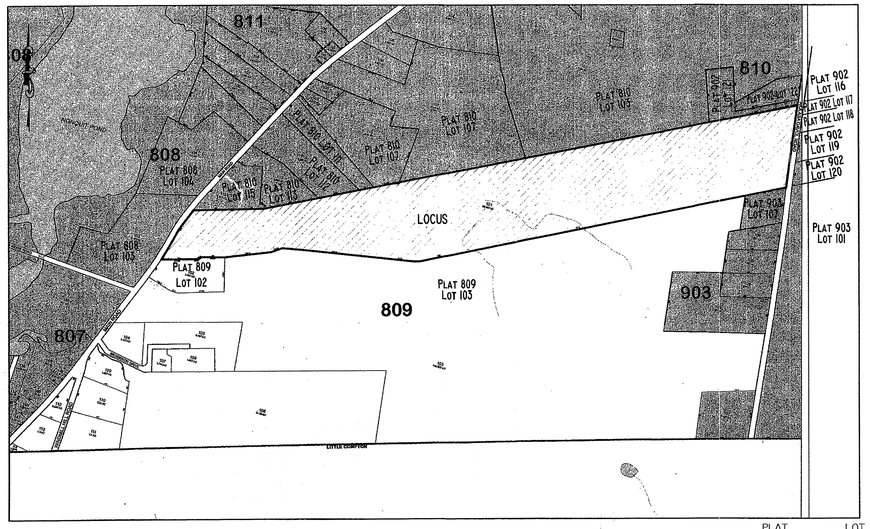
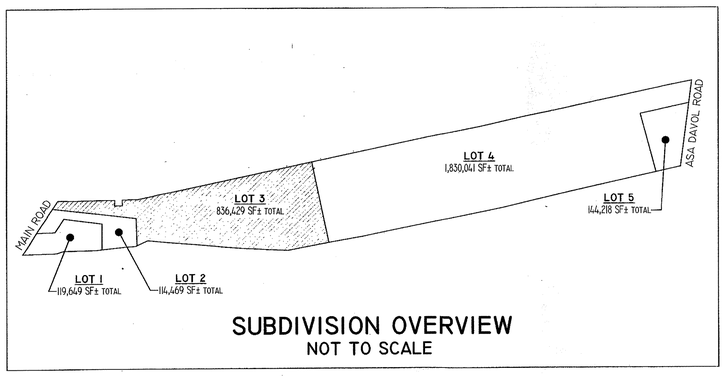
SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT
LARGE SYSTEM CATEGORY
PRELIMINARY PLAN
COOK FARM SOLAR PROJECT

PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND

SHEET INDEX



ASSESSORS PLAT 809
NOT TO SCALE

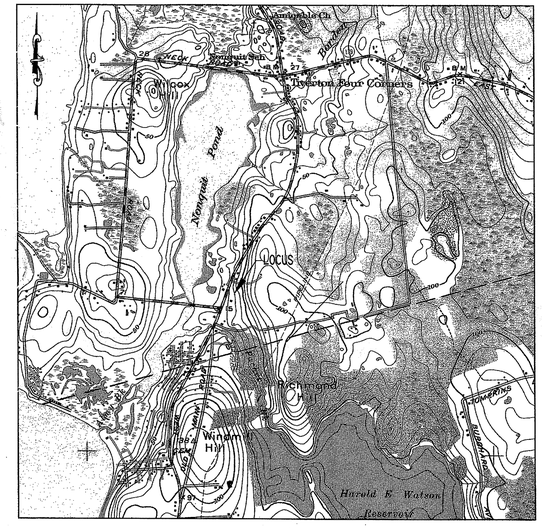


SUBDIVISION OVERVIEW
NOT TO SCALE

LIST OF ABUTTERS WITHIN 200'*

PLAT	LOT	OWNER
809	102	EDWARD L. & MICHELLE E. FISHER 4398 MAIN ROAD TIVERTON, RI 02878
809 903	103 101	STATE OF RI & PROV. PLANTATIONS 235 PROMENADE STREET PROVIDENCE, RI 02908-5767
808	103	MARK & SHARON MOORE 3119 MAIN ROAD TIVERTON, RI 02878
808	104	CAROL LEES WILLIAMS, ET ALS c/o CAROL L. WILLIAMS P.O. BOX 69 NEW LEBANON, NY 12125
810	103	RONALD G. POTTER, TRUSTEE ELAINE M. POTTER, TRUSTEE 70 LAKE ROAD TIVERTON, RI 02878
810	107	JEREMY & PAULA SAGER 4202 MAIN ROAD TIVERTON, RI 02878
810	110	BRADFORD E. DOWTY 4226 MAIN ROAD TIVERTON, RI 02878
810	111	BRIAN D. & SHIRLEY A. DUPERE 4230 MAIN DRIVE TIVERTON, RI 02878
810	112	MARCO DIRKS 4240 MAIN ROAD TIVERTON, RI 02878
810	113	WILLIAM P. & AMY R. DEVEREAUX 30 LINCOLN DRIVE N. SMITHFIELD, RI 02896
810	115	JAI-LEE EGNA & VINCENT CAVALLO 4340 MAIN ROAD TIVERTON, RI 02878
902	116	ROBERT R. QUINTIN 330 EIGHT ROD WAY TIVERTON, RI 02878
902	117	PAUL M. TRUPPI & DONNA M. GOULET-TRUPPI 408 ASA DAVOL ROAD TIVERTON, RI 02878
902	118	LOUIS R. III & LEIGH L. LYMAN, TRUSTEES 420 ASA DAVOL ROAD TIVERTON, RI 02878
902	119	WILLIAM J. & MARY L. WALKER 440 ASA DAVOL ROAD TIVERTON, RI 02878
902	120	JON DANIEL & LINDSAY K. SMITH 466 ASA DAVOL ROAD TIVERTON, RI 02878
902	121	BRUCE J. & SUSAN M. BETTENCOURT 403 ASA DAVOL ROAD TIVERTON, RI 02878
902	122	JOANNE BETTENCOURT, TRUSTEE 391 ASA DAVOL ROAD TIVERTON, RI 02878
903	107	JAMES F. DIOTTE & ROBIN P. TOSTE 495 ASA DAVOL ROAD TIVERTON, RI 02878
808	102	CITY OF NEWPORT, DEPARTMENT OF WATER 70 HALSEY STREET NEWPORT, RI 02840
808	102-001	STATE OF RI & PROV. PLANTATIONS DEPARTMENT OF NATURAL RESOURCES DIVISION OF PLANNING DEVELOPMENT 83 PARK STREET PROVIDENCE, RI 02908
		TOWN OF LITTLE COMPTON, RI ADMINISTRATIVE OFFICE PLANNING BOARD P.O. BOX 226 LITTLE COMPTON, RI 02837

* SOURCE: TIVERTON ASSESSOR'S OFFICE



GEODETIC MAP
1" = 2080'±

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO GAIN PRELIMINARY PLAN APPROVAL FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT IN THE LARGE SYSTEM CATEGORY IN ACCORDANCE WITH TIVERTON ZONING REGULATIONS, UNDER ARTICLE XXIV SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS, FOR PROPOSED LOT 3 AS SHOWN ON THIS PLAN. THE PHOTVOLTAIC SYSTEM SHALL CONSIST OF APPROXIMATELY 314 ARRAYS, WITH 12 TO 24 PHOTOVOLTAIC MODULES PER ARRAY, FOR A TOTAL OF 7,368 PHOTVOLTAIC MODULES. THE 7,368 PHOTOVOLTAIC MODULES WILL GENERATE APPROXIMATELY 2,873 KW OF ELECTRICITY. THE PHOTOVOLTAIC SYSTEM SHALL BE INSTALLED ON PROPOSED LOT 3 WHICH IS APPROXIMATELY 19.1 ACRES IN SIZE.
NOTE LOTS 1, 2, 3, & 4 AS SHOWN ARE PART OF A 5 LOT RURAL FRONTAGE SUBDIVISION FOR FOGLAND, LLC. CURRENTLY IN THE PERMITTING PROCESS. PROPOSED LOTS 1, 2, 4 & 5 (LOT 5 NOT SHOWN) ARE NOT PART OF THE SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT.

