOPMENT)

PROPOSED: ±0.68 ACRES (±29,535 SF)

SETBACKS:

REQUIRED: FRONT: 50' REAR: 50' (SET PER BA-13-012C) SIDE: 50' (SET PER BA-13-012C)

PROVIDED:

FRONT: 50' REAR: 50' (SET PER BA-13-012C) SIDE: 50' (SET PER BA-13-012C) FROM PUBLIC STREET RIGHT-OF-WAY: 50'

PARCEL SIZE:

REQUIRED: 10 ACRES PROVIDED: ±109.81 ACRES

HEIGHT OF ARRAYS/EQUIPMENT: MAXIMUM ALLOWED: 20' PROVIDED: 12'

ESDv SUMMARY							
TREATMENT	ESDv REQUIRED	esdv provided					
DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)		6,313 CF					
SHEETFLOW TO CONSERVATION AREA (N-3)		1,664 CF					
TOTAL	7,784 CF	7,977 CF					

### ADDRESS CHART PARCEL NUMBER STREET ADDRESS 90 2800 NIXON'S FARM LANE - COUNTRY CLUB 2820 NIXON'S FARM LANE - SOLAR FARM 90

SUBDIVISION NAME 90 WEST FRIENDSHIP ZONING TAX MAP NO. ELECT. DIST CENSUS TRACT AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINE UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE . 12565 F. 273 | 16, 17, & 22 | RC-DEO | 6030.00 15 3

VICINITY MAP SCALE: 1"=2000" COPYRIGHT ADC THE MAP PEOPLE ADC MAP 18 GRIDS 4B, 4C, 5A, & 5B, PERMITTED USE NO. 3652

### PROJECT NARRATIVE

WITH THIS PLAN THE PROPERTY OWNER AND ENERGY DEVELOPER PROPOSE TO DEVELOP A COMMERCIAL SOLAR FACILITY IN ACCORDANCE WITH SECTION 131.N.52.

THE PROPOSED FACILITY IS LOCATED WITHIN THE RC ZONE, BUT IS NOT

LOCATED ON LAND THAT IS UNDER AN AGRICULTURAL PRESERVATION THE SOLAR FACILITY PROPOSED WITH THIS PLAN IS 33.65 AC IN SIZE, AND IS LOCATED ON A PROPERTY THAT IS 109.82 ACRES IN SIZE.

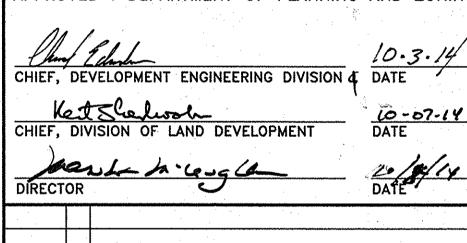
PROPERTY LINES. . NO STRUCTURES PART OF THE FACILITY ARE MORE THAN 20' IN HEIGHT

 THE LANDSCAPE BUFFERS THAT ARE PART OF THIS PLAN ARE AS APPROVED BY THE HEARING EXAMINER AS PART OF THE CONDITIONAL . THE PROPOSED SECURITY FENCING IS LOCATED BETWEEN THE

LANDSCAPE BUFFER AND THE SOLAR FACILITY. THE FACILITY SHALL BE REMOVED WITHIN ONE YEAR OF THE USE

 THE FACILITY SHALL BE CONSTRUCTED SO AS TO MINIMIZE GLARE AND REFLECTION ONTO ADJACENT PROPERTIES AND ROADWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING



DATE NO. REVISION DEVELOPER THE BITH GROUP

ATTN: RICARDO BETTS 113 WEST MONUMENT STREET BALTIMORE, MD 21201 T: 410-962-1188

2800 NIXONS FARM LANE, LLC ATTN: GEORGE BROWN 17500 FREDERICK ROAD MT AIRY, MD 21771 T: 410-461-7200

**PROJECT** 

NIXON SOLAR PHASE II (SOLAR FARM)

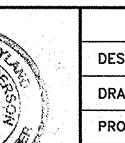
TAX MAP 15, PARCEL 90 ZONED RC-DEO GRID NO.S 16, 17, AND 22 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE

TITLE SHEET



L CERTIFICATION, I HEREBY CERTIFY TH

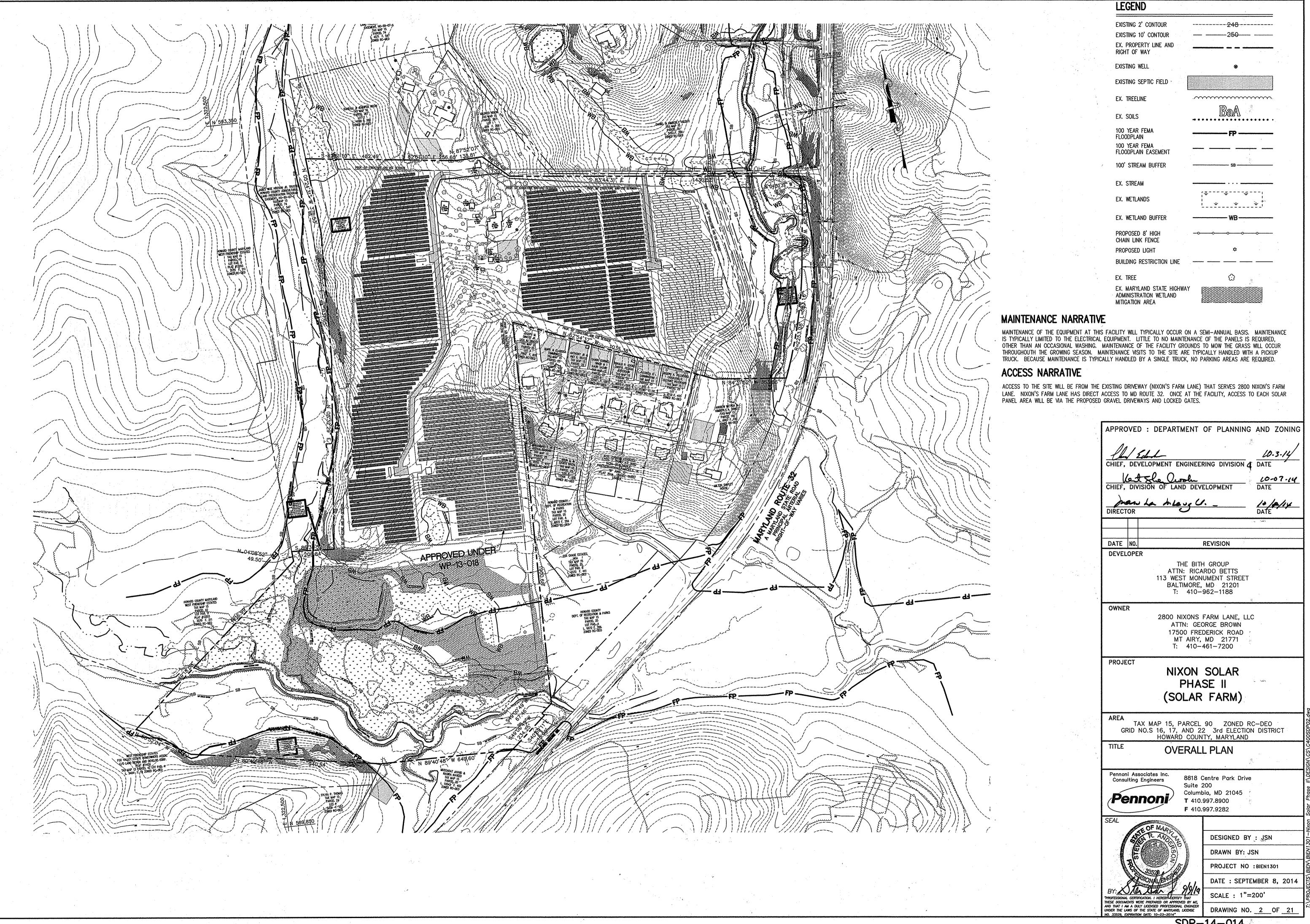
8818 Centre Park Drive Suite 200 Columbia, MD 21045 **T** 410.997.8900 F 410.997.9282



