SITE DEVELOPMENT PLAN
NIXON SOLAR PHASE II
2800 NIXON'S FARM LANE
PARCEL 90
3RD ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SHEET INDEX

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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.

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 OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.

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

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.

6. 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 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 NOVEMBER 28, 2005, AND APPROVED BY HOWARD COUNTY ON AUGUST 17, 2006..

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 2013.

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 PROGRAMS.

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 PROJECT.

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 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 EASTERN PORTION OF THE SOLAR ARRAY, ALONG S00°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 AGREEMENT FOR THIS PROJECT.

5. A CORRECTED WAIVER EXHIBIT, (INCLUDING AN AMENDED AND SIGNED [BY THE DEVELOPER/BUILDER] LANDSCAPE PLAN WHICH REFLECTS CHANGES TO BUFFER TYPE ['C' BUFFER-ENTIRE LENGTH OF PERIMETER], PLANT LISTS, SURETY NOTES) AND ADDRESSING ALL ATTACHED COMMENTS FROM THE DIVISION OF LAND DEVELOPMENT SHALL BE SUBMITTED TO PLANNING AND ZONING WITHIN 2 WEEKS OF WAIVER APPROVAL (ON OR BEFORE SEPTEMBER 11, 2012).

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 12, 2012).

7. THE SIGNATURE APPROVED SUPPLEMENTAL PLAN (WAIVER PLAN EXHIBIT) SHALL SERVE 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 CONSTRUCTED PER THE SIGNATURE APPROVED SUPPLEMENTAL PLAN EXHIBIT.

8. THE WAIVER PETITION SHALL APPLY ONLY TO THE USES AND STRUCTURES DESCRIBED AND AS SHOWN ON THE SIGNATURE APPROVED SUPPLEMENTAL PLAN EXHIBIT AND NOT TO ANY OTHER ACTIVITIES, USES, STRUCTURES OR ADDITIONS TO THIS PROPERTY.

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 APPROVED SUPPLEMENTAL PLAN EXHIBIT SHALL BE SUBMITTED FOR ANY PERMITS REQUIRED FROM DILP.

24. WP-14-020, APPROVED ON 9/11/13, IS SUBJECT TO THE FOLLOWING CONDITIONS:

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) 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 I OF DEVELOPMENT CONSISTING OF A LIMIT OF DISTURBANCE OF 9.46 ACRES.

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 CONDITIONS:

1. THE DEVELOPER MUST RESUBMIT SITE DEVELOPMENT PLAN ORIGINALS IN ASSOCIATION WITH SDP-14-014 FOR SIGNATURE AND WITHIN 180 DAYS OF AUGUST 19, 2014 (ON OR BEFORE FEBRUARY 15, 2015).

2. SUBMIT SITE DEVELOPMENT MYLARS AND PAY ANY APPLICABLE FEE CHARGES THAT MAY HAVE OCCURED SINCE THE ORIGINAL APPROVAL DATE OF FEBRUARY 20, 2014.

25. NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, PAVING AND NEW STRUCTURES SHALL BE PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS OR THEIR BUFFERS, FOREST CONSERVATION EASEMENT AREAS AND 100 YEAR FLOODPLAIN.

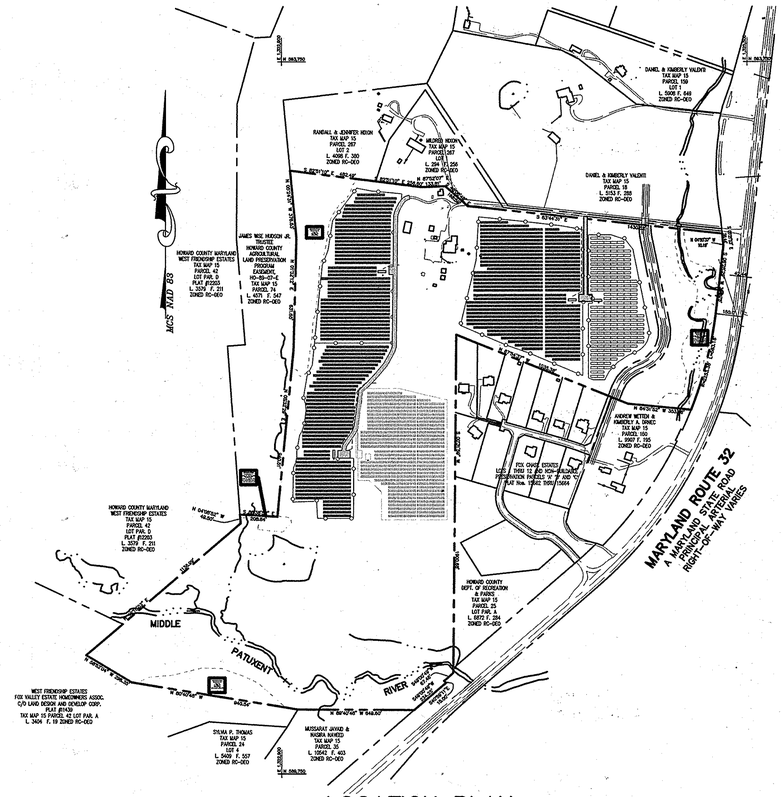
26. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

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 TREES AND 230 EVERGREEN TREES.

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

30. STORMWATER MANAGEMENT FOR THIS PROJECT IS PROVIDED BY NON-ROOFTOP DISCONNECT CREDITS AND SHEETFLOW TO CONSERVATION AREAS. STORMWATER MANAGEMENT WILL BE PRIVATELY OWNED AND MAINTAINED.



LOCATION PLAN
SCALE: 1" = 400'

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 CHASE.

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)
LIMIT OF WORK:	33.65 ACRES (1,465,654 SF)
LIMIT OF DISTURBANCE:	5.84 ACRES (254,227 SF)

(THE LIMIT OF WORK IS THE EXTENTS OF THE PROJECT. THE LIMIT OF DISTURBANCE IS 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 CONTROL PLANS.)

EXISTING ZONING:	RC-DEO
EXISTING SITE USE:	COUNTRY CLUB (CASE #: 390-C, BA 80-39)
PROPOSED SITE USE:	SOLAR PANEL FARM/COUNTRY CLUB
AREA OF WETLANDS AND WETLAND BUFFERS:	24.30 AC
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:	±0.00 AC
GREEN AREA:	
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'

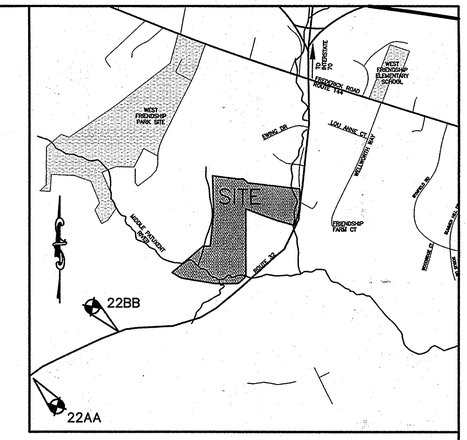
ESDv SUMMARY

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
90	2820 NIXON'S FARM LANE – SOLAR FARM

SUBDIVISION NAME			SECT./AREA		PARCEL
WEST FRIENDSHIP			–		90
PLAT NO. OR L/F	GRID #	ZONING	TAX MAP NO.	ELECT. DIST.	CENSUS TRACT
L. 12565 F. 273	16, 17, & 22	RC-DEO	15	3	6030.00



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 EASEMENT.
- 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.
- THE PROPOSED FACILITY IS SETBACK AT LEAST 50' FROM ALL 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 USE PLAN.
- 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 ENDING.
- THE FACILITY SHALL BE CONSTRUCTED SO AS TO MINIMIZE GLARE AND REFLECTION ONTO ADJACENT PROPERTIES AND ROADWAYS.

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER
THE BITH GROUP
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

PROJECT
NIXON SOLAR
PHASE II
(SOLAR FARM)

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

TITLE
TITLE SHEET

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND
BRIEN R. ANDERSON
No. 35529
PROFESSIONAL ENGINEER
BY: 9/8/14
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 35529, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : AS SHOWN	
DRAWING NO. 1 OF 21	

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SDP-14-014

LEGEND

EXISTING 2' CONTOUR	248
EXISTING 10' CONTOUR	250
EX. PROPERTY LINE AND RIGHT OF WAY	
EXISTING WELL	
EXISTING SEPTIC FIELD	
EX. TREELINE	
EX. SOILS	BaA
100 YEAR FEMA FLOODPLAIN	FP
100 YEAR FEMA FLOODPLAIN EASEMENT	
100' STREAM BUFFER	SB
EX. STREAM	
EX. WETLANDS	
EX. WETLAND BUFFER	WB
PROPOSED 8' HIGH CHAIN LINK FENCE	
PROPOSED LIGHT	
BUILDING RESTRICTION LINE	
EX. TREE	
EX. MARYLAND STATE HIGHWAY ADMINISTRATION WETLAND MITIGATION AREA	

MAINTENANCE NARRATIVE

MAINTENANCE OF THE EQUIPMENT AT THIS FACILITY WILL TYPICALLY OCCUR ON A SEMI-ANNUAL BASIS. MAINTENANCE IS TYPICALLY LIMITED TO THE ELECTRICAL EQUIPMENT. LITTLE TO NO MAINTENANCE OF THE PANELS IS REQUIRED, OTHER THAN AN OCCASIONAL WASHING. MAINTENANCE OF THE FACILITY GROUNDS TO MOW THE GRASS WILL OCCUR THROUGHOUTH THE GROWING SEASON. MAINTENANCE VISITS TO THE SITE ARE TYPICALLY HANDLED WITH A PICKUP TRUCK. BECAUSE MAINTENANCE IS TYPICALLY HANDLED BY A SINGLE TRUCK, NO PARKING AREAS ARE REQUIRED.

ACCESS NARRATIVE

ACCESS TO THE SITE WILL BE FROM THE EXISTING DRIVEWAY (NIXON'S FARM LANE) THAT SERVES 2800 NIXON'S FARM LANE. NIXON'S FARM LANE HAS DIRECT ACCESS TO MD ROUTE 32. ONCE AT THE FACILITY, ACCESS TO EACH SOLAR PANEL AREA WILL BE VIA THE PROPOSED GRAVEL DRIVEWAYS AND LOCKED GATES.