DESIGNED BY : JSN DRAWN BY: JSN PROJECT NO : BIEN 1301 DATE: SEPTEMBER 8, 2014 SCALE : AS SHOWN

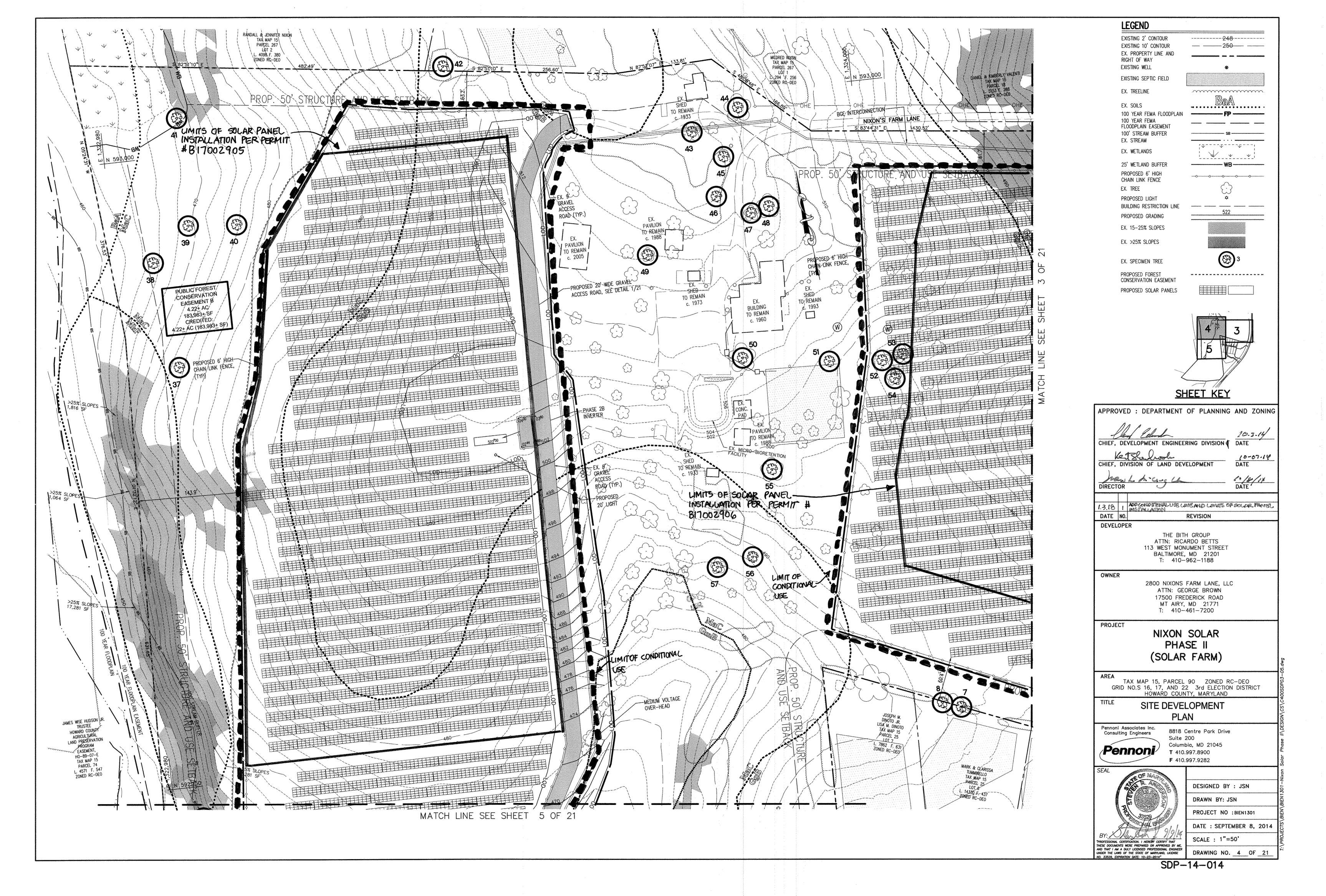
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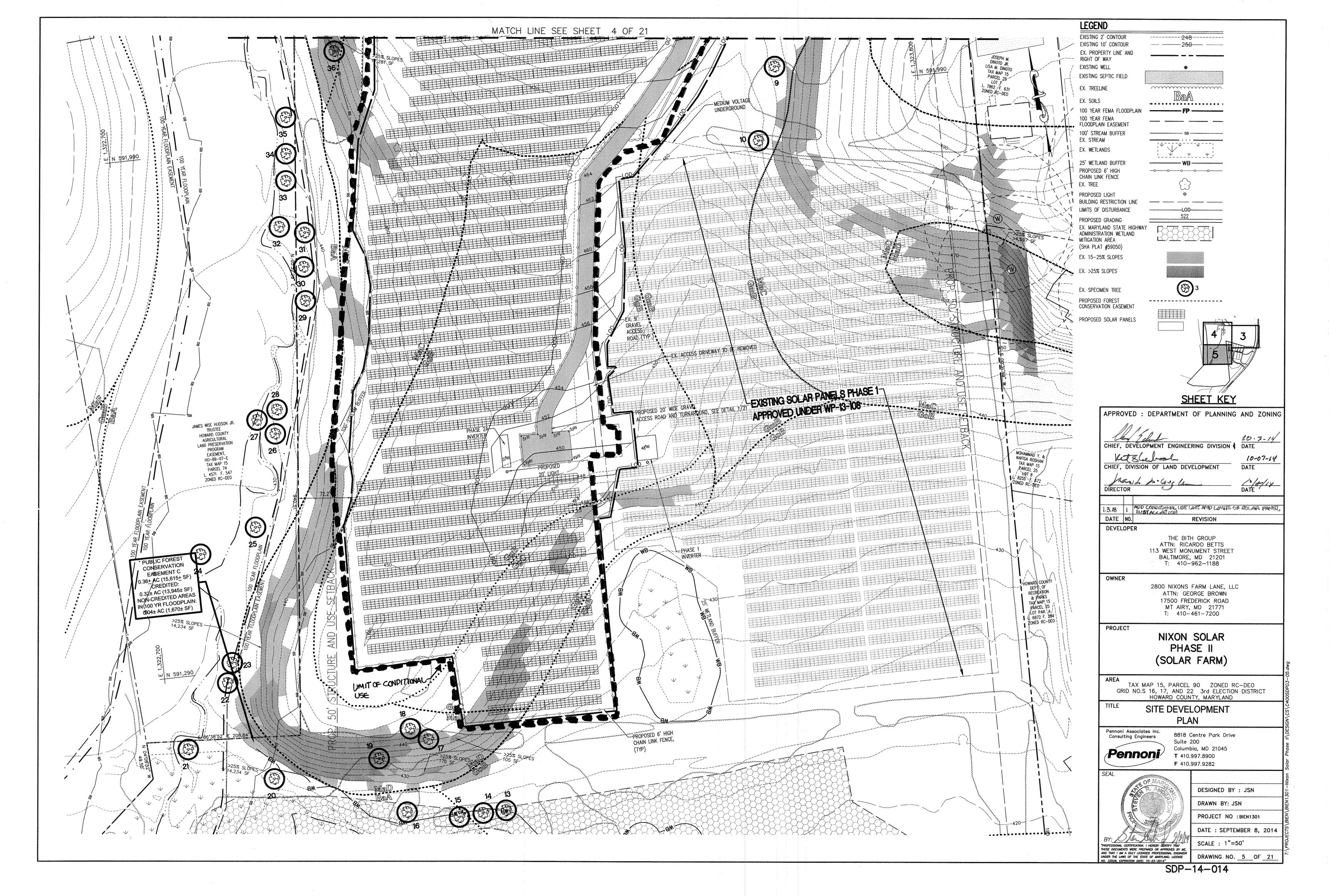
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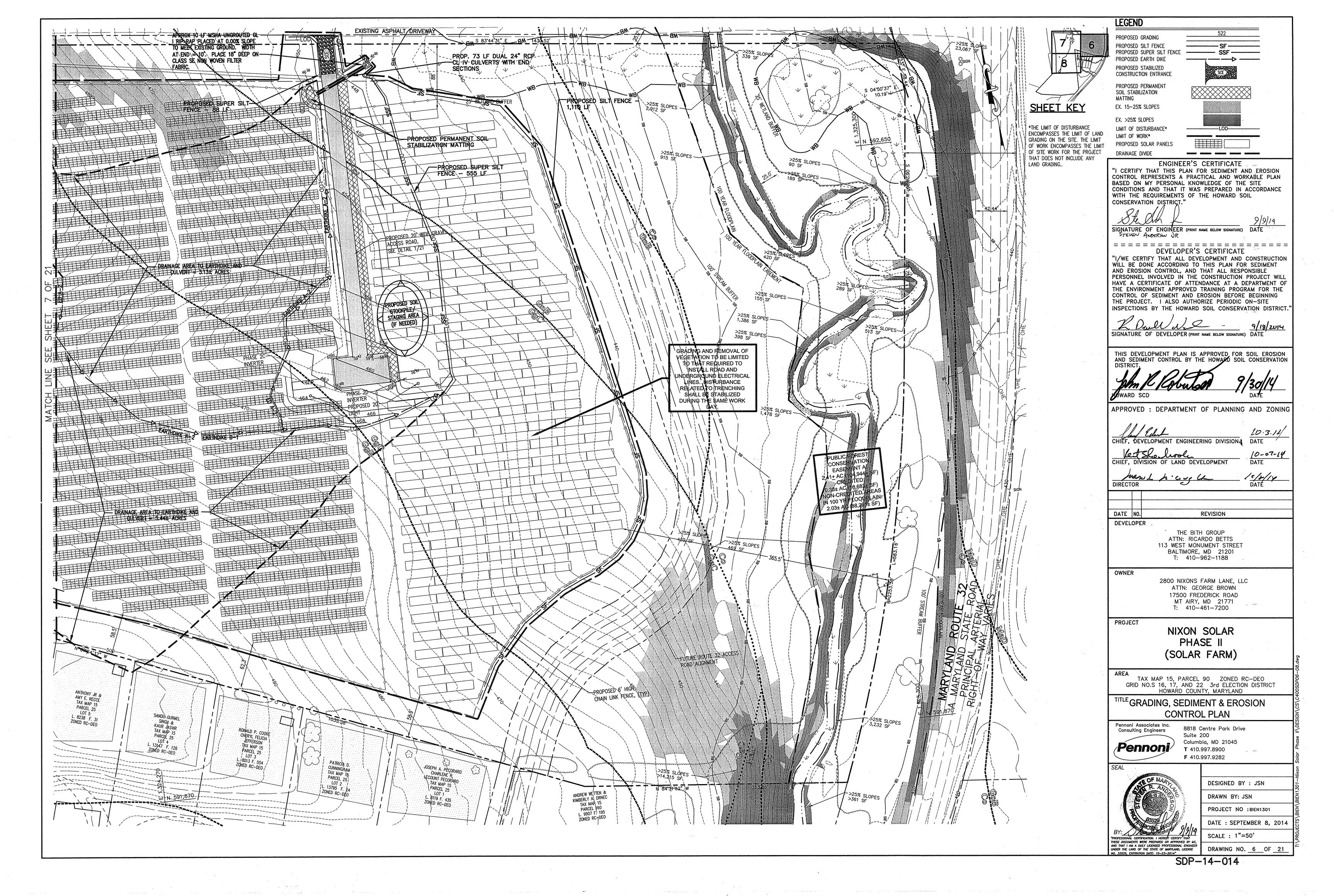


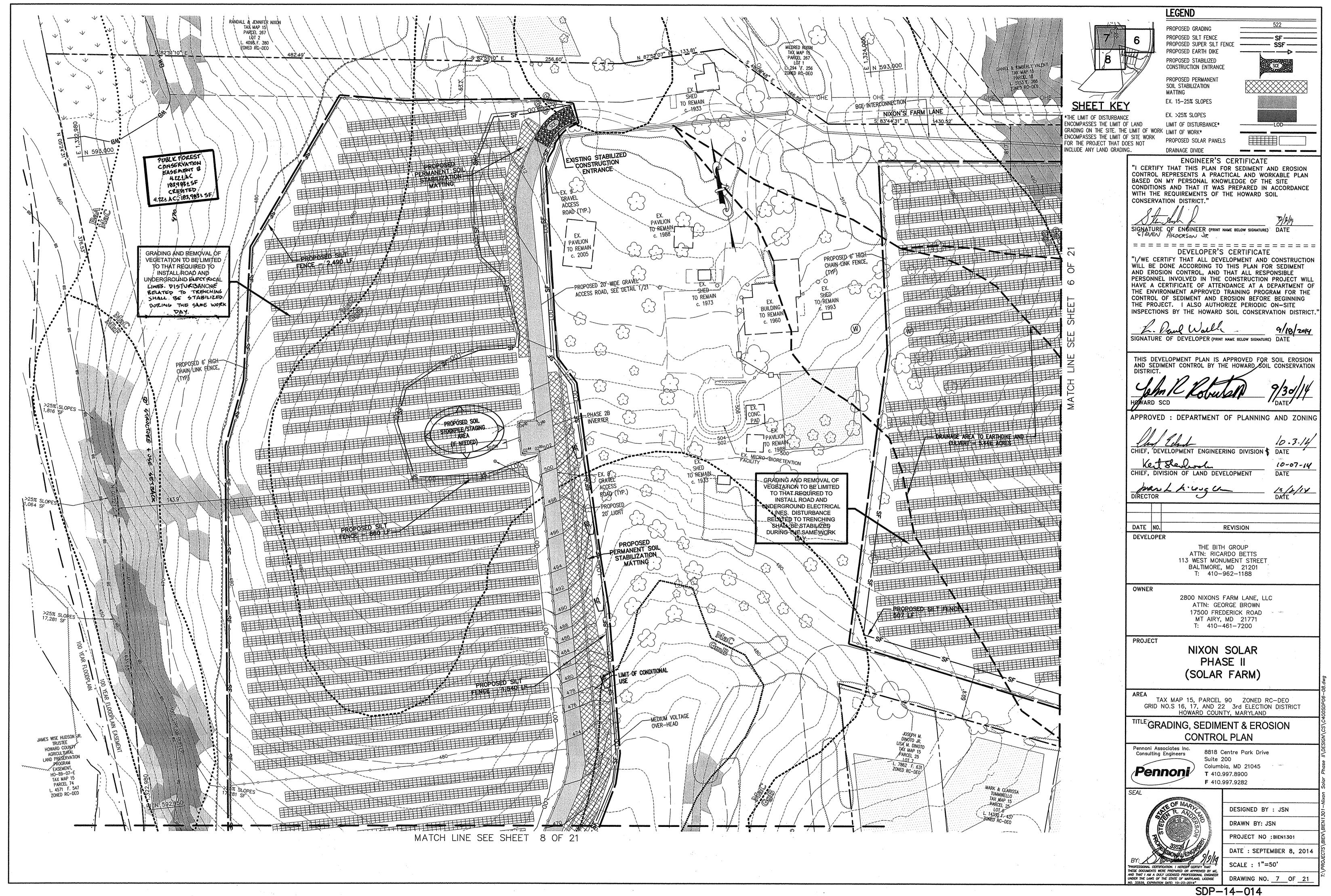
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### B-4-2 STANDARDS AND SPECIFICATIONS FOR

### SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

<u>PURPOSE</u>

THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION.

TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CONDITIONS WHERE PRACTICE APPLIES

WHERE VEGETATIVE STABILIZATION IS TO BE ESTABLISHED.

CRITERIA

#### A. SOIL PREPARATION

- 1. TEMPORARY STABILIZATION
- g. 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 EQUIPMENT, 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.
- b. APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLANS.
- c. INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- 2. PERMANENT STABILIZATION
- a. A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
- i. SOIL PH BETWEEN 6.0 AND 7.0.
- ii. SOLUBLE SALTS LESS THAN 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 A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION: IF LOVEGRASS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
- iv. SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
- v. SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
- b. APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE
- c. Graded areas must be maintained in a true and even grade as specified on the approved PLAN, THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3 TO 5 INCHES.
- d. APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A
- 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 PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE, LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRIABLE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

### B. TOPSOILING

- 1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH, SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW 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
- 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
- b. The soil material is so shallow that the rooting zone is not deep enough to support plants OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
- c. 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 DESIGN.
- 5. TOPSOIL SPECIFICATIONS: SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING CRITERIA:
- 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 SOIL SCIENTIST AND APPROVED 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
- 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 TOPSOIL.
- b. UNIFORMLY DISTRIBUTE TOPSOIL IN A 5 TO 8 INCH LAYER AND LIGHTLY COMPACT TO A MINIMUM THICKNESS OF 4 INCHES. SPREADING IS TO BE PERFORMED IN SUCH A MANNER THAT 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 FORMATION OF DEPRESSIONS OR WATER POCKETS.
- 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.
- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)
- 1. 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.
- 2. 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.

# B-4-3 STANDARDS AND SPECIFICATIONS

### DEFINITION

FOR SEEDING AND MULCHING

CONDITIONS WHERE PRACTICE APPLIES

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

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.

### SEEDING

- 1. SPECIFICATIONS
- g. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY, ALL SEED USED MUST HAVE BEEN 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 UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
- b. MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAWS.
- c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure CULTURE OF NITROGEN FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES, INOCULANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANTS AS DIRECTED ON THE PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 degrees fahrenheit can weaken bacteria and make the inoculant less effective.
- 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 PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.

#### 2. APPLICATION

- q. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
- i. INCORPORATE SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1. PERMANENT SEEDING TABLE B.3, OR SITE—SPECIFIC SEEDING SUMMARIES.
- II. APPLY SEED IN TWO DIRECTIONS. PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL
- b. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
- i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 INCH OF SOIL COVERING. SEEDBED MUST BE FIRM AFTER PLANTING.
- II. APPLY SEED IN TWO DIRECTIONS. PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- : HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
- i. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN: 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 ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
- iii. MIX SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
- iv. WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.

### B. MULCHING

- 1. MULCH MATERIALS (IN ORDER OF PREFERENCE)
- a. Straw consisting of thoroughly threshed wheat, Rye, Oat, or barley and reasonably bright in COLOR, STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: 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 PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
- I, WCFM IS TO BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
- ii. WCFM, INCLUDING DYE, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
- III. 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 MULCH MATERIAL MUST FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
- IV. WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
- v. WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 8.5, ASH CONTENT OF 1.6 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM. 2. APPLICATION
- a. APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
- b. WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS 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 MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
- c. WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED AT A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.

### 3. ANCHORING

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 PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:

- i. A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF 2 INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD FOLLOW THE CONTOUR.
- 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 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
- iii. Synthetic binders such as acrylic dlr (agro-tack), dca-70, petroset, terra tax II, terra tack AR OR OTHER APPROVED 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
- 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

### B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

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

<u>PURPOSE</u>

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 B.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 AND COMPLETED, THEN TABLE B.1 PLUS FERTILIZER AND LIME RATES MUST BE PUT ON THE PLAN.
- 2. FOR SITES HAVING SOIL TESTS PERFORMED, USE AND SHOW THE RECOMMENDED RATES BY THE TESTING AGENCY. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.
- 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

	Hardiness Zone (	from Figure B.3):	7A	***************************************	Fertilizer		
	Seed Mixture	(from Table B.1):	**************************************	Rate	Lime Rate		
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	(10-20-20)		
	ANNUAL RYEGRASS	40	FEB 15 TO APR 30; AUG 15 TO NOV 30	0.5	436 lb/ac 2 ton (10 lb/1000 sf) (90 lb/1		
	BARLEY	96	FEB 15 TO APR 30; AUG 15 TO NOV 30	1.0		2 tons/ac	
	OATS	72	FEB 15 TO APR 30; AUG 15 TO NOV 30	1.0		(90 lb/1000 sf)	
	PEARL MILLET	20	MAY 1 TO AUG 14	0.5			

### B-4-5 STANDARDS AND SPECIFICATIONS

### FOR PERMANENT STABILIZATION

### DEFINITION

TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION.

TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES

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

### CRITERIA

### 1. GENERAL USE

A. SEED MIXTURES

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

### 2. TURFGRASS MIXTURES

- 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 ON THE PLAN.
- I. KENTUCKY BLUEGRASS: FULL SUN MIXTURE: FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. TIRRIGATION 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 CULTIVARS 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 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 LINE

c. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES

WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO 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)

- d. 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 11/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL POSE NO DIFFICULTY.
- e. 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.

### PERMANENT SEEDING SUMMARY

	diness Zone (from F d Mixture (from Tab	<b>*</b>	7A			Fertilizer Rate (10-20-20)	•	Lime Rate	W
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K <sub>2</sub> 0	Line Nate	
8	TALL FESCUE	1. 100	FEB 15-APR 30; AUG 15-OCT 31*	1/4 - 1/2 in					_
9	TALL FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	60 40	FEB 15-APR 30; AUG 15-OCT 31*	1/4 - 1/2 in	45 pounds per acre (1.0 lb/ 1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 st)	2)
11	Creeping red fescue Chewings fescue Kentucky Bluegrass	30	FEB 15-APR 30; AUG 15-OCT 31*	1/4 - 1/2 in				1	=

\* FOR MAY 1 TO AUGUST 14, PLANT WITH NURSE CROP OF PEARL MILLET BASED ON 5% OF THE PERMANENT SEED MIX APPLICATION RATE.

B. SOD: TO PROVIDE QUICK COVER ON DISTURBED AREAS (2:1 GRADE OR FLATTER).

### 1. GENERAL SPECIFICATIONS

- 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 EXCLUDE TOP GROWTH AND THATCH, BROKEN PADS AND TORN 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
- d. SOD MUST NOT BE HARVESTED OR TRANSPLANTED WHEN MOISTURE CONTENT (EXCESSIVELY DRY OR WET) MAY ADVERSELY AFFECT ITS SURVIVAL.
- e. SOD MUST BE HARVESTED, 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.

#### 2. SOD INSTALLATION

- a. DURING PERIODS OF EXCESSIVELY HIGH TEMPERATURE OR IN AREAS HAVING DRY SUBSOIL, LIGH IRRIGATE THE SUBSOIL IMMEDIATELY PRIOR TO LAYING THE SOD.
- b. LAY THE FIRST ROW OF SOD IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL 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 THE 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 HOURS.

## 3. SOD MAINTENANCE

HEAT OF THE DAY TO PREVENT WILTING.

- 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
- b. AFTER THE FIRST WEEK, SOD WATERING IS REQUIRED AS NECESSARY TO MAINTAIN ADEQUATE MOISTURE
- c. DO NOT MOW UNTIL THE SOD IS FIRMLY ROOTED. NO MORE THAN 1/3 OF THE GRASS LEAF MUST BE REMOVED BY THE INITIAL CUTTING OR SUBSEQUENT CUTTINGS. MAINTAIN A GRASS HEIGHT OF AT LEAST 3 INCHES UNLESS OTHERWISE SPECIFIED.

ENGINEER'S CERTIFICATE "I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Sty Sul J		9/9/14	
SIGNATURE OF ENGINEER STEVEN ANOTESM DR	(PRINT NAME BELOW SIGNATURE)	DATE	

DEVELOPER'S CERTIFICATE I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL

HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF

THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE

CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING

INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT 9/18/2014 SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE). DATE

THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

HØWARD SCD APPROVED: DEPARTMENT OF PLANNING AND ZONING

		•
	CHIEF, DEVELOPMENT ENGINEERING DIVISION	10-3-14
HTLY	CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
	Kentshalwoh	10-07-14

- Keil Kaleroh

DATE NO. REVISION

DEVELOPER

ATTN: RICARDO BETTS 113 WEST MONUMENT STREET BALTIMORE, MD 21201 T: 410-962-1188

OWNER

2800 NIXONS FARM LANE, LLC ATTN: GEORGE BROWN 17500 FREDERICK ROAD MT AIRY, MD 21771 T: 410-461-7200

THE BITH GROUP

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

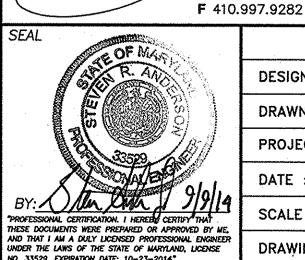
TAX MAP 15, PARCEL 90 ZONED RC-DEO GRID NO.S 16, 17, AND 22 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SEDIMENT & EROSION



TITLE

8818 Centre Park Drive Suite 200 Columbia, MD 21045 T 410.997.8900



DATE: SEPTEMBER 8, 2014 SCALE : AS SHOWN

DRAWING NO. 9 OF 21

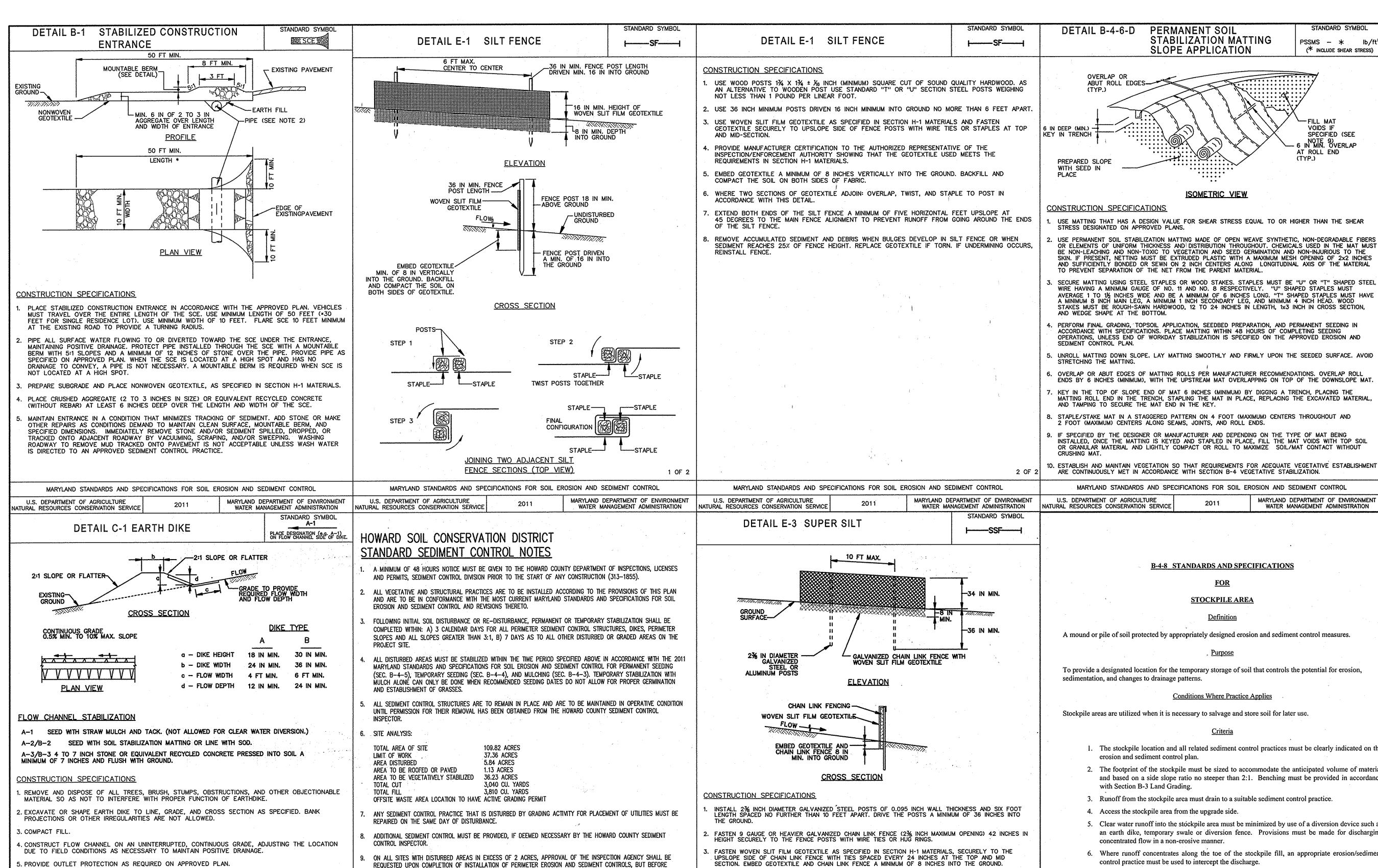
PROJECT NO : BIEN1301

DESIGNED BY : JSN

DRAWN BY: JSN

SDP-14-014

DATE



WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES,

6. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF

PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT

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.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION

FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.

GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.

THE SUPER SILT FENCE.

U.S. DEPARTMENT OF AGRICULTURE

NATURAL RESOURCES CONSERVATION SERVICE

ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE

MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.

APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.

THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

1. CONDUCT A PRE-CONSTRUCTION MEETING WITH COUNTY INSPECTOR. (1 DAY)

6. INSTALL LANDSCAPING AND STABILIZE ALL DISTURBED AREAS. (2 WEEKS)

SEQUENCE OF CONSTRUCTION

2. OBTAIN GRADING PERMIT. (1 DAY)

PERMANENT SEEDING NOTES. (2 DAYS)

REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS. BUT BEFORE

TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE

11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN

12. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF

20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE

ENFORCEMENT AUTHORITY. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY, NO MORE

4. UPON APPROVAL OF PERIMETER CONTROL INSTALLATION BY COUNTY INSPECTOR, BEGIN ROAD CONSTRUCTION. (2 WEEKS)

5. PERFORM SOLAR ARRAY CONSTRUCTION, UNDERGROUND ELECTRIC INSTALLATION, FINE GRADING, AND OTHER CONSTRUCTION ACTIVITY. (6 MONTHS)

3. CLEAR AND GRUB AND INSTALL STABILIZED CONSTRUCTION ENTRANCE, CONCRETE CULVERT, AND PERIMETER SUPER SILT FENCE, EARTH DIKES, AND SILT FENCE. (2 WEEKS)

7. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH

PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS

5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.

WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.

WITH SECTION B-4 VEGETATIVE STABILIZATION.

APPROVED PLAN.

U.S. DEPARTMENT OF AGRICULTURE

ATURAL RESOURCES CONSERVATION SERVICE

5. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR

7 MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND

MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND

3. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

MARYLAND DEPARTMENT OF ENVIRONMENT

WATER MANAGEMENT ADMINISTRATION

REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON

CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE

**B-4-8 STANDARDS AND SPECIFICATIONS** 

STANDARD SYMBOL

PSSMS - \* lb/ft<sup>2</sup>

(\* INCLUDE SHEAR STRESS)

VOIDS IF

AT ROLL END

(TYP.)