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

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PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

OVERALL PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
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T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND
STEVEN R. ANDERSON
33529
PROFESSIONAL ENGINEER

BY: 9/8/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33529, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=200'	
DRAWING NO. 2 OF 21	

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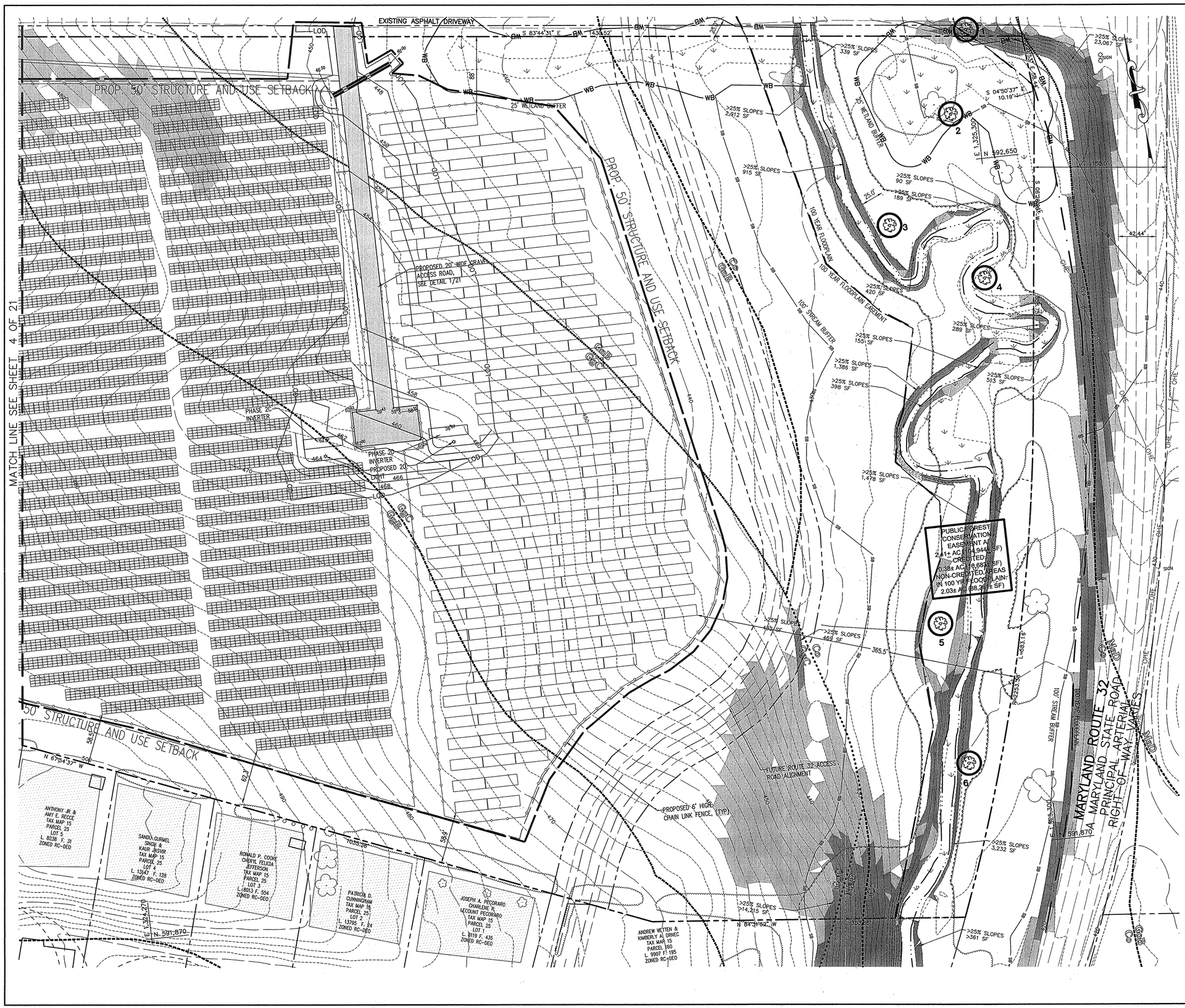
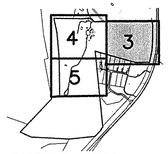
SDP-14-014



LEGEND

EXISTING 2' CONTOUR	248
EXISTING 10' CONTOUR	250
EX. PROPERTY LINE AND RIGHT OF WAY	
EXISTING WELL	
EXISTING SEPTIC FIELD	
EX. TREELINE	
EX. SOILS	BaA
100 YEAR FEMA FLOODPLAIN	FP
100 YEAR FEMA FLOODPLAIN EASEMENT	
100' STREAM BUFFER	SB
EX. STREAM	
EX. WETLANDS	
25' WETLAND BUFFER	WB
PROPOSED 6' HIGH CHAIN LINK FENCE	
EX. TREE	
PROPOSED LIGHT	
BUILDING RESTRICTION LINE	
PROPOSED GRADING	522
EX. 15-25% SLOPES	
EX. >25% SLOPES	
EX. SPECIMEN TREE	3
PROPOSED FOREST CONSERVATION EASEMENT	
PROPOSED SOLAR PANELS	



SHEET KEY

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

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OWNER

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PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

SITE DEVELOPMENT PLAN

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SEAL

STATE OF MARYLAND
STEVEN R. ANDERSON
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DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 3 OF 21	

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SDP-14-014

LEGEND

- EXISTING 2' CONTOUR — 248
- EXISTING 10' CONTOUR — 250
- EX. PROPERTY LINE AND RIGHT OF WAY
- EXISTING WELL
- EXISTING SEPTIC FIELD
- EX. TREELINE
- EX. SOILS — B&A
- 100 YEAR FEMA FLOODPLAIN — FP
- 100 YEAR FEMA FLOODPLAIN EASEMENT
- 100' STREAM BUFFER — SB
- EX. STREAM
- EX. WETLANDS
- 25' WETLAND BUFFER — WB
- PROPOSED 6' HIGH CHAIN LINK FENCE
- EX. TREE
- PROPOSED LIGHT
- BUILDING RESTRICTION LINE
- PROPOSED GRADING — 522
- EX. 15-25% SLOPES
- EX. >25% SLOPES
- EX. SPECIMEN TREE — 3
- PROPOSED FOREST CONSERVATION EASEMENT
- PROPOSED SOLAR PANELS

SHEET KEY

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

SITE DEVELOPMENT PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — STEVEN R. ANDERSON — 33529 — PROFESSIONAL ENGINEER

BY: 9/9/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33529, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 4 OF 21	

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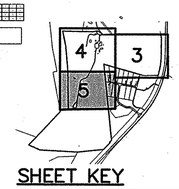
SDP-14-014

MATCH LINE SEE SHEET 4 OF 21

LEGEND

EXISTING 2' CONTOUR	248
EXISTING 10' CONTOUR	250
EX. PROPERTY LINE AND RIGHT OF WAY	
EXISTING WELL	
EXISTING SEPTIC FIELD	
EX. TREELINE	
EX. SOILS	BaA
100 YEAR FEMA FLOODPLAIN	FP
100 YEAR FEMA FLOODPLAIN EASEMENT	
100' STREAM BUFFER	SB
EX. STREAM	
EX. WETLANDS	
25' WETLAND BUFFER	WB
PROPOSED 6' HIGH CHAIN LINK FENCE	
EX. TREE	
PROPOSED LIGHT	
BUILDING RESTRICTION LINE	
LIMITS OF DISTURBANCE	LOD
PROPOSED GRADING	522
EX. MARYLAND STATE HIGHWAY ADMINISTRATION WETLAND MITIGATION AREA (SHA PLAT #59050)	
EX. 15-25% SLOPES	
EX. >25% SLOPES	
EX. SPECIMEN TREE	3
PROPOSED FOREST CONSERVATION EASEMENT	
PROPOSED SOLAR PANELS	



SHEET KEY

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-07-14

DIRECTOR — DATE 10/10/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
ATTN: RICARDO BETTS
113 WEST MONUMENT STREET
BALTIMORE, MD 21201
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OWNER

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MT AIRY, MD 21771
T: 410-461-7200

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

SITE DEVELOPMENT PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — STEVEN R. ANDERSON — 33528 — PROFESSIONAL ENGINEER

BY: 9/8/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33528, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 5 OF 21	

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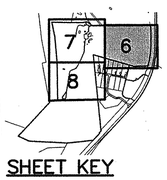
SDP-14-014



SHEET KEY

*THE LIMIT OF DISTURBANCE ENCOMPASSES THE LIMIT OF LAND GRADING ON THE SITE. THE LIMIT OF WORK ENCOMPASSES THE LIMIT OF SITE WORK FOR THE PROJECT THAT DOES NOT INCLUDE ANY LAND GRADING..

LEGEND

PROPOSED GRADING	522
PROPOSED SILT FENCE	SF
PROPOSED SUPER SILT FENCE	SSF
PROPOSED EARTH DIKE	
PROPOSED STABILIZED CONSTRUCTION ENTRANCE	SCE
PROPOSED PERMANENT SOIL STABILIZATION MATTING	
EX. 15-25% SLOPES	
EX. >25% SLOPES	
LIMIT OF DISTURBANCE*	LOD
LIMIT OF WORK*	
PROPOSED SOLAR PANELS	
DRAINAGE DIVIDE	

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."

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) STEVEN ANDERSON JR — DATE 9/9/14

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 THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/18/2014

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

HOWARD SCD — DATE 9/30/14

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/7/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
ATTN: RICARDO BETTS
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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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

GRADING, SEDIMENT & EROSION CONTROL PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — STEVEN R. ANDERSON — 33520 — PROFESSIONAL ENGINEER

BY: 9/9/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33520, EXPIRATION DATE: 10-23-2014".