SPECIFIED (SEE

IN MIN. OVERLAP

To provide a designated location for the temporary storage of soil that controls the potential for erosion,

### Conditions Where Practice Applies

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

- 1. The stockpile location and all related sediment control practices must be clearly indicated on the
- 2. 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
- 3. Runoff from the stockpile area must drain to a suitable sediment control practice.
- 5. 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
- 6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
- 7. Stockpiles must be stabilized in accordance with the 3/7 day 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

### <u>Maintenance</u>

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 accordance with Section B-3 Land Grading.

GRID NO.S 16, 17, AND 22 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND TITLE SEDIMENT & EROSION **CONTROL DETAILS** 

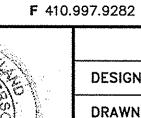
# Pennoni Associates Inc.

Consulting Engineers **Pennon**i

BY: JOHN A 1/1/4
PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT
THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME,

8818 Centre Park Drive Suite 200 Columbia, MD 21045

**T** 410.997.8900



ENGINEER'S CERTIFICATE

"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION

CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN

CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE

\_\_\_\_\_\_\_

DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION

WILL BE DONE ACCORDING TO THIS PLAN FOR SEDIMENT

PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL

HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF

THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE

INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION

AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION

REVISION

THE BITH GROUP

ATTN: RICARDO BETTS

113 WEST MONUMENT STREET

BALTIMORE, MD 21201

T: 410-962-1188

2800 NIXONS FARM LANE, LLC

ATTN: GEORGE BROWN

17500 FREDERICK ROAD

MT AIRY, MD 21771

T: 410-461-7200

NIXON SOLAR

PHASE II

(SOLAR FARM)

TAX MAP 15, PARCEL 90 ZONED RC-DEO

PLANNING AND ZONING

10-07-14

CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING

THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE

APPROVED : DEPARTMENT OF

CHIEF, DEVELOPMENT ENGINEERING DIVISION 🗗

AND EROSION CONTROL. AND THAT ALL RESPONSIBLE

BASED ON MY PERSONAL KNOWLEDGE OF THE SITE

WITH THE REQUIREMENTS OF THE HOWARD SOIL

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE)

CONSERVATION DISTRICT."

STEVEN ANDERSON IR

DISTRICT

DATE NO.

**PROJECT** 

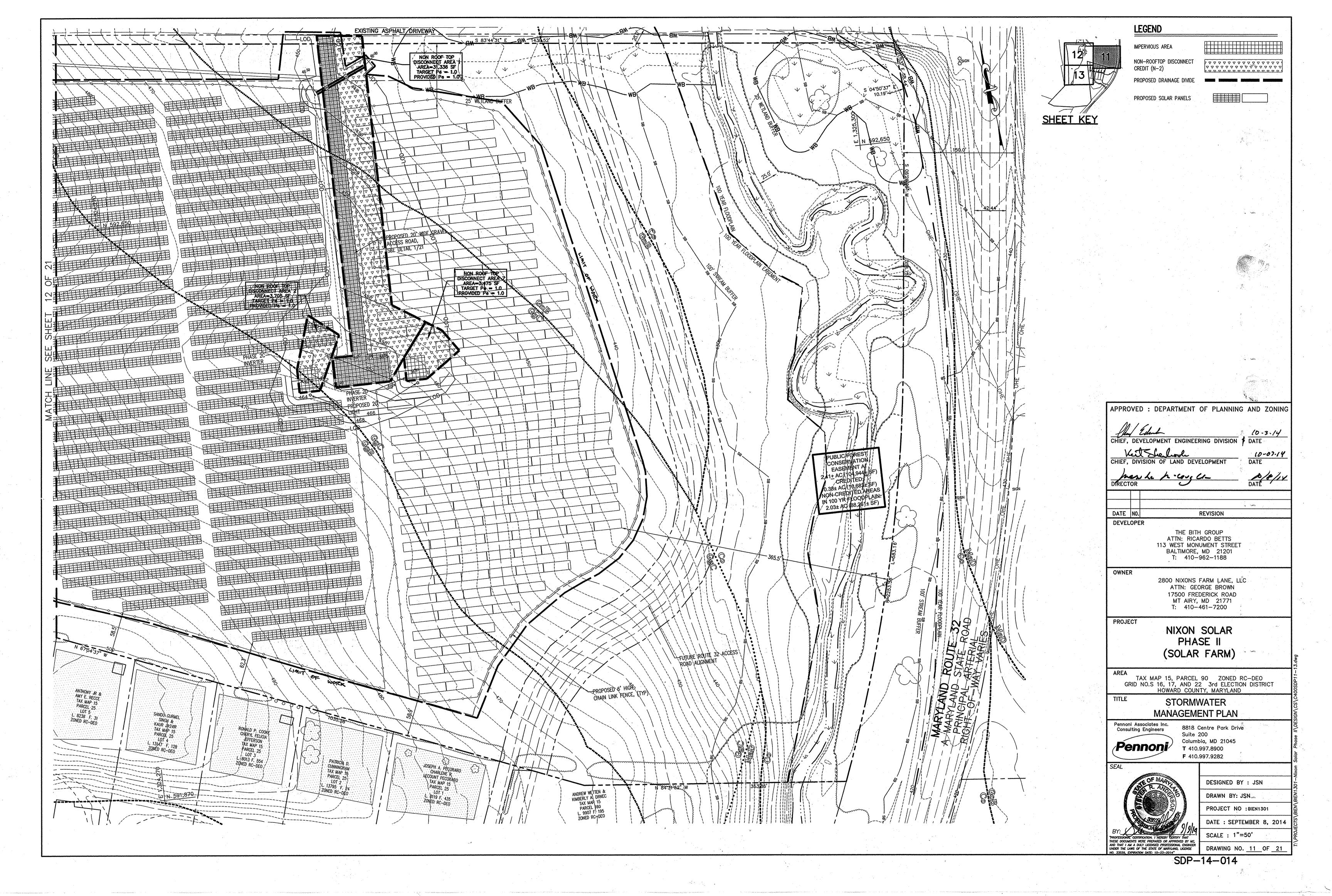
DEVELOPER

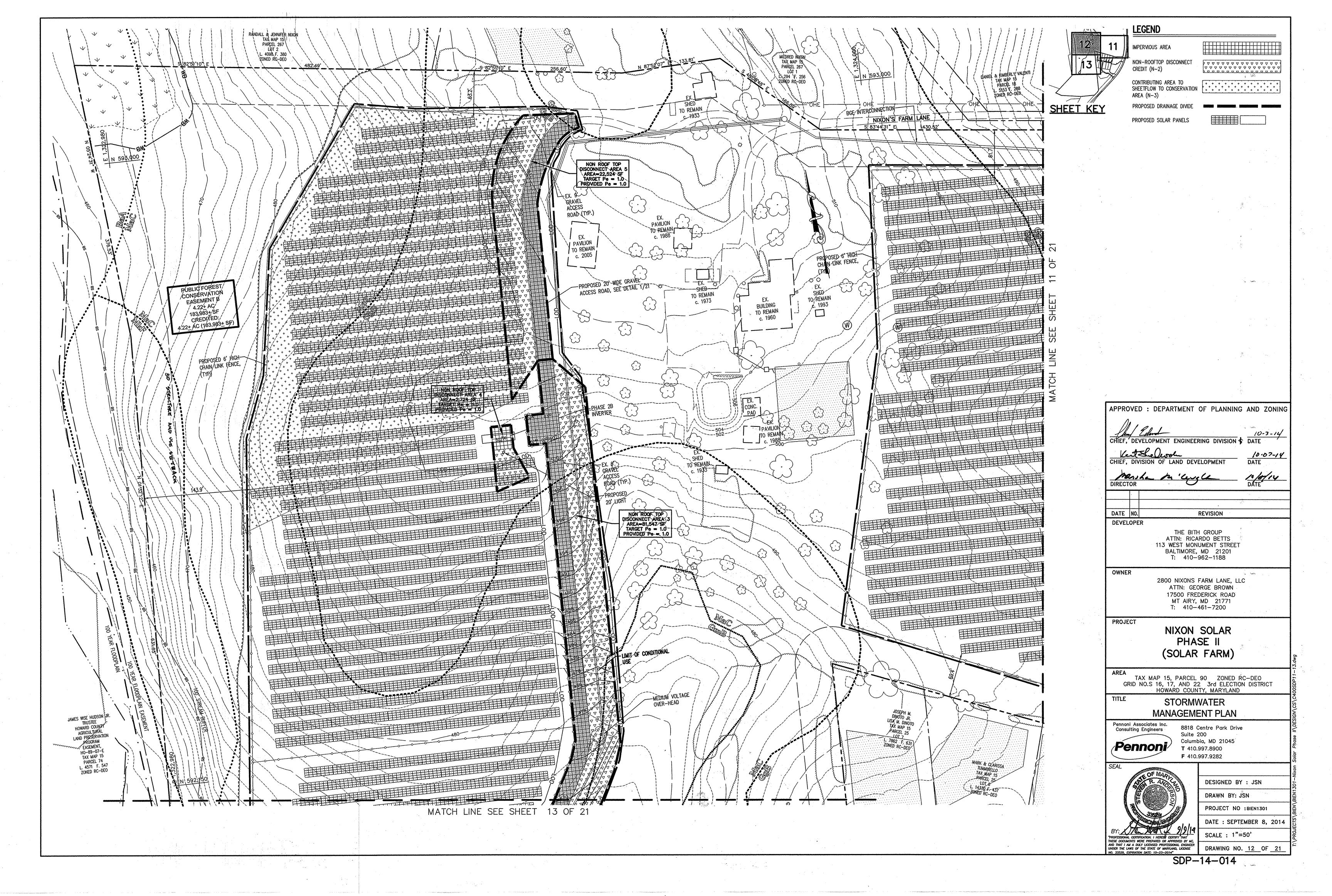
DESIGNED BY: JSN DRAWN BY: JSN PROJECT NO : BIEN1301

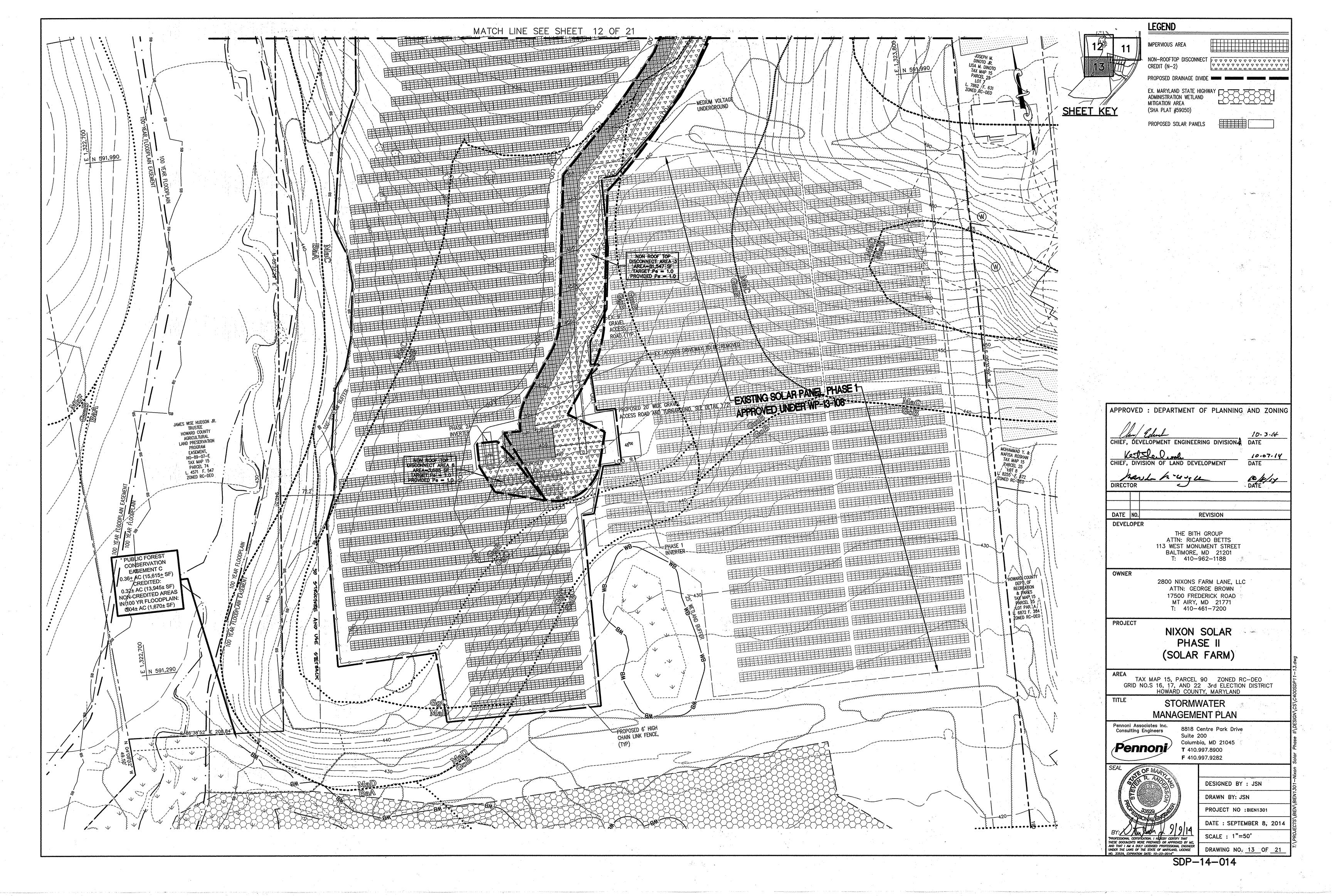
> DATE: SEPTEMBER 8, 2014 SCALE : AS SHOWN

AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEI UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE DRAWING NO. 10 OF 21

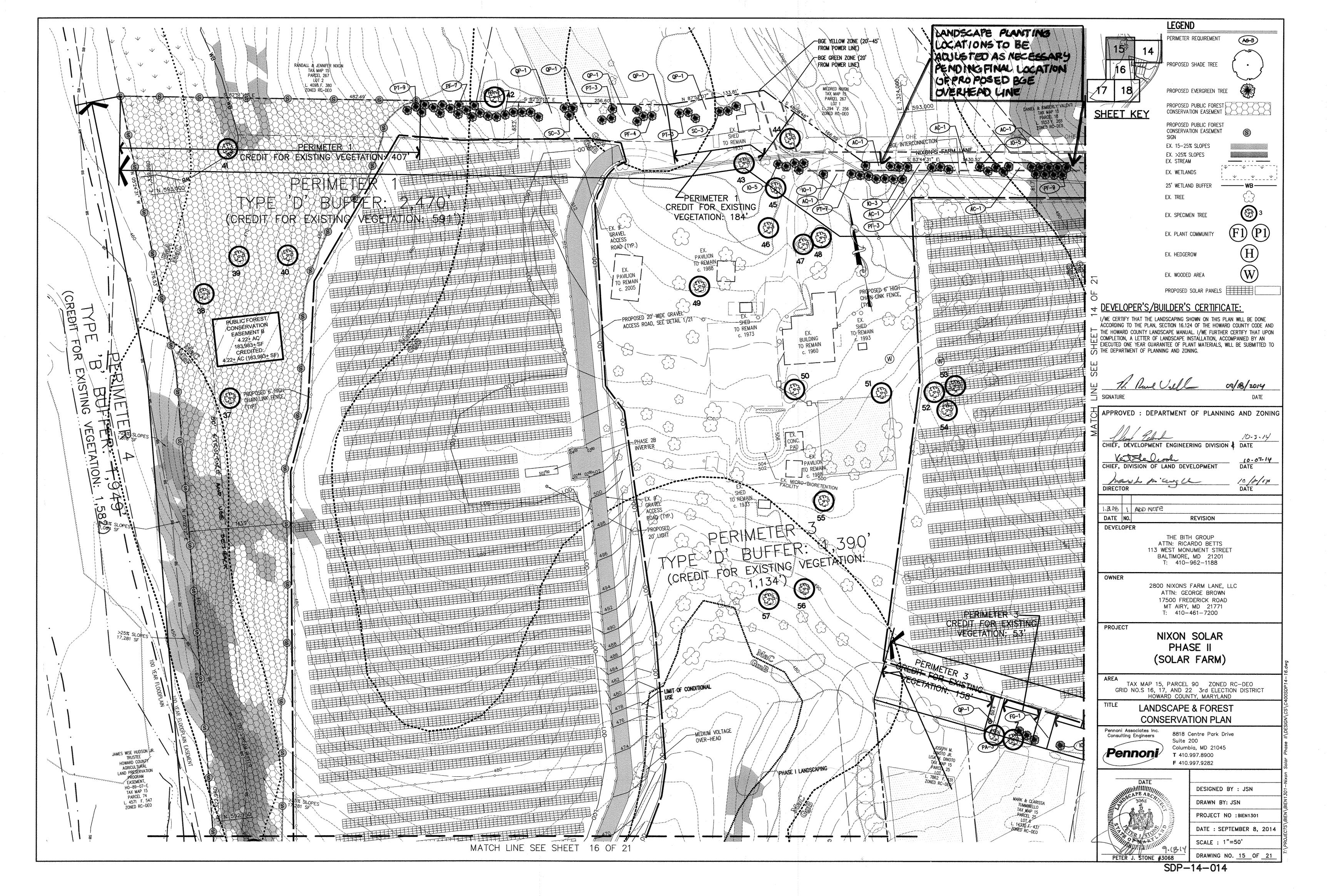
TEMPORARY OR PERMANENT STABILIZATION IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMEN CONTROL INSPECTOR OR WITHIN THE TIME FRAMES REQUIRED BY THE 2011 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE STRINGENT

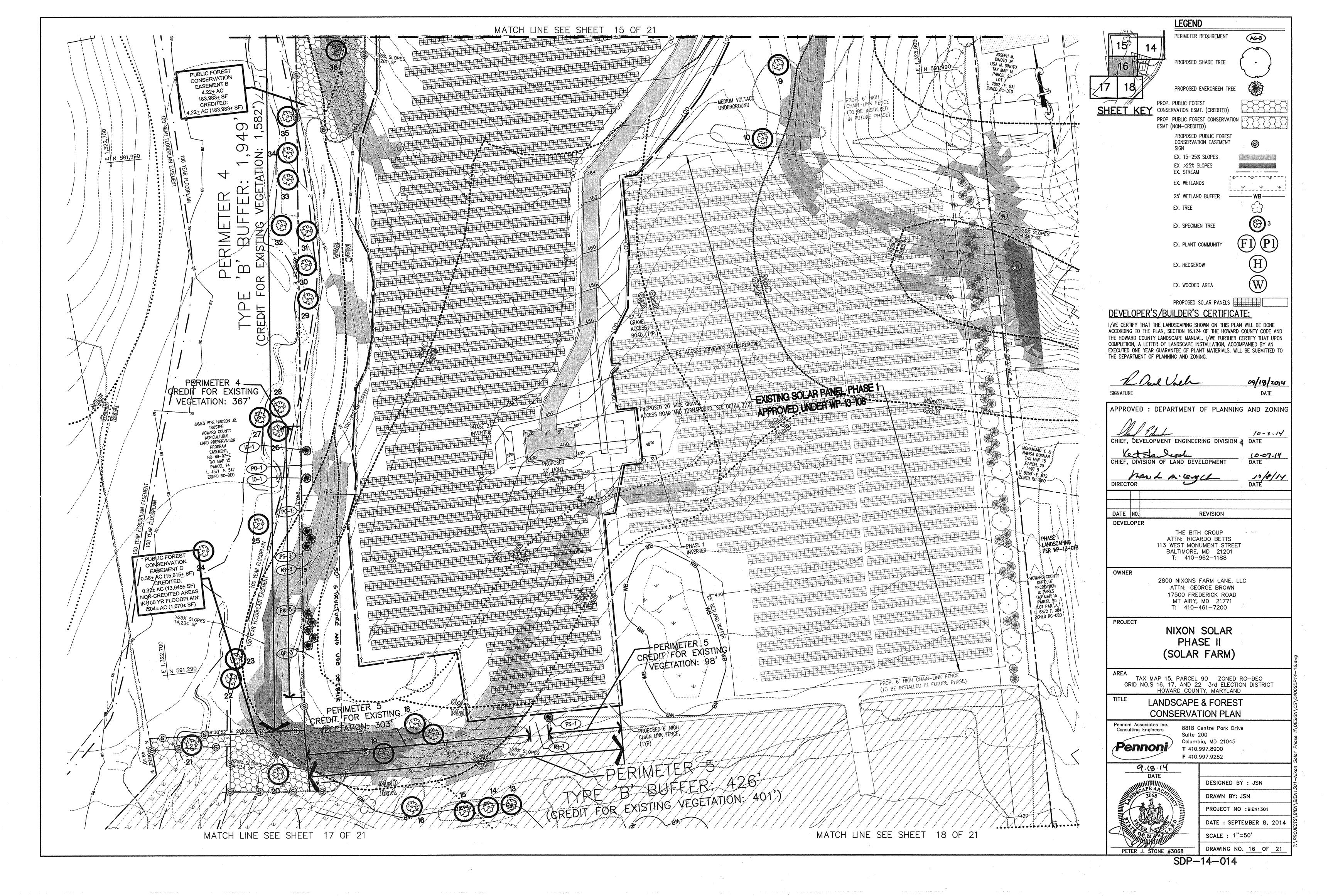


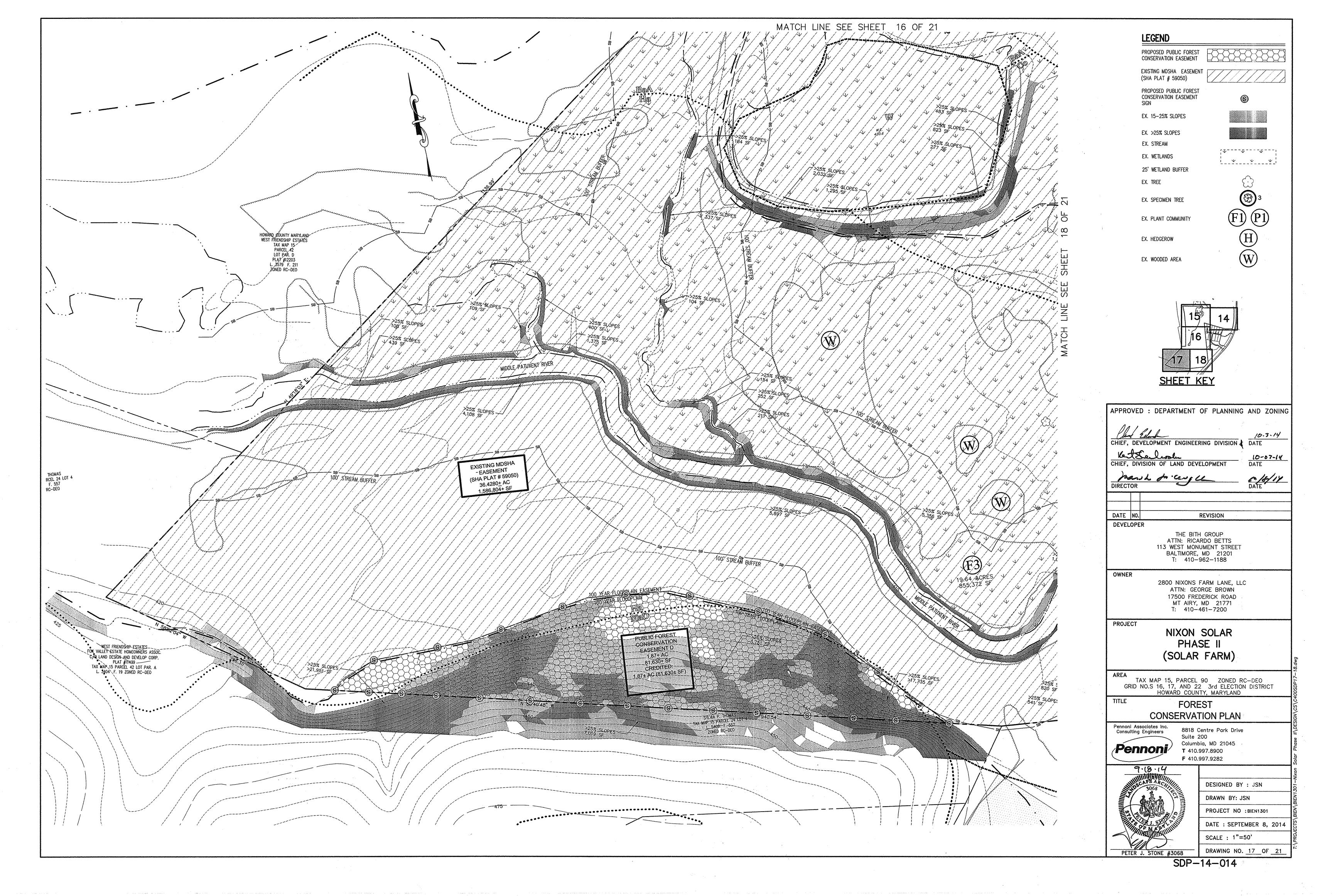














SCHEDULE A - PERIME	TER L	ANDSCA	APE ED	GE	
	ADJACENT TO PERIMETER PROPERTIES				
PERIMETER	1	2	3	4	5
LANDSCAPE TYPE	D	В	D	В	В
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	±2,470'	±1,011'	±1,390'	±1,949'	±426'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 591'	YES 847'	YES, 1,134	YES 1,582	YES 401
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO _	NO -	NO -	NO -	NO _
LINEAR FEET REMAINING	±1,879'	±164'	±256'	367'	25'
NUMBER OF PLANTS REQUIRED: SHADE TREES EVERGREEN TREES FLOWERING TREES SHRUBS	32 188 0 0	4 5 0 0	5 26 0	8 10 0	1 1 0 0
NUMBER OF PLANTS PROVIDED: SHADE TREES EVERGREEN TREES FLOWERING TREES SHRUBS	32 188 0	4 5 0 0	5 26 0 0	8 10 0	1 1 0 0

NOTE: THE LANDSCAPE BUFFERS SHOWN FOR SDP-14-014 WERE DETERMINED WITH BA-13-012C.

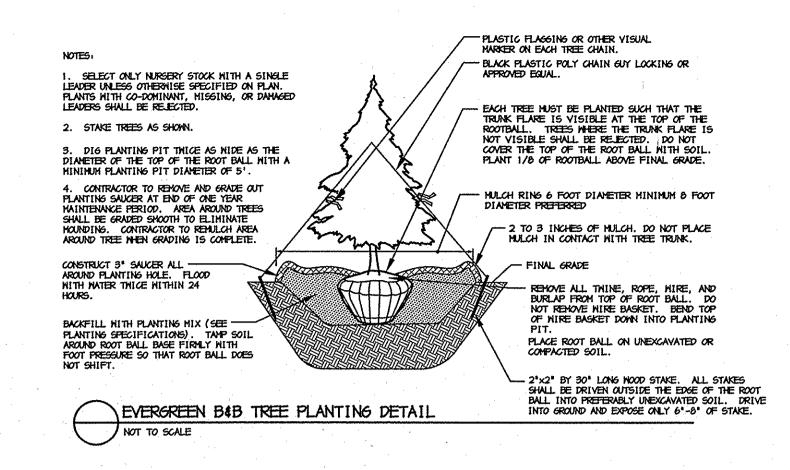
		PERIMETER 1 PLANT SCHED	ULE		Algebra (1997) Algebr
SYMBOL.	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
SHADE	TREES				
AC	16	ACER CAMPESTRE HEDGE MAPLE	2.5-3" CAL.	B&B	AS SHOWN
CC	8	CARPINUS CAROLINIANA AMERICAN HORNBEAM	2.5-3" CAL.	B&B	AS SHOWN
QP	5	QUERCUS PHELLOS WILLOW OAK	2.5-3" CAL.	B&B	AS SHOWN
EVERGR	EEN TREES				
10	32	ILEX OPACA AMERICAN HOLLY	6-8' HT.	B&B	AS SHOWN
PF	34	PINUS FLEXILIS LIMBER PINE	6-8' HT.	B&B	AS SHOWN
PT.	69	PINUS THUNBERGIANA JAPANESE BLACK PINE	6-8' HT.	B&B	AS SHOWN
SC	48	TSUGA CANADENSIS CANADIAN (EASTERN) HEMLOCK	6-8' HT.	B&B	as shown

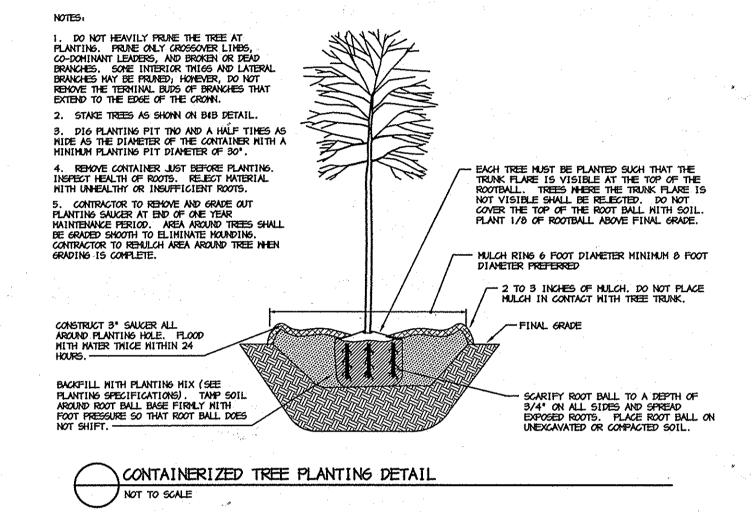
PERIMETER 2 PLANT SCHEDULE						
SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS	
SHADE	TREES					
FG	1	FAGUS GRANDIFOLIA AMERICAN BEECH	2.5-3" CAL.	B&B	AS SHOWN	
P0	3	PLATANUS OCCIDENTALIS SYCAMORE	2.5-3" CAL.	B&B	AS SHOWN	
EVERGR	EEN TREES		,			
PA	2	PICEA ABIES NORWAY SPRUCE	6-8' HT.	B&B	AS SHOWN	
PS	1	PINUS STROBUS EASTERN WHITE PINE	68' HT.	B&B	as shown	

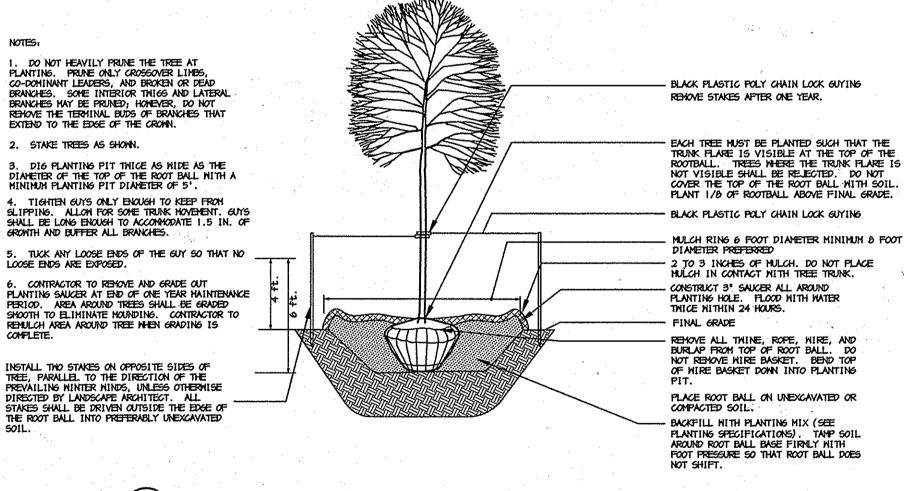
PERIMETER 3 PLANT SCHEDULE							
SYMBOL.	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS		
SHADE	TREES						
AR	1	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2.5-3" CAL.	B&B	AS SHOWN		
FG	2	FAGUS GRANDIFOLIA AMERICAN BEECH	2.5-3" CAL.	B&B	AS SHOWN		
QP	2	QUERCUS PHELLOS WILLOW OAK	2.5-3" CAL.	B&B	AS SHOWN		
EVERGR	EEN TREE	S					
10	5	ILEX OPACA AMERICAN HOLLY	6-8' HT.	B&B	AS SHOWN		
PA	10	PICEA ABIES NORWAY SPRUCE	6-8' HT.	B&B	AS SHOWN		
PS	11	PINUS STROBUS EASTERN WHITE PINE	6-8' HT.	B&B	AS SHOWN		

PERIMETER 4 PLANT SCHEDULE						
SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS	
SHADE	TREES				<b>K</b>	
AR	3	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2.5-3" CAL.	B&B	AS SHOWN	
PO	2	PLATANUS OCCIDENTALIS SYCAMORE	2.5-3" CAL.	B&B	AS SHOWN	
QP	3	QUERCUS PHELLOS WILLOW OAK	2.5-3" CAL.	8&B	AS SHOWN	
EVERGR	EEN TREE	ZS .				
10	2	ILEX OPACA AMERICAN HOLLY	6-8' HT.	B&B	AS SHOWN	
PA	5	PICEA ABIES NORWAY SPRUCE	6-8' HT.	B&B	AS SHOWN	
PS	3	PINUS STROBUS EASTERN WHITE PINE	6-8' HT.	B&B	AS SHOWN	

PERIMETER 5 PLANT SCHEDULE						
SYMBOL QT	Y.	SCIENTIFIC/ COMMON NAME		SIZE	ROOT	REMARKS
SHADE TREE	S					,
AR 1		ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE		2.5-3" CAL.	B&B	AS SHOWN
EVERGREEN	TREES					
PS 1		PINUS STROBUS EASTERN WHITE PINE		6-8' HT.	B&B	AS SHOWN







DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)

### PLANTING SPECIFICATIONS

- 1. PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION, AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN. WHERE DISCREPANCIES EXIST BETWEEN STANDARDS & GUIDELINES REFERENCED WITHIN THESE SPECIFICATIONS AND THE LANDSCAPE MANUAL OF THE APPLICABLE JURISDICTION, THE LATTER TAKES PRECEDENCE.
- 2. ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, THAT IS NOT NURSERY GROWN, UNIFORMLY BRANCHED, DOES NOT HAVE A VIGOROUS ROOT SYSTEM, AND DOES NOT CONFORM TO THE MOST RECENT EDITION OF THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION (ANLA) STANDARDS WILL BE REJECTED. PLANT MATERIAL THAT IS NOT HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUNSCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS WILL BE REJECTED. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL BE REJECTED. ALL B & B PLANTS SHALL BE FRESHLY DUG; NO HEALED-IN PLANTS OR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
- 3. UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATIONS SHALL CONFORM TO THE MOST RECENT EDITION OF THE "LANDSCAPE SPECIFICATION GUIDELINES BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MD. DC. & VA". (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE
- POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS. 4. CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION ON THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL RELEVANT AND APPROPRIATE UTILITY COMPANIES, UTILITY CONTRACTORS, AND "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO THE BEGINNING OF ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. MAJOR CHANGES WILL REQUIRE THE APPROVAL OF THE LANDSCAPE ARCHITECT. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- 6. PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED VIA THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE AT THE DRIP LINE, SEE DETAIL.
- CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION. DO NOT PLANT PINUS STROBUS OR XCUPRESSACYPARIS LEYLANDII BETWEEN NOVEMBER 15 AND MARCH 15. LANDSCAPE PLANTS ARE NOT TO BE INSTALLED BEFORE SITE IS GRADED TO FINAL GRADE.
- 8. CONTRACTOR TO REGRADE, FINE GRADE, SOD, HYDROSEED AND STRAW MULCH ALL AREAS DISTURBED BY THEIR WORK.

WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.

- 9. BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM ACTUAL SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.
- 10. PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE. WHERE DISCREPANCIES ON THE PLAN EXIST BETWEEN THE SYMBOLS AND THE CALLOUT LEADER, THE NUMBER OF SYMBOLS TAKE PRECEDENCE.
- 11. ALL SHRUBS AND GROUNDCOVER AREAS SHALL BE PLANTED IN CONTINUOUS PLANTING BEDS, PREPARED AS SPECIFIED, UNLESS OTHERWISE INDICATED ON PLANS. (SEE SPECIFICATION 13). BEDS TO BE MULCHED WITH MINIMUM 2" AND MAXIMUM 3" OF COMPOSTED, DOUBLE-SHREDDED HARDWOOD MULCH THROUGHOUT.
- 12. POSITIVE DRAINAGE SHALL BE MAINTAINED ON PLANTING BEDS (MINIMUM 2 PERCENT SLOPE).
- 13. BED PREPARATION SHALL BE AS FOLLOWS: TILL INTO A MINIMUM DEPTH OF 6" 1 YARD OF COMPRO OR LEAFGRO PER 200 SF OF PLANTING BED, AND 1 YARD OF TOPSOIL PER 100 SF OF BED. ADD 3 LBS OF STANDARD 5-10-5 FERTILIZER PER CUBIC YARD OF PLANTING MIX AND TILL. ERICACEOUS PLANTS (AZALEAS, RHODODENDRONS, ETC.): TOP DRESS AFTER PLANTING WITH IRON SULFATE OR COMPARABLE PRODUCT ACCORDING TO PACKAGE DIRECTIONS. TAXUS BACCATA 'REPANDENS' (ENGLISH WEEPING YEWS): TOP DRESS AFTER PLANTING WITH 1/4 TO 1/2 CUP LIME EACH.
- 14. PLANTING MIX: FOR TREES NOT IN A PREPARED BED, MIX 50% COMPRO OR LEAFGRO WITH 50% SOIL FROM TREE HOLE TO USE AS BACKFILL, SEE TREE PLANTING DETAIL.
- 15. WEED & INSECT CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. FOR TREE PLANTING, APPLY A PRE-EMERGENT ON TOP OF SOIL AND ROOT BALL BEFORE MULCHING. CAUTION: FOR AREAS TO BE PLANTED WITH A GROUND COVER, BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUNDCOVER TO BE TREATED. MAINTAIN THE MULCH WEED-FREE FOR THE EXTENT OF THE WARRANTY PERIOD. UNDER NO CIRCUMSTANCES IS A PESTICIDE CONTAINING CHLORPYRIFOS TO BE USED AS A MEANS OF PEST CONTROL.
- 16. WATER: ALL PLANT MATERIAL PLANTED SHALL BE WATERED THOROUGHLY THE DAY OF PLANTING. ALL PLANT MATERIAL NOT YET PLANTED SHALL BE PROPERLY PROTECTED FROM DRYING OUT UNTIL PLANTED. AT A MINIMUM, WATER UNPLANTED PLANT MATERIAL DAILY AND AS NECESSARY TO AVOID DESSICATION.
- 17. PRUNING: DO NOT HEAVILY PRUNE TREES AND SHRUBS AT PLANTING. PRUNE ONLY BROKEN, DEAD, OR DISEASED BRANCHES.
- 18. ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED, GRASS SEED PLANTED, AND COVERED WITH STRAW MULCH.