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 6 OF 21	

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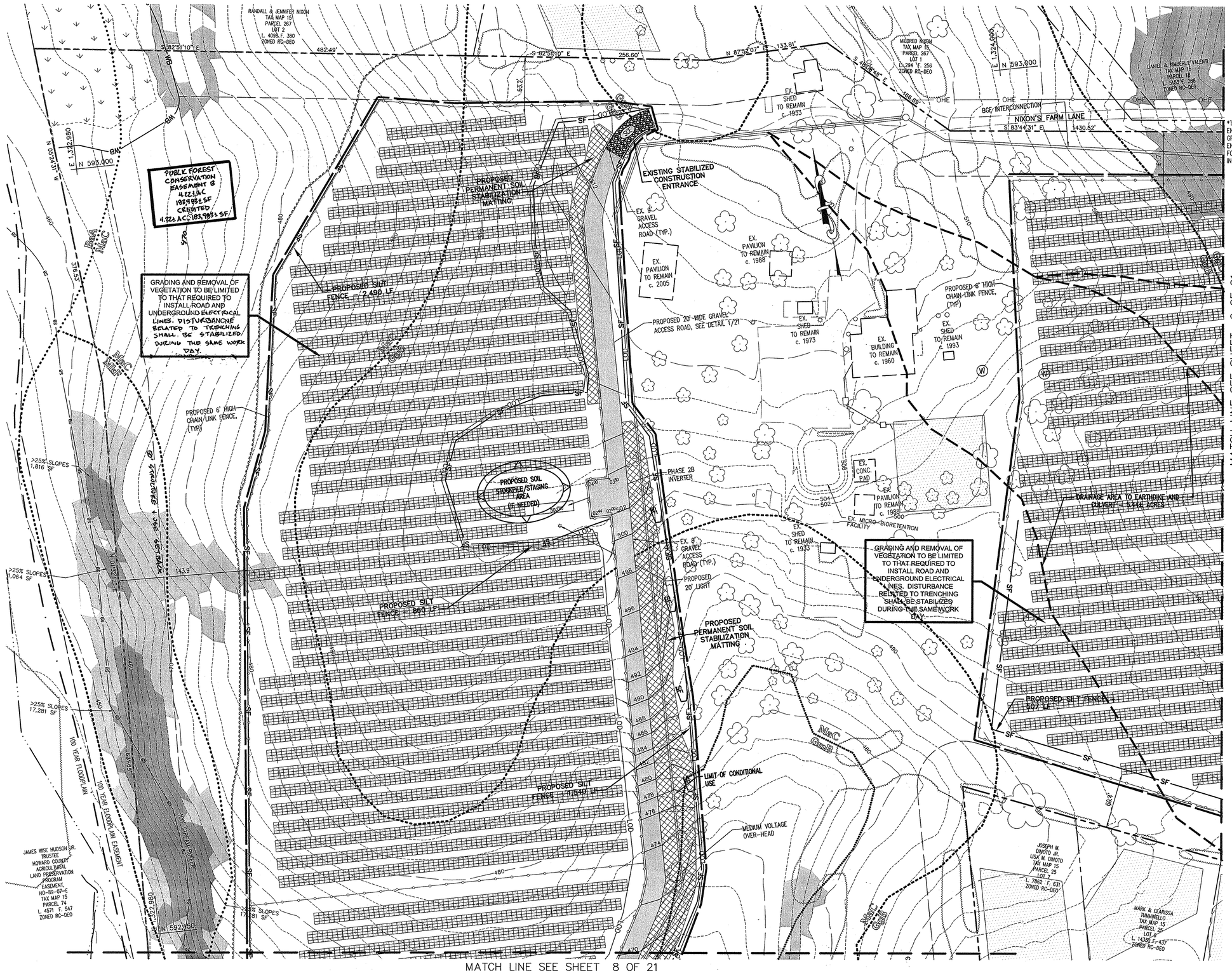
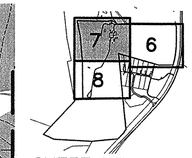
SDP-14-014





SHEET KEY

*THE LIMIT OF DISTURBANCE ENCOMPASSES THE LIMIT OF LAND GRADING ON THE SITE. THE LIMIT OF WORK ENCOMPASSES THE LIMIT OF SITE WORK FOR THE PROJECT THAT DOES NOT INCLUDE ANY LAND GRADING..

LEGEND

PROPOSED GRADING	522
PROPOSED SILT FENCE	SF
PROPOSED SUPER SILT FENCE	SSF
PROPOSED EARTH DIKE	
PROPOSED STABILIZED CONSTRUCTION ENTRANCE	SCE
PROPOSED PERMANENT SOIL STABILIZATION MATTING	
EX. 15-25% SLOPES	
EX. >25% SLOPES	
LIMIT OF DISTURBANCE*	LOD
LIMIT OF WORK*	
PROPOSED SOLAR PANELS	
DRAINAGE DIVIDE	

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."

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) STEVEN ANDERSON JR. DATE 9/9/14

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 THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) 9/10/2014 DATE

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

HOWARD SCD 9/30/14 DATE

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION 10.3.14 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 10-07-14 DATE

DIRECTOR 10/2/14 DATE

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

GRADING, SEDIMENT & EROSION CONTROL PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — STEVEN R. ANDERSON — 33524 — PROFESSIONAL ENGINEER

BY: 9/9/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33524, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 7 OF 21	

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SDP-14-014

MATCH LINE SEE SHEET 7 OF 21

GRADING AND REMOVAL OF VEGETATION TO BE LIMITED TO THAT REQUIRED TO INSTALL ROAD AND UNDERGROUND ELECTRICAL LINES. DISTURBANCE RELATED TO TRENCHING SHALL BE STABILIZED DURING THE SAME WORK DAY.

PUBLIC FOREST CONSERVATION EASEMENT C
0.36± AC (15,615± SF)
CREDITED:
0.32± AC (13,945± SF)
NON-CREDITED AREAS IN 100 YR FLOODPLAIN:
(0.04± AC (1,670± SF)

PROPOSED SUPER SILT FENCE 1,540 LF

PROPOSED PERMANENT SOIL STABILIZATION MATTING

PROPOSED 20' WIDE GRAVEL ACCESS ROAD AND TURNAROUND, SEE DETAIL 7/21

EXISTING SOLAR PANELS PHASE 1 APPROVED UNDER WP-13-108

EX. 9' GRAVEL ACCESS ROAD (TYP.)

EX. ACCESS DRIVEWAY TO BE REMOVED

PHASE 2 INVERTER

PROPOSED 20' LIGHT

PROPOSED SOIL STOCKPILE/STAGING AREA (IF NEEDED)

PROPOSED SUPER SILT FENCE 665 LF

PROPOSED SILT FENCE 2,430 LF

PHASE 1 INVERTER

MEDIUM VOLTAGE UNDERGROUND

PROPOSED 6' HIGH CHAIN LINK FENCE, (TYP)

JAMES WISE HUDSON JR. TRUSTEE HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM EASEMENT, HO-89-07-E TAX MAP 15 PARCEL 74 L. 4571 F. 547 ZONED RC-DEO

JOSEPH M. DINOTO JR. LISA M. DINOTO TAX MAP 15 PARCEL 25 LOT 7 L. 7862 F. 631 ZONED RC-DEO

MOHAMMAD Y. & NAFISA ROSHAN TAX MAP 15 PARCEL 25 LOT 8 L. 8255 F. 672 ZONED RC-DEO

HOWARD COUNTY DEPT. OF RECREATION & PARKS TAX MAP 15 PARCEL 25 LOT PAR. A L. 6872 F. 384 ZONED RC-DEO

100-YEAR FLOODPLAIN EASEMENT

100 YEAR FLOODPLAIN

STRUCTURE + USE SETBACK

25' WETLAND BUFFER

>25% SLOPES 281 SF

>25% SLOPES 14,234 SF

>25% SLOPES 75 SF

>25% SLOPES 105 SF

>25% SLOPES 233 SF

E 1,322,700 N 591,990

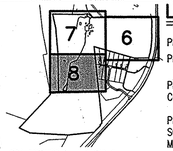
E 1,323,800 N 591,990

S 86°38'52" E 208.84'

S 00°13'08" W 136.36'

N 25°49'00" W 238.90'

SHEET KEY



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LEGEND

PROPOSED GRADING	522
PROPOSED SILT FENCE	SF
PROPOSED STABILIZED CONSTRUCTION ENTRANCE	SCE
PROPOSED PERMANENT SOIL STABILIZATION MATTING	
EX. 15-25% SLOPES	
EX. >25% SLOPES	
LIMIT OF DISTURBANCE*	LOD
LIMIT OF WORK*	
PROPOSED SOLAR PANELS	

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."

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) DATE 9/9/14
STEVEN ANDERSON JR

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 THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) DATE 9/18/2014

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HOWARD SCD DATE 9/30/14

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 10-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 10-07-14

DIRECTOR DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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OWNER

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ATTN: GEORGE BROWN
17500 FREDERICK ROAD
MT AIRY, MD 21771
T: 410-461-7200

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

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Pennoni Associates Inc. Consulting Engineers
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SEAL

STATE OF MARYLAND — STEVEN R. ANDERSON — 33529 — PROFESSIONAL ENGINEER

BY: 9/9/14

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DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO. : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 8 OF 21	

T:\PROJECTS\BIEN\BIEN1301-Nixon Solar Phase II\DESIGN\CS\C-ADDSDP06-08.dwg

SDP-14-014

B-4-2 STANDARDS AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION

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

PURPOSE

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

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 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 CONDITIONS.

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 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 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 USDA-NRCS.

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 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 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 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.

C. 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 FOR SEEDING AND MULCHING

DEFINITION

THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

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

CRITERIA

A. SEEDING

1. SPECIFICATIONS

a. 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

a. 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 CONTACT

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.

c. 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 STRICTLY PROHIBITED.

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.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION

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

PURPOSE

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.

CRITERIA

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

PURPOSE

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

A. SEED MIXTURES

1. GENERAL USE

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 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.

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. 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 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: 1½ TO 3 POUNDS PER 1000 SQUARE FEET.

NOTES:

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

Hardiness Zone (from Figure B.3): 7A Seed Mixture (from Table B.3):					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K_2O	
8	TALL FESCUE	100	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 sf)
9	TALL FESCUE KENTUCKY BLUEGRASS PERENNIAL RYEGRASS	60 40 20	FEB 15–APR 30; AUG 15–OCT 31*	1/4 - 1/2 in				
11	CREEPING RED FESCUE CHEWINGS FESCUE KENTUCKY BLUEGRASS	30 30 20	FEB 15–APR 30; AUG 15–OCT 31*	1/4 - 1/2 in				

* 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 THE SECTION

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, 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 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

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 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."