**DEVELOPER'S / BUILDER'S CERTIFICATE:** 

DEPARTMENT OF PLANNING AND ZONING.

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE

HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON

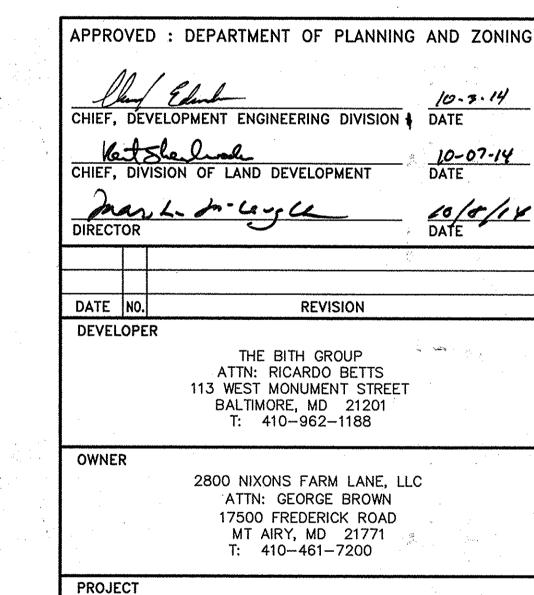
COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN

ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE

EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE

### **GENERAL NOTES:**

- 1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.
- 2. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE
  - GRADING PERMIT IN THE AMOUNT OF \$49,500.00. 50 SHADE TREES @ \$300 = \$15.000.00 O ORNAMENTAL TREES @ \$150 = \$0.00
  - = \$34,500.00 230 EVERGREEN TREES @ \$150
  - O SHRUBS @ \$30 = \$0.00 BONDED LANDSCAPING INCLUDES REQUIRED LANDSCAPING PER THE LANDSCAPE MANUAL.
- 3. THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.
- 4. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- 5. ALL MATERIAL SELECTED SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR NURSERY STOCK", LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- 6. ALL MATERIAL SHALL BE PLANTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CITED IN THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES" PUBLISHED BY THE LANDSCAPE CONTRACTORS ASSOCIATION.
- 7. AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPING MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS 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 APPLICABLE PLANS AND CERTIFICATES.
- 8. NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY. ANY DEVIATION FROM THIS LANDSCAPE PLAN MAY RESULT IN A REQUIREMENT FOR SUBMITTAL OF AN OFFICIAL "REDLINE REVISION" TO THE SITE DEVELOPMENT PLAN(S) AND/OR DENIAL IN THE RELEASE OF LANDSCAPE SURETY.
- 9. 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.
- 10. THE OWNER, TENANT 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.



NIXON SOLAR PHASE II (SOLAR FARM)

TAX MAP 15, PARCEL 90 ZONED RC-DEO GRID NO.S 16, 17, AND 22 3rd ELECTION DISTRICT HOWARD COUNTY, MARYLAND

LANDSCAPE NOTES

AND DETAILS

Consulting Engineers **Pennoni** 

Pennoni Associates Inc.

8818 Centre Park Drive Suite 200 Columbia, MD 21045 T 410.997.8900 **F** 410.997.9282



DESIGNED BY : JSN DRAWN BY: JSN PROJECT NO :BIEN1301 DATE: SEPTEMBER 8, 2014

SCALE : AS SHOWN DRAWING NO. 19 OF 2

PETER J. STONE #3068 SDP-14-014

KEY	SPECIES	SIZE	CONDITION	REMAIN/REMOVE
1	SYCAMORE (Platanus occidentalis)	34"	GOOD	REMAIN
2	SYCAMORE (Platanus occidentalis)	30"	GOOD	REMAIN
3	SYCAMORE (Platanus occidentalis)	24"	GOOD	REMAIN
4	SYCAMORE (Platanus occidentalis)	40"	GOOD	REMAIN
5	SYCAMORE (Platanus occidentalis)	30"	GOOD	REMAIN
6	SYCAMORE (Platanus occidentalis)	30"	GOOD	REMAIN
7	BLACK LOCUST (Robinia pseudoacacia)	30"	GOOD	REMAIN
8	BLACK LOCUST (Robinia pseudoacacia)	40"	GOOD	REMAIN
9	WHITE PINE (Pinus strobus)	36"	GOOD	REMAIN
·····	BLACK LOCUST (Robinia pseudoacacia)	30"	· · · · · · · · · · · · · · · · · · ·	
10		1	GOOD	REMAIN
11	SYCAMORE (Platanus occidentalis)	30"	GOOD	REMAIN
12	PIN OAK (Quercus palustris)	48"	POOR	REMAIN
13	WHITE OAK (Quercus alba)	31"	GOOD	REMAIN
14	WHITE OAK (Quercus alba)	31"	GOOD	REMAIN
15	WHITE OAK (Quercus alba)	32"	GOOD	REMAIN
16	WHITE OAK (Quercus alba)	39"	GOOD	REMAIN
17	SYCAMORE (Platanus occidentalis)	33"	GOOD	REMAIN
18	RED OAK (Quercus rubra)	67"	GOOD	REMAIN
19	SYCAMORE (Platanus occidentalis)	41"	GOOD	REMAIN
20	SYCAMORE (Platanus occidentalis)	32"	GOOD	REMAIN
		30"		
21	TULIP POPLAR (Liriodendron tulipifera)	<del>  </del>	GOOD	REMAIN
22	WHITE OAK (Quercus alba)	30"	GOOD	REMAIN
23	WHITE OAK (Quercus alba)	30"	GOOD	REMAIN
24	PIN OAK (Quercus palustris)	30"	POOR	REMAIN
25	SLIPPERY ELM (Ulmus rubra)	30"	POOR	REMAIN
26	WHITE OAK (Quercus alba)	48"	GOOD	REMAIN
27	WHITE OAK (Quercus alba)	30"	GOOD	REMAIN
28	RED OAK (Quercus rubra)	30"	POOR	REMAIN
29	WHITE OAK (Quercus alba)	30"	GOOD	REMAIN
30	WHITE OAK (Quercus alba)	38"	GOOD	REMAIN
31	WHITE OAK (Quercus alba)	40"	GOOD	REMAIN
32	WHITE OAK (Quercus alba)	32"	GOOD	REMAIN
33	WHITE OAK (Quercus alba)	32"	GOOD	REMAIN
	WHITE OAK (Quercus alba)	35"		
34		<del></del>	GOOD	REMAIN
35	WHITE OAK (Quercus alba)	38"	GOOD	REMAIN
36	RED OAK (Quercus rubra)	30"	GOOD	REMAIN
37	RED OAK (Quercus rubro)	30"	GOOD	REMAIN
38	RED OAK (Quercus rubra)	32"	GOOD	REMAIN
39	RED OAK (Quercus rubra)	31"	GOOD	REMAIN
40	RED OAK (Quercus rubra)	31"	GOOD	REMAIN
41	WHITE OAK (Quercus alba)	23"	GOOD	REMAIN
42	WHITE OAK (Quercus alba)	42"	GOOD	REMAIN
43	WHITE OAK (Quercus alba)	54"	POOR	REMAIN
44	WHITE OAK (Quercus alba)	44"	POOR	REMAIN
45	RED OAK (Quercus rubra)	42"	POOR	REMAIN
	RED OAK (Quercus rubra)	31"		
46		1.	GOOD	REMAIN
47	BLACK CHERRY (Prunus serotina)	31"	GOOD	REMAIN
48	SHELLBARK HICKORY (Carya laciniosa)	64"	GOOD	REMAIN
	BLACK CHERRY (Prunus serotina)	33"	GOOD	REMAIN
49		40"	GOOD	REMAIN
49 50	SYCAMORE (Platanus occidentalis)	_ <del> </del>		1
	SYCAMORE (Platanus occidentalis)  RED MAPLE (Acer rubrum)	38"	GOOD	REMAIN
50		38" 36"	GOOD	REMAIN REMAIN
50 51	RED MAPLE (Acer rubrum)	-		
50 51 52 53	RED MAPLE (Acer rubrum)  RED MAPLE (Acer rubrum)  RED MAPLE (Acer rubrum)	36"	GOOD	REMAIN REMAIN
50 51 52 53 54	RED MAPLE (Acer rubrum)  RED MAPLE (Acer rubrum)  RED MAPLE (Acer rubrum)  RED MAPLE (Acer rubrum)	36" 34" 34"	GOOD GOOD	REMAIN REMAIN REMAIN
50 51 52 53	RED MAPLE (Acer rubrum)  RED MAPLE (Acer rubrum)  RED MAPLE (Acer rubrum)	36" 34"	GOOD	REMAIN REMAIN

### **Howard County Forest Conservation Worksheet**

Project Name: Nixon Solar Phase II County File #: SDP-14-014 Date: March 3, 2014

Date:	waren 3, 2014			-
•				
				<b>A</b>
Net Tract A				Acres
Α.	Total Tract Area	A	= -	109.82
В.	Floodplain Area	В	- L	31.01
C.	Existing MDSHA Easement Area	C		36.43
D.	Net Tract Area Net Tract Area = (A-B-C)	D	=_	42.38
Land Use C		,		0.00
D.	Afforestation Threshold (Net Tract Area X _ 15%	E	= -	6.36
E	Conservation Threshold (Net Tract Area X15%	F	= _	6.36
Existing For		_		
F.	Existing Forest Cover within the Net Tract Area	G	= L	6.79
G.	Area of Forest Above Conservation Threshold	Н	=_	0.43
	If the Existing Forest Cover (F) is greater than Conservation Threshold (G), then			
1	G = Existing Forest Cover (F) - Conservation Threshold (E); Otherwise G = 0			
Break Even				
H	Break Even (Amount of forest that must be retained so that no mitigation is required)	I	=_	6.44
	(1) If the area of forest above the Conservation Threshold (G) is greater than zero, then			
	H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation			
	Threshold (E)			
	(2) If the area of forest above the Conservation Threshold (G) is equal to zero, then			
	H = Existing Forest Cover (F)			
1.	Forest Clearing Permitted Without Mitigation	J	=	0.35
	I = Existing Forest Cover (F) - Break Even Point (H)		. –	
Proposed F	orest Clearing			
J.	Total Area of Forest to be Cleared	K	=	0.00
<b>K</b> .,	Total Area of Forest to be Retained	L	= _	6.79
	K = Existing Forest Cover (F) - forest to be cleared (J)		-	
Planting Re	quirements	٠.		
If the Total A	rea of Forest to be Cleared (K) is at or above the Breakeven Point (H), no planting is required and	no		
further calcu	lations are necessary (L=0, M=0, N=0, P=0);	,		
If not, calcula	ate the planting requirement below:			
L.	Reforestation for Clearing Above the Conservation Threshold	M	==	0.00
	(1) if the total area of forest to be retained (K) is greater than the		•	
	Conservation Threshold (E), then			
	L = the area of forest to be cleared (J) X 0.25: or			
	(2) If the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then			
	L = area of forest above Conservation Threshold (G) X 0.25			•
M	Reforestation for Clearing Below the Conservation Threshold	N	=	0.00
,	(1) if Existing Forest Cover (F) is greater than Conservation Threshold (E) and the		_	
200	forest to be retained (K) is less than or equal to the Conservation Threshold (E), then			
	M = 2.0 X (the Conservation Threshold (E) - the forest to be retained (K))			
	(2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then			
	$M = 2.0 \times \text{Forest to be cleared (J)}$ .	,		
N.	Credit for Retention Above the Conservation Threshold	0	=	0.43
	If the area of forest to be retained (K) is greater than the Conservation Threshold (E),	_	-	
	then N = K - E			
P.	Total Reforestation Required P = L + M - N	Р	=	0.00
Q.	Total Afforestation Required	Ġ		0.00
· · ·	(1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then		-	0.00
	Q = the Afforestation Threshold (D) - the Existing Forest Cover (F)			
	Total Planting Requirement R = P + Q	P		0.00
R.	Total Flanking Requirement R = F + Q	R		0.00

FOREST AREA SUMMARY TABLE				
AREA	ACRES			
TOTAL TRACT AREA	109.82 ACRES			
EXISTING FOREST COVER	6.79 ACRES			
TOTAL AREA OF FOREST TO BE CLEARED	0.00 ACRES			
FOREST TO BE RETAINED	6.79 ACRES			
REQUIRED REFORESTATION	0.00 ACRES			
REFORESTATION PROVIDED	0.00 ACRES			

CONSERVATION TYPE	AREA	ACRES CREDITED	ACRES NON-CREDITED	ACRES TOTAL
1. ON-SITE RETENTION				
	A	0.38 ACRES	2.03 ACRES	2.41 ACRES
	В	4.22 ACRES	0.00 ACRES	4.22 ACRES
	С	0.32 ACRES	0.04 ACRES	0.36 ACRES
	D	1.87 ACRES	0.00 ACRES	1.87 ACRES
TOTAL AMOUNT OF CONSERVATION		6.79 ACRES	2.07 ACRES	8.86 ACRES