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) — DATE 9/9/14

STEVEN ANDERSON JR

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 THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 9/18/2014

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

HOWARD SCD — DATE 9/30/14

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-07-14

DIRECTOR — DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

SEDIMENT & EROSION CONTROL NOTES

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
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SEAL

STATE OF MARYLAND
STEVEN R. ANDERSON
33529
PROFESSIONAL ENGINEER

BY: 9/9/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33529, EXPIRATION DATE: 10-23-2014"

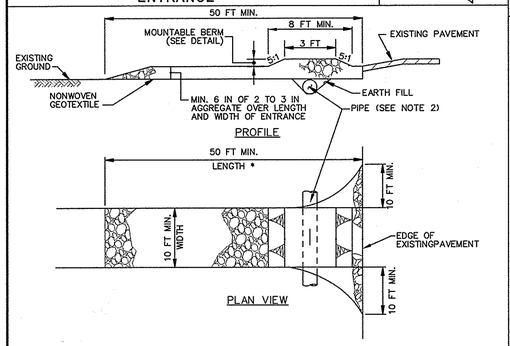
DESIGNED BY : JSN
DRAWN BY: JSN
PROJECT NO : BIEN1301
DATE : SEPTEMBER 8, 2014
SCALE : AS SHOWN
DRAWING NO. 9 OF 21

T:\PROJECTS\BIEN\BIEN1301-Nixon Solar Phase II\DESIGN\CS\C400SDP09.dwg

SDP-14-014

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL SCE



CONSTRUCTION SPECIFICATIONS

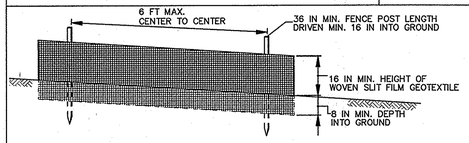
1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. 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 5:1 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 LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

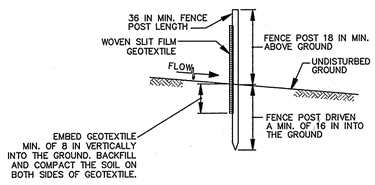
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

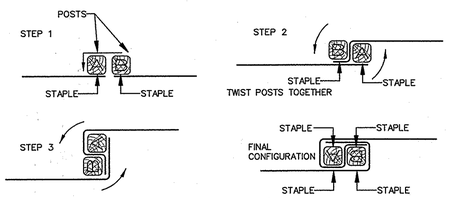
STANDARD SYMBOL —SF—



ELEVATION



CROSS SECTION



JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-1 SILT FENCE

STANDARD SYMBOL —SF—

CONSTRUCTION SPECIFICATIONS

1. USE WOOD POSTS 1¾ X 1¾ ± ⅛ INCH (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD. AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT.
2. USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
3. USE WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
4. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
5. EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
6. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
7. EXTEND BOTH ENDS OF THE 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 THE SILT FENCE.
8. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.

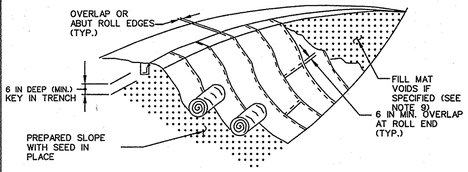
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-4-6-D PERMANENT SOIL STABILIZATION MATTING SLOPE APPLICATION

STANDARD SYMBOL PSSMS – * lb/ft² (* INCLUDE SHEAR STRESS)



ISOMETRIC VIEW

CONSTRUCTION SPECIFICATIONS

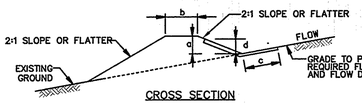
1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC, NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES OR WOOD STAKES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 0½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPE AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS, UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING DOWN SLOPE. LAY MATTING SMOOTHLY AND FIRMLY UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. OVERLAP OR ABUT EDGES OF MATTING ROLLS PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE DOWNSLOPE MAT.
7. KEY IN THE TOP OF SLOPE END OF MAT 6 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, ONCE THE MATTING IS KEYED AND STAPLED IN PLACE, FILL THE MAT VOIDS WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
10. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL A-1
PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.



CROSS SECTION

CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE

PLAN VIEW

	DIKE TYPE A	DIKE TYPE B
a – DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b – DIKE WIDTH	24 IN MIN.	36 IN MIN.
c – FLOW WIDTH	4 FT MIN.	6 FT MIN.
d – FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

A–1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)

A–2/B–2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.

A–3/B–3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
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 CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 3 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. 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 PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4), AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
5. 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 HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
6. SITE ANALYSIS:

TOTAL AREA OF SITE	109.82 ACRES
LIMIT OF WORK	37.36 ACRES
AREA DISTURBED	5.84 ACRES
AREA TO BE ROOFED OR PAVED	1.13 ACRES
AREA TO BE VEGETATIVELY STABILIZED	36.23 ACRES
TOTAL CUT	3,040 CU. YARDS
TOTAL FILL	3,810 CU. YARDS
OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT	

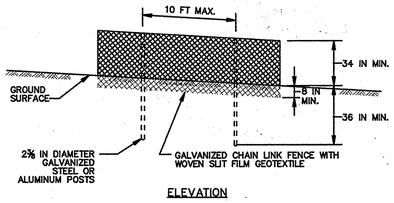
7. ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
9. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
10. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
11. ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
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 THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

SEQUENCE OF CONSTRUCTION

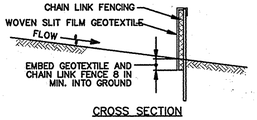
1. CONDUCT A PRE-CONSTRUCTION MEETING WITH COUNTY INSPECTOR. (1 DAY)
2. OBTAIN GRADING PERMIT. (1 DAY)
3. CLEAR AND GRUB AND INSTALL STABILIZED CONSTRUCTION ENTRANCE, CONCRETE CULVERT, AND PERIMETER SUPER SILT FENCE, EARTH DIKES, AND SILT FENCE. (2 WEEKS)
4. UPON APPROVAL OF PERIMETER CONTROL INSTALLATION BY COUNTY INSPECTOR, BEGIN ROAD CONSTRUCTION. (2 WEEKS)
5. PERFORM SOLAR ARRAY CONSTRUCTION, UNDERGROUND ELECTRIC INSTALLATION, FINE GRADING, AND OTHER CONSTRUCTION ACTIVITY. (6 MONTHS)
6. INSTALL LANDSCAPING AND STABILIZE ALL DISTURBED AREAS. (2 WEEKS)
7. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)

DETAIL E-3 SUPER SILT

STANDARD SYMBOL —SSF—



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ 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.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. 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 THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. 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

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

Definition

A mound or pile of soil protected by appropriately designed erosion and sediment control measures.

Purpose

To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.

Conditions Where Practice Applies

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

Criteria

1. The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
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 with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
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 concentrated flow in a non-erosive manner.
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 sheeting.

Maintenance

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.

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

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."

SIGNATURE OF ENGINEER (PRINT NAME BELOW SIGNATURE) STEVEN ANDERSON JR — DATE 9/9/14

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 THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT."

SIGNATURE OF DEVELOPER (PRINT NAME BELOW SIGNATURE) — DATE 09/18/2014

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

HOWARD SCD — DATE 9/30/14

FENCE

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10-07-14

DIRECTOR — DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

SEDIMENT & EROSION CONTROL DETAILS

Pennoni Associates Inc. Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — STEVEN A. ANDERSON — 33529 — PROFESSIONAL ENGINEER

BY: 9/9/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33529, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : AS SHOWN	
DRAWING NO. 10 OF 21	

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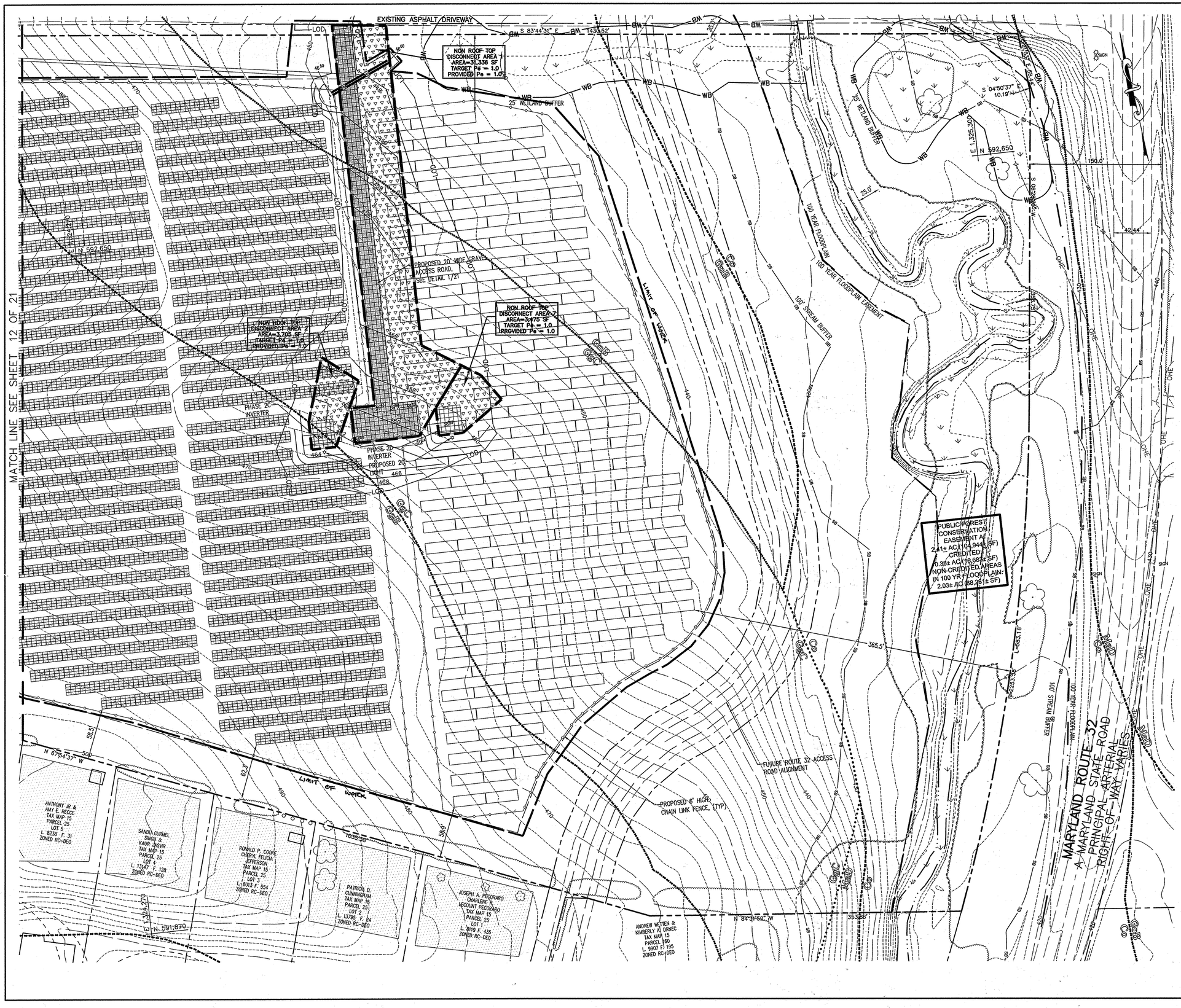

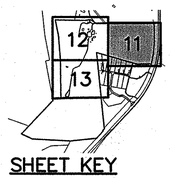

SHEET KEY

LEGEND

- IMPERVIOUS AREA
- NON-ROOFTOP DISCONNECT CREDIT (N-2)
- PROPOSED DRAINAGE DIVIDE
- PROPOSED SOLAR PANELS

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

STORMWATER MANAGEMENT PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — PETER R. ANDERSON — No. 33526 — PROFESSIONAL ENGINEER

BY: 9/9/14

"PROFESSIONAL CERTIFICATION. I HEREBY IDENTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33526, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 11 OF 21	

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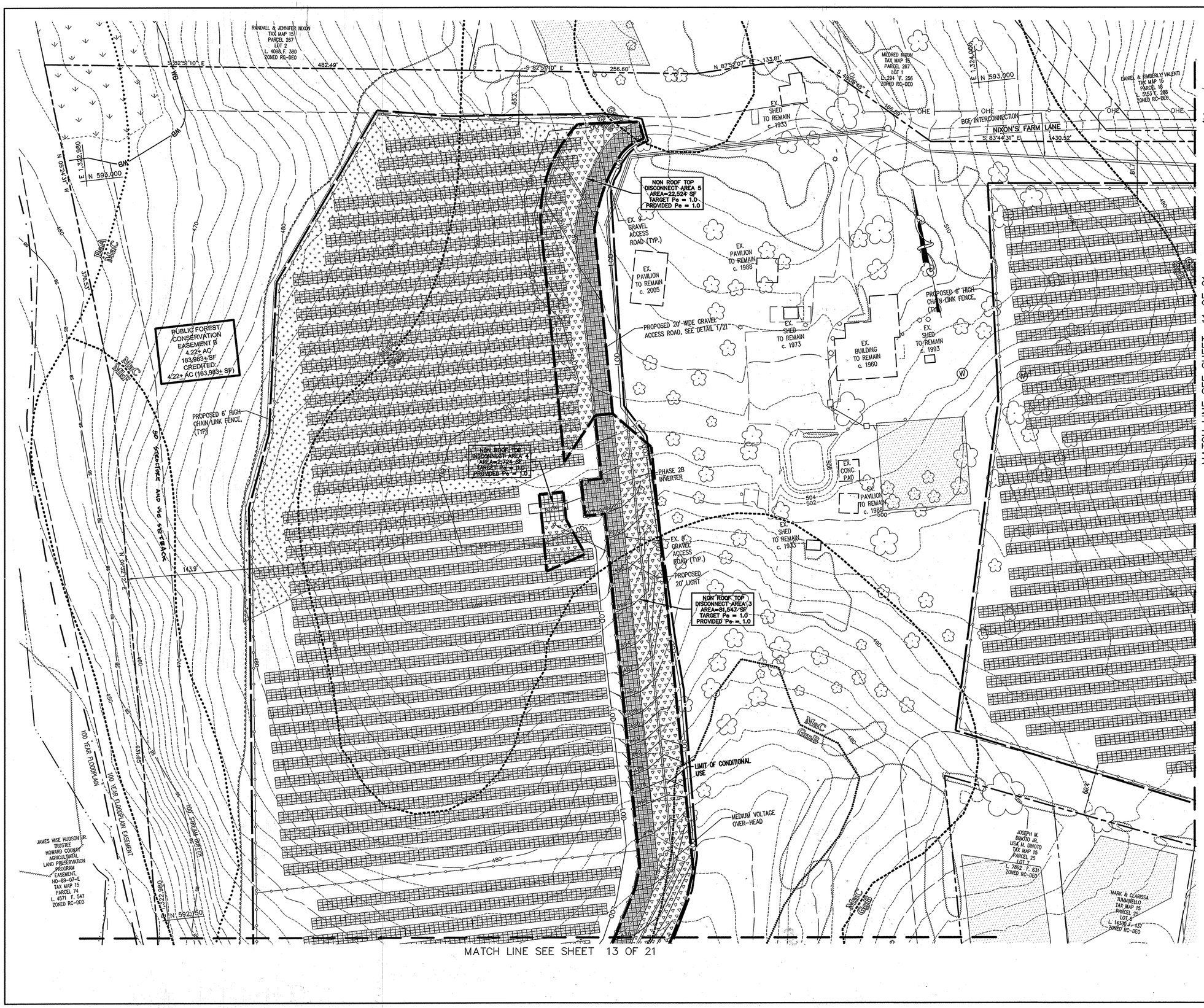
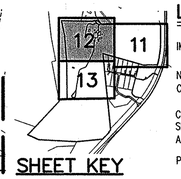
SDP-14-014





SHEET KEY

LEGEND

- IMPERVIOUS AREA
- NON-ROOFTOP DISCONNECT CREDIT (N-2)
- CONTRIBUTING AREA TO SHEETFLOW TO CONSERVATION AREA (N-3)
- PROPOSED DRAINAGE DIVIDE
- PROPOSED SOLAR PANELS

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

STORMWATER MANAGEMENT PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — STEVEN R. ANDERSON — 33529 — PROFESSIONAL ENGINEER

BY: 9/9/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33529, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 12 OF 21	

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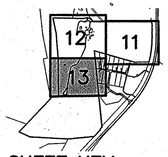
SDP-14-014

MATCH LINE SEE SHEET 12 OF 21



SHEET KEY

LEGEND

- IMPERVIOUS AREA
- NON-ROOFTOP DISCONNECT CREDIT (N-2)
- PROPOSED DRAINAGE DIVIDE
- EX. MARYLAND STATE HIGHWAY ADMINISTRATION WETLAND MITIGATION AREA (SHA PLAT #59050)
- PROPOSED SOLAR PANELS

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/9/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

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Pennoni
8818 Centre Park Drive
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Columbia, MD 21045
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F 410.997.9282

SEAL

STATE OF MARYLAND
STEVEN R. ANDERSON
33529
PROFESSIONAL ENGINEER

BY: 9/9/14

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33529, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 13 OF 21	

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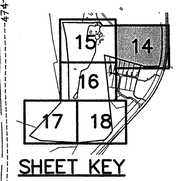
SDP-14-014



SHEET KEY

LEGEND

- PERIMETER REQUIREMENT
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED PUBLIC FOREST CONSERVATION EASEMENT (CREDITED)
- PROPOSED PUBLIC FOREST CONSERVATION EASEMENT (NON-CREDITED)
- PROPOSED PUBLIC FOREST CONSERVATION EASEMENT SIGN
- EX. 15-25% SLOPES
- EX. >25% SLOPES
- EX. STREAM
- EX. WETLANDS
- 25' WETLAND BUFFER
- EX. TREE
- EX. SPECIMEN TREE
- EX. PLANT COMMUNITY
- EX. HEDGEROW
- EX. WOODED AREA
- PROPOSED SOLAR PANELS

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 LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE — DATE 09/19/2014

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

LANDSCAPE & FOREST CONSERVATION PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DATE 9.18.14
LANDSCAPE ARCHITECT 3068 STATE OF MARYLAND
PETER J. STONE #3068

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 14 OF 21	

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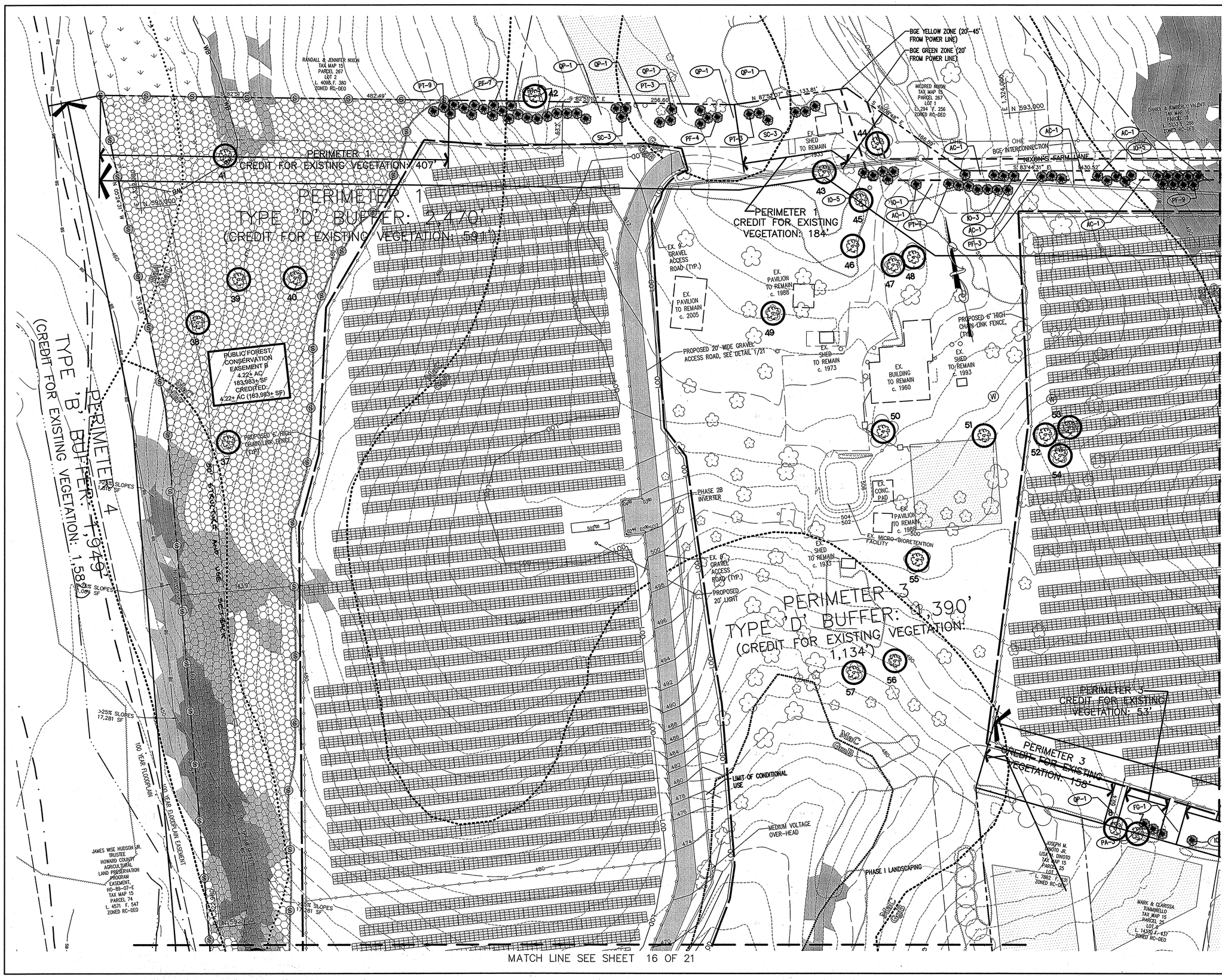
SDP-14-014