		SOILS TABLE				
MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS DWELLINGS WITH BASEMENTS	EROSION HAZARD	HYDRIC	SLOPE (%)	SOIL GROUP
BaA	BAILE SILT LOAM	VERY LIMITED	LOW	YES	0-3%	D
Со	CODORUS AND HATBORO SILT LOAM	VERY LIMITED	LOW	YES	0-3%	C & D
GgA	GLENELG LOAM	NOT LIMITED	LOW	NO	0-3%	В
GgB	GLENELG LOAM	NOT LIMITED	MODERATE	NO	3-8%	В
GgC	GLENELG LOAM	SOMEWHAT LIMITED	MODERATE	NO	8-15%	В
GmB	GLENVILLE SILT LOAM	VERY LIMITED	MODERATE	NO	3-8%	С
GńB	GLENVILLE-BAILE SILT LOAMS	VERY LIMITED	MODERATE	YES	0-8%	С
GoB	GLENVILLE-CODORUS SILT LOAMS	VERY LIMITED	MODERATE	NO	0-8%	С
На	HATBORO-CODORUS SILT LOAMS	VERY LIMITED	LOW	YES	0-3%	D
MaB	MANOR LOAM	NOT LIMITED	MODERATE	NO	3-8%	В
MaC	MANOR LOAM	SOMEWHAT LIMITED	MODERATE	NO	8-15%	В
MaD	MANOR LOAM	VERY LIMITED	HIGH	NO	15-25%	В
MkF	MANOR-BRINKLOW COMPLEX	VERY LIMITED	HIGH	NO	25-65%	В

SOURCE: NATURAL RESOURCES CONSERVATION SERVICE WEB SOIL SURVEY

### **GENERAL NOTES**

1. BOUNDARY INFORMATION HAS BEEN PROVIDED BY PATTON HARRIS RUST AND ASSOCIATES INC. TOPOGRAPHY INFORMATION PROVIDED BY AVAILABLE HOWARD COUNTY RECORDS AND AN AERIAL SURVEY PREPARED BY VIRGINIA RESOURCE MAPPING INC. DATED JANUARY 2005.

2. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.

3. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.

4. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.

5. ELEVEN (11) EXISTING BUILDINGS OF VARIOUS SIZES AND USES ARE PRESENT ON THE SITE.

6. THE FOLLOWING SOILS ARE PRESENT ON THE SITE: BAILE SILT LOAM (0-3% SLOPES)-BAA, CODORUS AND HATBORO SILT LOAM (0-3% SLOPES)-CO, GLENELG LOAM (0-3% SLOPES)-GGA, GLENELG LOAM (3-8% SLOPES)-GGB, GLENELG LOAM (8-15% SLOPES)-GGC, GLENVILLE SILT LOAM (3-8% SLOPES)-GMB, GLENVILLE-BAILE SILT LOAMS (0-8% SLOPES)-GNB, GLENVILLE CODORUSSILT LOAMS (0-8% SLOPES)-GOB, HATBORO-CODORUS SILT LOAMS (0-3% SLOPES)-HA, MANOR LOAM (3-8% SLOPES)-MAB, MANOR LOAM (8-15% SLOPES)-MAC, MANOR LOAM (15-25% SLOPES)-MAD, AND MANOR-BRINKLOW COMPLEX (25-65% SLOPES)-MKF ACCORDING TO THE NATURAL RESOURCES CONSERVATION SÉRVICE WEB SOIL SURVEY.

7. THE FOREST STAND DELINEATION (FSD), DATED JULY 2013 HAS BEEN PREPARED BY PENNONI ASSOCIATES.

8. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.

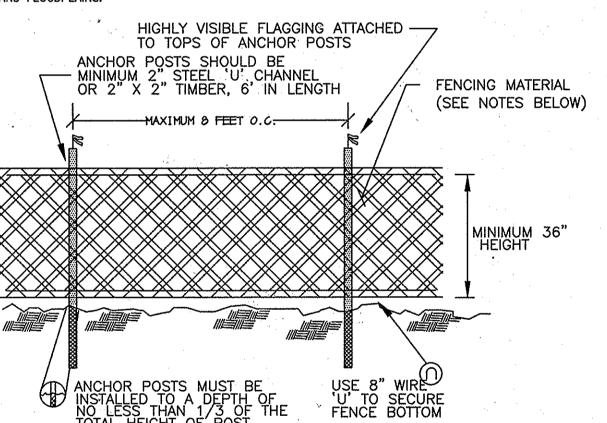
9. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY PRESERVING 8.86 ACRES OF FOREST (6.79 ACRES OF CREDITED ON-SITE RETENTION AND 2.07 ACRES OF NON-CREDITED ON-SITE RETENTION) AND BY EXCEEDING THE BREAK-EVEN POINT, OF 6.44 ACRES. NO FOREST CONSERVATION SURETY IS REQUIRED.

10. ALL NON-CREDITED FOREST CONSERVATION EASEMENT AREAS ARE LOCATED WITHIN THE FLOODPLAIN.

11. THE FOREST CONSERVATION EASEMENTS HAVE BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

12. THE BOUNDARY OF THE PROPOSED FOREST CONSERVATION EASEMENTS ARE IDENTIFIED ON FINAL PLAT SDP-14-014FC WITH BEARINGS AND DISTANCES UNDER PLAT NO.'S 22955-22957.

13. <u>JUSTIFICATION FOR FOREST RETENTION</u>: FOREST RETENTION AREAS HAVE BEEN ESTABLISHED OVER AREAS OF CONTIGUOUS, MATURE FORESTED AREAS. THE MAJORITY OF THESE FOREST AREAS ARE LOCATED IN PRIORITY RETENTION AREAS SUCH AS STREAM BUFFERS AND FLOODPLAINS.

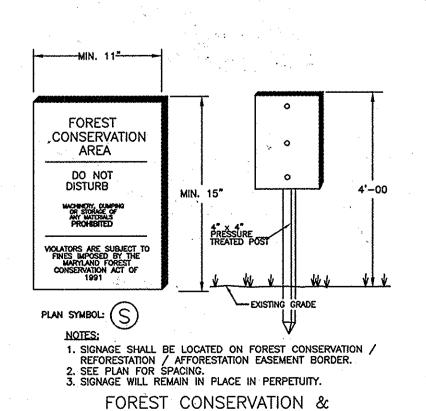


BLAZE ORANGE MESH OR SUPER SILT FENCE FOR TREE PROTECTION DEVICE, ONLY. BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED PRIOR TO GRADING AND SEDIMENT CONTROL. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER

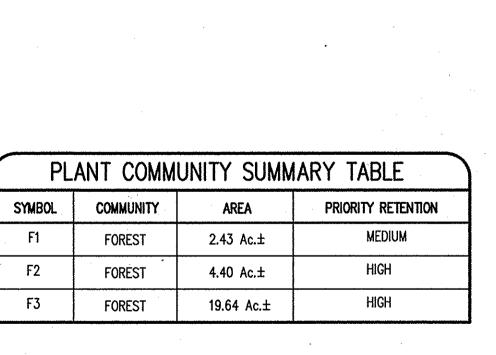
> TREE PROTECTION FENCING NOT TO SCALE

FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

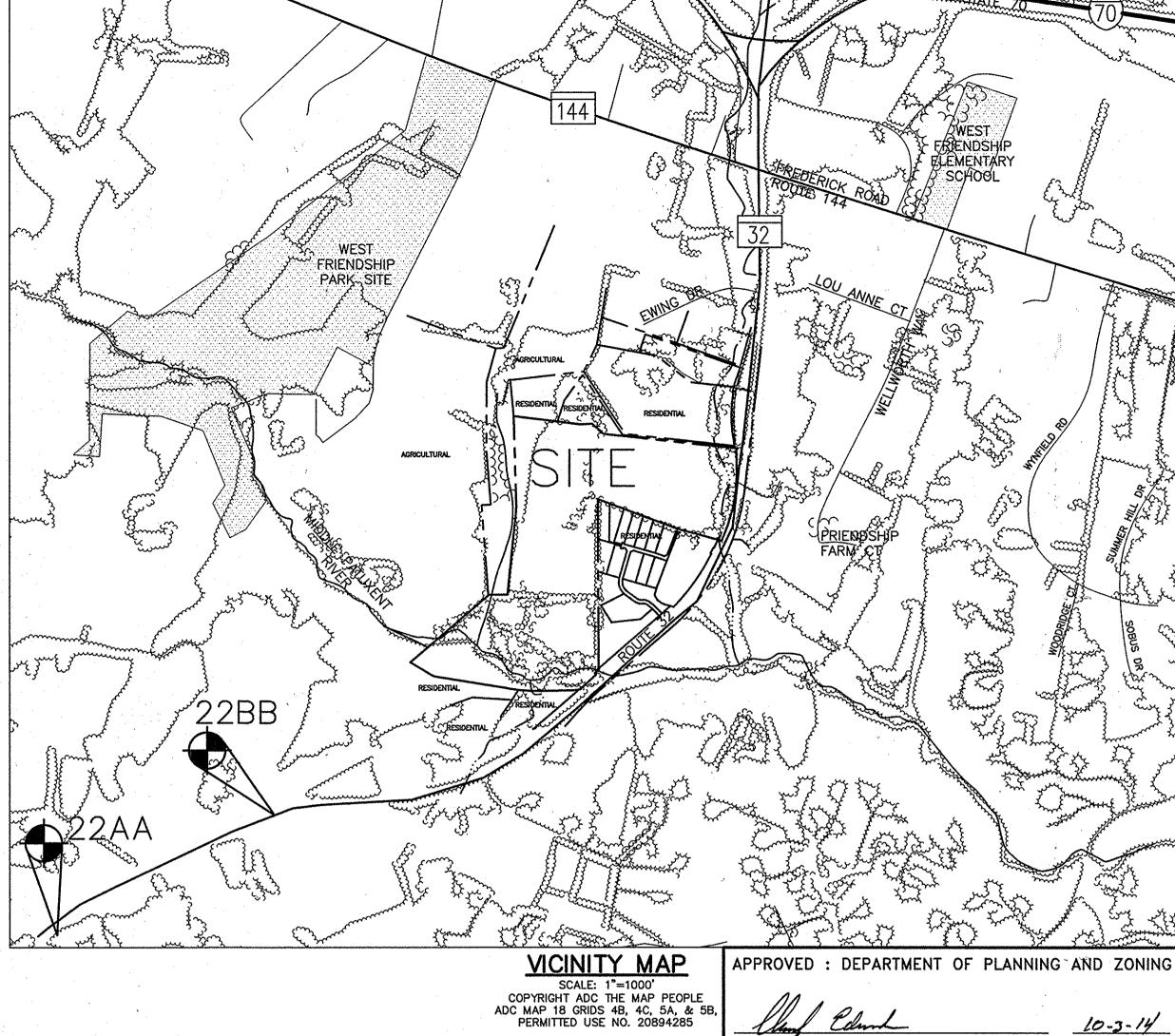
LARGE ROOTS WHEN INSTALLING POSTS.



REFORESTATION SIGN DETAIL NOT TO SCALE



AREA TABLE			
AREA	ACRES		
TOTAL TRACT AREA	109.82		
EXISTING FOREST	26.47		
LAND WITHIN STREAM BUFFERS	20.53		
LAND WITHIN WETLANDS & WETLAND BUFFERS	24.30		
LAND WITHIN FLOODPLAIN	31.01		
FOREST WITHIN STREAM BUFFERS	15.37		
FOREST WITHIN WETLANDS	8.04		
FOREST WITHIN FLOODPLAIN	19.60		



2800 NIXONS FARM LANE, LLC ATTN: GEORGE BROWN 17500 FREDERICK ROAD MT AIRY, MD 21771 T: 410-461-7200 **PROJECT** NIXON SOLAR PHASE II (SOLAR FARM)

	GRID NO.S 16, 17,	PARCEL 90 ZONED RC—DEO AND 22 3rd ELECTION DISTRICT D COUNTY, MARYLAND
		CONSERVATION S AND DETAILS
	Pennoni Associates Inc. Consulting Engineers  Pennoni	8818 Centre Park Drive Suite 200 Columbia, MD 21045 <b>T</b> 410.997.8900 <b>F</b> 410.997.9282
3 4 -	9.(8.(4	

DATE NO.

DEVELOPER

Columbia, MD 21045 **T** 410.997.8900 F 410.997.9282 DESIGNED BY : JSN DRAWN BY: JSN PROJECT NO : BIEN1301

DATE: SEPTEMBER 8, 2014 SCALE : AS SHOWN DRAWING NO. 20 OF 21

SDP-14-014

CHIEF, DEVELOPMENT ENGINEERING DIVISION A DATE

REVISION

BALTIMORE, MD 21201

THE BITH GROUP ATTN: RICARDO BETTS 113 WEST MONUMENT STREET

T: 410-962-1188

10-07-14