SHEET KEY

15	14
16	
17	18

LEGEND

- PERIMETER REQUIREMENT (AS-3)
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROPOSED PUBLIC FOREST CONSERVATION EASEMENT
- PROPOSED PUBLIC FOREST CONSERVATION EASEMENT SIGN (S)
- EX. 15-25% SLOPES
- EX. >25% SLOPES
- EX. STREAM
- EX. WETLANDS
- 25' WETLAND BUFFER — WB
- EX. TREE
- EX. SPECIMEN TREE (3)
- EX. PLANT COMMUNITY (F1) (P1)
- EX. HEDGEROW (H)
- EX. WOODED AREA (W)
- PROPOSED SOLAR PANELS

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 LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE — DATE 09/18/2014

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

LANDSCAPE & FOREST CONSERVATION PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DATE
LANDSCAPE ARCHITECT 3068 PETER J. STONE STATE OF MARYLAND
9-18-14
PETER J. STONE #3068

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 15 OF 21	

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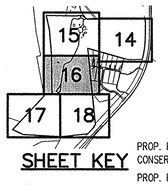

SHEET KEY

LEGEND

- PERIMETER REQUIREMENT
- PROPOSED SHADE TREE
- PROPOSED EVERGREEN TREE
- PROP. PUBLIC FOREST CONSERVATION ESMT. (CREDITED)
- PROP. PUBLIC FOREST CONSERVATION ESMT (NON-CREDITED)
- PROPOSED PUBLIC FOREST CONSERVATION EASEMENT SIGN
- EX. 15-25% SLOPES
- EX. >25% SLOPES
- EX. STREAM
- EX. WETLANDS
- 25' WETLAND BUFFER
- EX. TREE
- EX. SPECIMEN TREE
- EX. PLANT COMMUNITY
- EX. HEDGEROW
- EX. WOODED AREA
- PROPOSED SOLAR PANELS

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SIGNATURE — DATE 09/18/2014

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION & DATE 10-3-14

CHIEF, DIVISION OF LAND DEVELOPMENT DATE 10-07-14

DIRECTOR DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

THE BITH GROUP
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

PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

LANDSCAPE & FOREST CONSERVATION PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

9.18.14
DATE

PETER J. STONE #3068

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 16 OF 21	

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SDP-14-014

LEGEND

- PROPOSED PUBLIC FOREST CONSERVATION EASEMENT
- EXISTING MDSHA EASEMENT (SHA PLAT # 59050)
- PROPOSED PUBLIC FOREST CONSERVATION EASEMENT SIGN
- EX. 15-25% SLOPES
- EX. >25% SLOPES
- EX. STREAM
- EX. WETLANDS
- 25' WETLAND BUFFER
- EX. TREE
- EX. SPECIMEN TREE
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- EX. HEDGEROW
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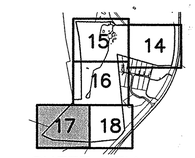

SHEET KEY

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

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BALTIMORE, MD 21201
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OWNER

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PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

FOREST CONSERVATION PLAN

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

9-18-14
LANDSCAPE ARCHITECT 3068 PETER J. STONE STATE OF MARYLAND
PETER J. STONE #3068

DESIGNED BY : JSN
DRAWN BY: JSN
PROJECT NO : BIEN1301
DATE : SEPTEMBER 8, 2014
SCALE : 1"=50'
DRAWING NO. 17 OF 21

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SDP-14-014

MATCH LINE SEE SHEET 16 OF 21

MATCH LINE SEE SHEET 17 OF 21

EXISTING MDSHA EASEMENT (SHA PLAT # 59050) 36.428± AC 1,586,804± SF

25' WETLAND BUFFER

100 YEAR FLOODPLAIN

100' STREAM BUFFER

MIDDLE PATUXENT RIVER

HOWARD COUNTY DEPT. OF RECREATION & PARKS TAX MAP 15 PARCEL 25 LOT PAR. A L. 6872 F. 284 ZONED RC-DEO

MUSSARAT JAVAID & NASIRA NAVEED TAX MAP 15 PARCEL 35 L. 10542 F. 403 ZONED RC-DEO

MARYLAND ROUTE 32
A MARYLAND STATE ROAD
PRINCIPAL ARTERIAL
RIGHT-OF-WAY VARIES

N 89°40'48" W 649.60'

S 49°00'49" W 234.25'

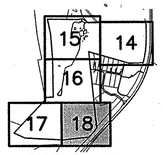
S 40°00'11" E 15.00'

S 49°00'49" W 67.46'

>25% SLOPES 506 SF
>25% SLOPES 468 SF
>25% SLOPES 800 SF
>25% SLOPES 1,029 SF
>25% SLOPES 387 SF
>25% SLOPES 201 SF
>25% SLOPES 992 SF
>25% SLOPES 1,396 SF
>25% SLOPES 1,655 SF
>25% SLOPES 157 SF
>25% SLOPES 232 SF
>25% SLOPES 1,469 SF
>25% SLOPES 437 SF
>25% SLOPES 650 SF

LEGEND

PROPOSED PUBLIC FOREST CONSERVATION EASEMENT	
EXISTING MDSHA EASEMENT (SHA PLAT # 59050)	
PROPOSED PUBLIC FOREST CONSERVATION EASEMENT SIGN	S
EX. 15-25% SLOPES	
EX. >25% SLOPES	
EX. STREAM	
EX. WETLANDS	
25' WETLAND BUFFER	
EX. TREE	
EX. SPECIMEN TREE	3
EX. PLANT COMMUNITY	F1 P1
EX. HEDGEROW	H
EX. WOODED AREA	W



SHEET KEY

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER

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PROJECT

NIXON SOLAR PHASE II (SOLAR FARM)

AREA

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

TITLE

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Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

9-10-14
DATE

LANDSCAPE ARCHITECT 3068 PETER J. STONE STATE OF MARYLAND

PETER J. STONE #3068

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : 1"=50'	
DRAWING NO. 18 OF 21	

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SDP-14-014

SCHEDULE A – PERIMETER LANDSCAPE EDGE

	ADJACENT TO PERIMETER PROPERTIES				
PERIMETER	1	2	3	4	5
LANDSCAPE TYPE	D	B	D	B	B
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	32	4	5	8	1
EVERGREEN TREES	188	5	26	10	1
FLOWERING TREES	0	0	0	0	0
SHRUBS	0	0	0	0	0
NUMBER OF PLANTS PROVIDED:					
SHADE TREES	32	4	5	8	1
EVERGREEN TREES	188	5	26	10	1
FLOWERING TREES	0	0	0	0	0
SHRUBS	0	0	0	0	0

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

PERIMETER 1 PLANT SCHEDULE

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
EVERGREEN TREES					
IO	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
PO	3	PLATANUS OCCIDENTALIS SYCAMORE	2.5–3" CAL.	B&B	AS SHOWN
EVERGREEN TREES					
PA	2	PICEA ABIES NORWAY SPRUCE	6–8' HT.	B&B	AS SHOWN
PS	1	PINUS STROBUS EASTERN WHITE PINE	6–8' 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
EVERGREEN TREES					
IO	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

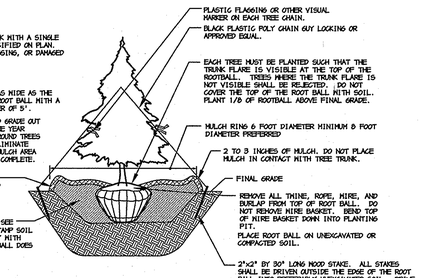
SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREES					
AR	3	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2.5–3" CAL.	B&B	AS SHOWN
PO	2	PLATANUS OCCIDENTALIS SYCAMORE	2.5–3" CAL.	B&B	AS SHOWN
QP	3	QUERCUS PHELLOS WILLOW OAK	2.5–3" CAL.	B&B	AS SHOWN
EVERGREEN TREES					
IO	2	ILEX 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	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
EVERGREEN TREES					
PS	1	PINUS STROBUS EASTERN WHITE PINE	6–8' HT.	B&B	AS SHOWN

NOTES:

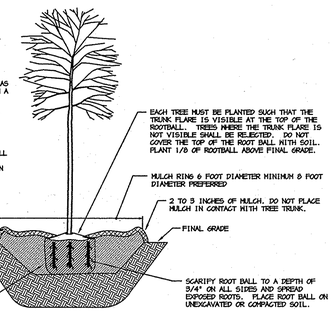
1. SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERWISE SPECIFIED ON PLAN. PLANTS WITH CO-DOMINANT, MISSING, OR DAMAGED LEADERS SHALL BE REJECTED.
2. STAKE TREES AS SHOWN.
3. DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
4. CONTRACTOR TO REMOVE AND GRADE OUT PLANTING SAUCER AT END OF ONE YEAR MAINTENANCE PERIOD. AREA AROUND TREES SHALL BE GRADED SMOOTH TO ELIMINATE MOUNDING. CONTRACTOR TO REHULCH AREA AROUND TREE WHEN GRADING IS COMPLETE.



EVERGREEN B&B TREE PLANTING DETAIL
NOT TO SCALE

NOTES:

1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY GROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
2. STAKE TREES AS SHOWN ON B&B DETAIL.
3. DIG PLANTING PIT TWO AND A HALF TIMES AS WIDE AS THE DIAMETER OF THE CONTAINER WITH A MINIMUM PLANTING PIT DIAMETER OF 30".
4. REMOVE CONTAINER JUST BEFORE PLANTING. INSPECT HEALTH OF ROOTS. REJECT MATERIAL WITH UNHEALTHY OR INSUFFICIENT ROOTS.
5. CONTRACTOR TO REMOVE AND GRADE OUT PLANTING SAUCER AT END OF ONE YEAR MAINTENANCE PERIOD. AREA AROUND TREES SHALL BE GRADED SMOOTH TO ELIMINATE MOUNDING. CONTRACTOR TO REHULCH AREA AROUND TREE WHEN GRADING IS COMPLETE.

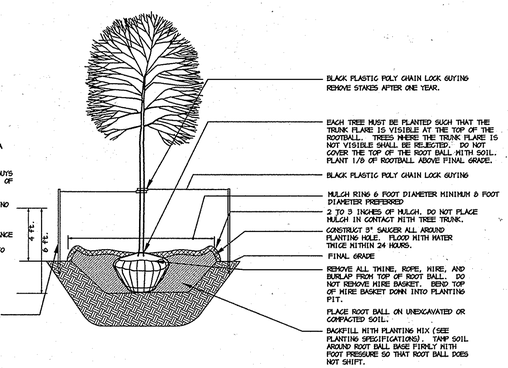


CONTAINERIZED TREE PLANTING DETAIL
NOT TO SCALE

NOTES:

1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY GROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
2. STAKE TREES AS SHOWN.
3. DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
4. TIGHTEN GUYS ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. GUYS SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES.
5. TUCK ANY LOOSE ENDS OF THE GUY SO THAT NO LOOSE ENDS ARE EXPOSED.
6. CONTRACTOR TO REMOVE AND GRADE OUT PLANTING SAUCER AT END OF ONE YEAR MAINTENANCE PERIOD. AREA AROUND TREES SHALL BE GRADED SMOOTH TO ELIMINATE MOUNDING. CONTRACTOR TO REHULCH AREA AROUND TREE WHEN GRADING IS COMPLETE.

INSTALL TWO STAKES ON OPPOSITE SIDES OF TREE, PARALLEL TO THE DIRECTION OF THE PREVAILING WINTER WINDS, UNLESS OTHERWISE DIRECTED BY LANDSCAPE ARCHITECT. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL INTO PREFERABLY UNEXCAVATED SOIL.



DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)
NOT TO SCALE

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

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 LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE — DATE 09/18/2014

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
   0 ORNAMENTAL TREES @ $150 = $0.00
   230 EVERGREEN TREES @ $150 = $34,500.00
   0 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.

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

DEVELOPER
THE BITH GROUP
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

PROJECT
NIXON SOLAR
PHASE II
(SOLAR FARM)

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

TITLE
LANDSCAPE NOTES AND DETAILS

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

9-18-14
DATE
LANDSCAPE ARCHITECT 3068 PETER J. STONE STATE OF MARYLAND
PETER J. STONE #3068

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : AS SHOWN	
DRAWING NO. 19 OF 21	

T:\PROJECTS\BIEN\BIEN1301-Nixon Solar Phase II\DESIGN\CS\CADSDP19.dwg

SDP-14-014

SPECIMEN TREE TABLE

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
10	BLACK LOCUST (Robinia pseudoacacia)	30"	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
21	TULIP POPLAR (Liriodendron tulipifera)	30"	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
34	WHITE OAK (Quercus alba)	35"	GOOD	REMAIN
35	WHITE OAK (Quercus alba)	38"	GOOD	REMAIN
36	RED OAK (Quercus rubra)	30"	GOOD	REMAIN
37	RED OAK (Quercus rubra)	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
46	RED OAK (Quercus rubra)	31"	GOOD	REMAIN
47	BLACK CHERRY (Prunus serotina)	31"	GOOD	REMAIN
48	SHELLBARK HICKORY (Carya laciniosa)	64"	GOOD	REMAIN
49	BLACK CHERRY (Prunus serotina)	33"	GOOD	REMAIN
50	SYCAMORE (Platanus occidentalis)	40"	GOOD	REMAIN
51	RED MAPLE (Acer rubrum)	38"	GOOD	REMAIN
52	RED MAPLE (Acer rubrum)	36"	GOOD	REMAIN
53	RED MAPLE (Acer rubrum)	34"	GOOD	REMAIN
54	RED MAPLE (Acer rubrum)	34"	GOOD	REMAIN
55	RED MAPLE (Acer rubrum)	31"	GOOD	REMAIN
56	SYCAMORE (Platanus occidentalis)	34"	GOOD	REMAIN
57	BLACK LOCUST (Robinia pseudoacacia)	30"	GOOD	REMAIN

Howard County Forest Conservation Worksheet

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

			Acres
Net Tract Area			
A.	*Total Tract Area*	A =	109.82
B.	*Floodplain Area*	B =	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 Category:			
D.	*Afforestation Threshold* (Net Tract Area X 15%)	E =	6.36
E.	*Conservation Threshold* (Net Tract Area X 15%)	F =	6.36
Existing Forest Cover			
F.	***Existing Forest Cover within the Net Tract Area***	G =	6.79
G.	*Area of Forest Above Conservation Threshold* If the Existing Forest Cover (F) is greater than Conservation Threshold (G), then G = Existing Forest Cover (F) - Conservation Threshold (E); Otherwise G = 0	H =	0.43
Break Even Point			
H.	*Break Even* (Amount of forest that must be retained so that no mitigation is required) (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)	I =	6.44
I.	*Forest Clearing Permitted Without Mitigation* I = Existing Forest Cover (F) - Break Even Point (H)	J =	0.35
Proposed Forest Clearing			
J.	***Total Area of Forest to be Cleared***	K =	0.00
K.	*Total Area of Forest to be Retained* K = Existing Forest Cover (F) - forest to be cleared (J)	L =	6.79
Planting Requirements			
If the Total Area of Forest to be Cleared (K) is at or above the Breakeven Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=0, P=0); If not, calculate the planting requirement below:			
L.	*Reforestation for Clearing Above the Conservation Threshold* (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 =	0.00
M.	*Reforestation for Clearing Below the Conservation Threshold* (1) if Existing Forest Cover (F) is greater than Conservation Threshold (E) and the 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 X Forest to be cleared (J).	N =	0.00
N.	*Credit for Retention Above the Conservation Threshold* If the area of forest to be retained (K) is greater than the Conservation Threshold (E), then N = K - E	O =	0.43
P.	*Total Reforestation Required* P = L + M - N	P =	0.00
Q.	*Total Afforestation Required* (1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then Q = the Afforestation Threshold (D) - the Existing Forest Cover (F)	Q =	0.00
R.	*Total Planting Requirement* R = P + 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

FOREST CONSERVATION EASEMENT TABLE

CONSERVATION TYPE	AREA	ACRES CREDITED	ACRES NON-CREDITED	ACRES TOTAL
1. ON-SITE RETENTION				
	A	0.38 ACRES	2.03 ACRES	2.41 ACRES
	B	4.22 ACRES	0.00 ACRES	4.22 ACRES
	C	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
Co	CODORUS AND HATBORO SILT LOAM	VERY LIMITED	LOW	YES	0-3%	C & D
GgA	GLENELG LOAM	NOT LIMITED	LOW	NO	0-3%	B
GgB	GLENELG LOAM	NOT LIMITED	MODERATE	NO	3-8%	B
GgC	GLENELG LOAM	SOMEWHAT LIMITED	MODERATE	NO	8-15%	B
GmB	GLENVILLE SILT LOAM	VERY LIMITED	MODERATE	NO	3-8%	C
GnB	GLENVILLE-BAILE SILT LOAMS	VERY LIMITED	MODERATE	YES	0-8%	C
GoB	GLENVILLE-CODORUS SILT LOAMS	VERY LIMITED	MODERATE	NO	0-8%	C
Ha	HATBORO-CODORUS SILT LOAMS	VERY LIMITED	LOW	YES	0-3%	D
MaB	MANOR LOAM	NOT LIMITED	MODERATE	NO	3-8%	B
MaC	MANOR LOAM	SOMEWHAT LIMITED	MODERATE	NO	8-15%	B
MaD	MANOR LOAM	VERY LIMITED	HIGH	NO	15-25%	B
MkF	MANOR-BRINKLOW COMPLEX	VERY LIMITED	HIGH	NO	25-65%	B

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 SERVICE 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.

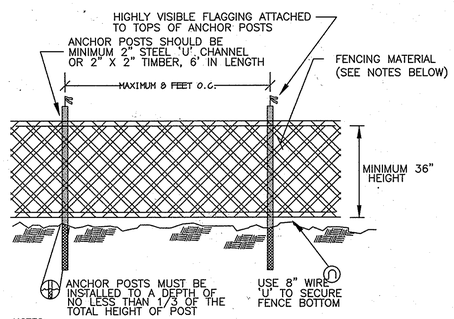
9. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY PRESERVING 8.86 ACRES OF FOREST (6.79 ACRES OF CREDITED ON-SITE RETENTION AND 2.07 ACRES OF NON-CREDITED ON-SITE RETENTION) AND BY EXCEEDING THE BREAK-EVEN POINT OF 6.44 ACRES. NO FOREST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

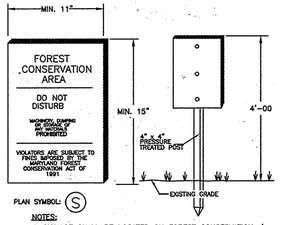
12. THE BOUNDARY OF THE PROPOSED FOREST CONSERVATION EASEMENTS ARE IDENTIFIED ON FINAL PLAT SDP-14-014FC WITH BEARINGS AND DISTANCES UNDER PLAT NO.'S 22955-22957.

13. JUSTIFICATION FOR FOREST RETENTION: 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.



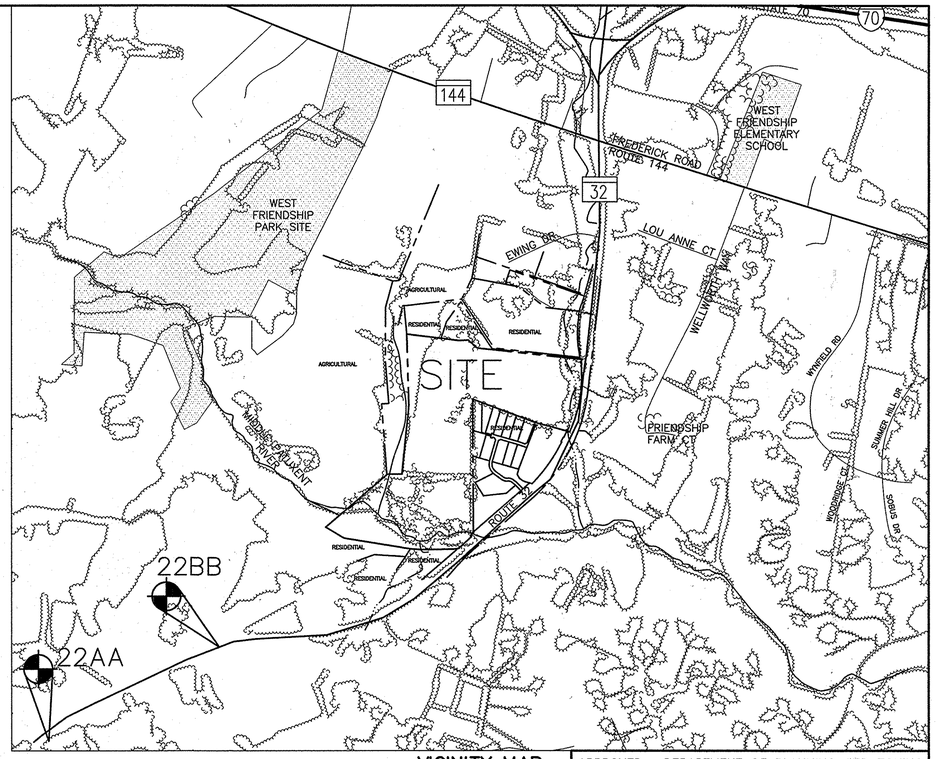
NOTES:
BLAZE ORANGE MESH OR SUPER SILT FENCE FOR TREE PROTECTION DEVICE, ONLY.
BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED PRIOR TO GRADING AND SEDIMENT CONTROL.
AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING
NOT TO SCALE



NOTES:
1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION / REFORESTATION / AFFORESTATION EASEMENT BORDER.
2. SEE PLAN FOR SPACING.
3. SIGNAGE WILL REMAIN IN PLACE IN PERPETUITY.

FOREST CONSERVATION & REFORESTATION SIGN DETAIL
NOT TO SCALE



VICINITY MAP

SCALE: 1"=1000'
COPYRIGHT ADC THE MAP PEOPLE
ADC MAP 18 GRIDS 4B, 4C, 5A, & 5B,
PERMITTED USE NO. 20894285

PLANT COMMUNITY SUMMARY TABLE

SYMBOL	COMMUNITY	AREA	PRIORITY RETENTION
F1	FOREST	2.43 Ac.±	MEDIUM
F2	FOREST	4.40 Ac.±	HIGH
F3	FOREST	19.64 Ac.±	HIGH

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

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/07/14

DATE	NO.	REVISION

DEVELOPER
THE BITH GROUP
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

PROJECT
NIXON SOLAR PHASE II (SOLAR FARM)

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

TITLE
FOREST CONSERVATION NOTES AND DETAILS

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

9.18.14
PETER J. STONE #3068

DESIGNED BY : JSN
DRAWN BY: JSN
PROJECT NO : BIEN1301
DATE : SEPTEMBER 8, 2014
SCALE : AS SHOWN
DRAWING NO. 20 OF 21

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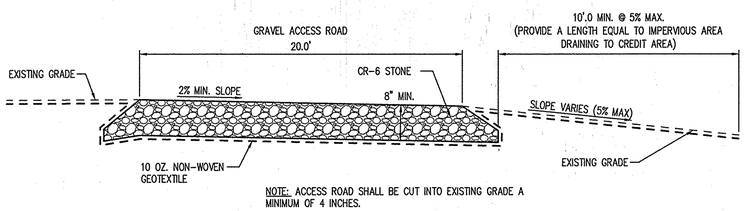
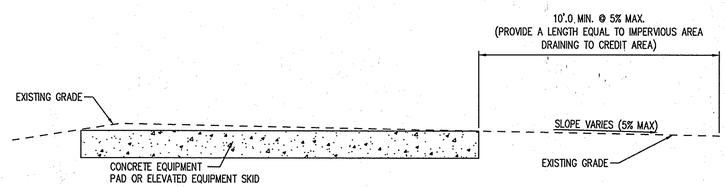
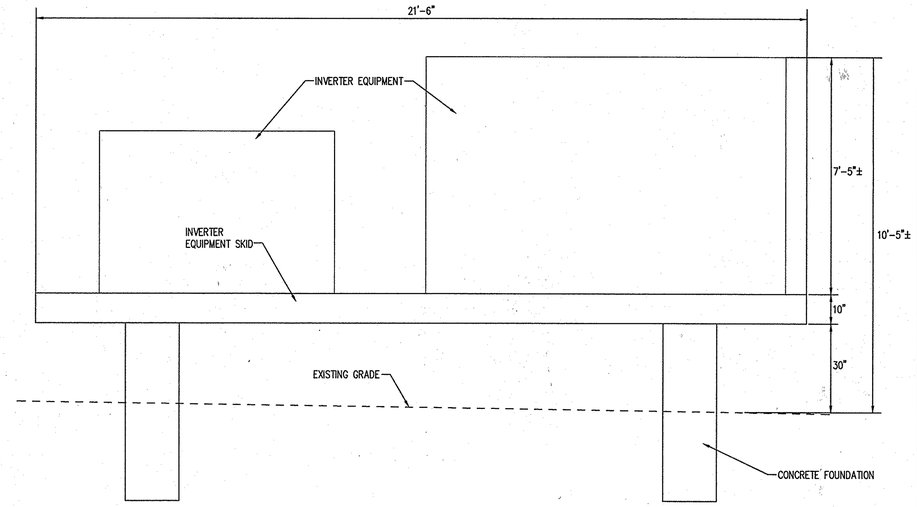


1/21 NON-ROOFTOP DISCONNECTION DETAIL – ROAD
NOT TO SCALE



2/21 NON-ROOFTOP DISCONNECTION DETAIL – PAD
NOT TO SCALE



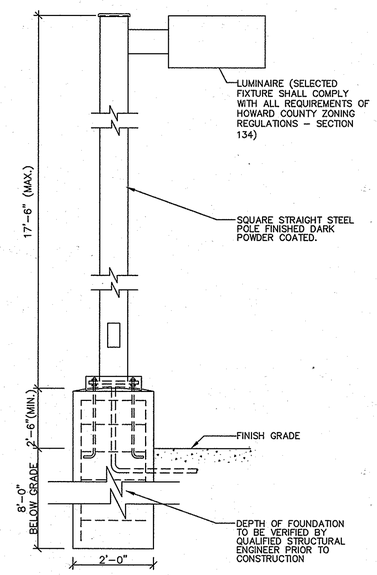
3/21 TYPICAL INVERTER ELEVATION
NOT TO SCALE

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

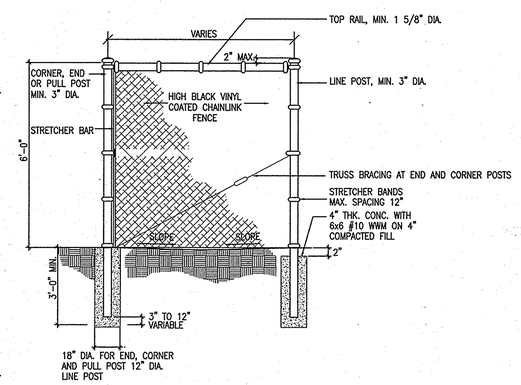
MAINTENANCE OF AREAS RECEIVING DISCONNECTED RUNOFF IS GENERALLY NO DIFFERENT THAN THAT REQUIRED FOR OTHER LAWN OR LANDSCAPED AREAS. THE OWNER SHALL ENSURE THE AREAS RECEIVING RUNOFF ARE PROTECTED FROM FUTURE COMPACTION OR DEVELOPMENT OF IMPERVIOUS AREA. IN COMMERCIAL AREAS, FOOT TRAFFIC SHOULD BE DISCOURAGED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

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SHEETFLOW TO CONSERVATION AREA (N-3)

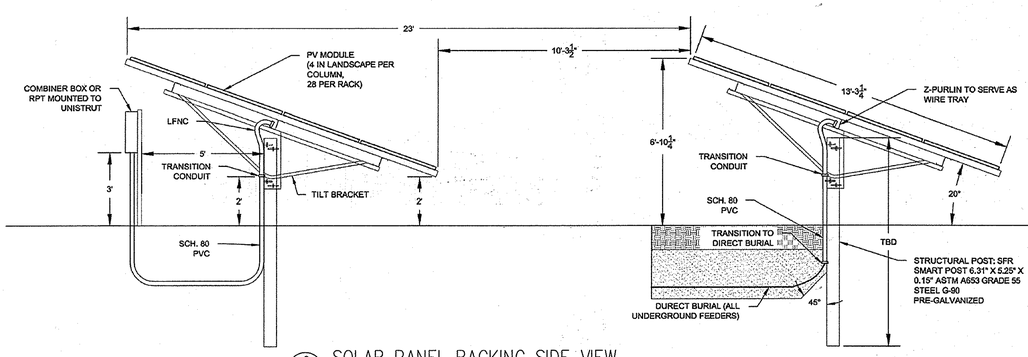
CONSERVATION AREAS SHALL REMAIN UNDISTURBED AND UNMANAGED OTHER THAN ROUTINE DEBRIS REMOVAL AND REPAIRING AREAS OF CONCENTRATED FLOW. INVASIVE AND NOXIOUS PLANT REMOVAL AND BI-ANNUAL MOWING FOR MEADOW AREAS MAY BE NEEDED. SIGNS DELINEATING THE LIMITS OF THE CONSERVATION AREA SHOULD BE MAINTAINED AND SUPPLEMENTAL PLANTINGS PERFORMED AS NEEDED.



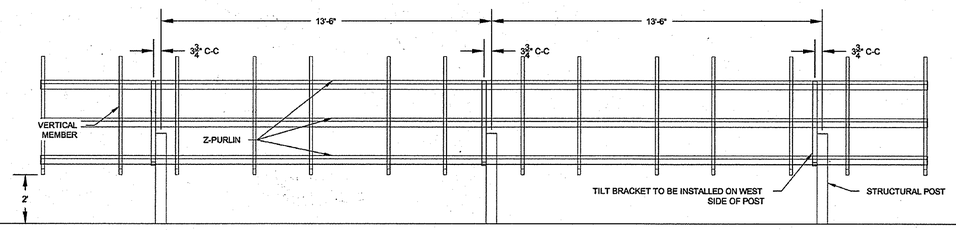
4/21 LIGHTING STANDARD ELEVATION
NOT TO SCALE



5/21 TYPICAL CHAIN LINK FENCE
NOT TO SCALE



6/21 SOLAR PANEL RACKING SIDE VIEW
NOT TO SCALE



7/21 SOLAR PANEL RACKING FRONT VIEW
NOT TO SCALE

APPROVED : DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-3-14
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10-07-14
DIRECTOR	DATE 10/8/14

DATE	NO.	REVISION

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

TITLE
SITE DETAILS

Pennoni Associates Inc.
Consulting Engineers
Pennoni
8818 Centre Park Drive
Suite 200
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND
STEVEN R. ANDERSON
33529
PROFESSIONAL ENGINEER
BY: 9/9/14
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 33529, EXPIRATION DATE: 10-23-2014"

DESIGNED BY : JSN	
DRAWN BY: JSN	
PROJECT NO : BIEN1301	
DATE : SEPTEMBER 8, 2014	
SCALE : AS SHOWN	
DRAWING NO. 21 OF 21	

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SDP-14-014