WILLIAM F. SMITH
No. #5084
REGISTERED PROFESSIONAL ENGINEER

REVISIONS:
#2; 06/06/19: REVISE PURPOSE STATEMENT
#1; 04/09/19: NO REVISIONS THIS SHEET

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
COVER SHEET
PREPARED FOR
COOK FARM SOLAR PROJECT
ASSESSORS PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND
OWNER/APPLICANT:
FOGLAND, LLC. (C/O DEBORAH SANFORD)
75 SEARS ROAD
SOUTHBOROUGH, MA 01772
SCALE: AS NOTED DATE: MARCH 8, 2019

Civil Engineering Concepts, Inc.
34A MAIN STREET
LITTLE COMPTON, RI 02837
PH: (401) 592-0177
FAX: (401) 592-0178
P.O. BOX 5323
NEW BEDFORD, MA. 02742
(508) 990-4900
JOB#: 03-043 EMAIL: wsmithcec@aol.com

C-1

LINE TABLE

LINE	BEARING	DISTANCE
L1	S 01°41'04" E	44.33'
L2	S 88°33'56" W	61.96'
L3	N 01°38'28" E	44.75'
L4	N 89°30'34" E	10.01'
L5	S 87°38'05" W	10.00'

NOTES:

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO GAIN PRELIMINARY PLAN APPROVAL FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT IN THE LARGE SYSTEM CATEGORY IN ACCORDANCE WITH TIVERTON ZONING REGULATIONS, UNDER ARTICLE XXIV SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS, FOR PROPOSED LOT 3 AS SHOWN ON THIS PLAN. THE PHOTOVOLTAIC SYSTEM SHALL CONSIST OF APPROXIMATELY 314 ARRAYS, WITH 12 TO 24 PHOTOVOLTAIC MODULES PER ARRAY, FOR A TOTAL OF 7,368 PHOTVOLTAIC MODULES. THE 7,368 PHOTOVOLTAIC MODULES WILL GENERATE APPROXIMATELY 2,873 kW OF ELECTRICITY. THE PHOTOVOLTAIC SYSTEM SHALL BE INSTALLED ON PROPOSED LOT 3 WHICH IS APPROXIMATELY 19.1 ACRES IN SIZE.
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1) OWNER: FOGLAND, LLC.
c/o DEBORAH SANFORD
75 SEARS ROAD
SOUTHBORO, MA 01772

2) ASSESSORS REFERENCE: PLAT 809 LOT 101

3) ZONE: R-80

4) THE SUBJECT PARCEL IS LOCATED WITHIN THE NONQUIT POND WATERSHED OVERLAY PROTECTION DISTRICT AND IS SUBJECT TO THE PROVISIONS THEREOF. AN ENVIRONMENTAL REVIEW STATEMENT (ERS) HAS BEEN APPROVED BY THE TIVERTON PLANNING BOARD.

5) WETLAND DELINEATION PERFORMED BY NATURAL RESOURCE SERVICES, INC. AND HAS BEEN VERIFIED BY RIDEM.

6) PROPOSED LOT 3 IS LOCATED IN A ZONE X, AREA OF MINIMAL FLOOD HAZARD, AS INDICATED ON FEMA FIRM MAP 44005C0112J, EFFECTIVE DATE 9/4/2013.

7) THIS PLAN IS A PRELIMINARY PLAN OF A PROPOSED SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT - LARGE SYSTEM, CONSISTING OF A SOLAR PHOTOVOLTAIC GROUND MOUNTED SYSTEM.

8) ZONING REQUIREMENTS FOR R-80 SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS:
R-80
SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS
LARGE SYSTEM
MINIMUM SETBACK = 50 FEET
LOT COVERAGE = NO LIMIT FOR LARGE SYSTEM

9) SOLAR RACKING SHALL BE INSTALLED ON REMOVABLE GALVANIZED STEEL GROUND SCREW FOUNDATIONS.

10) AREAS BETWEEN AND AROUND SOLAR ARRAYS TO BE PLANTED WITH POLLINATOR HABITAT VEGETATION MIX.

11) THE EXISTING VEGETATION WITHIN A 20' WIDE MINIMUM VEGETATIVE BUFFER (30' PROPOSED) SHALL BE MAINTAINED AT AT MINIMUM HEIGHT OF 6', WITHIN THE 50' SETBACK, PER TIVERTON ZONING ARTICLE 24, SECTION 7, 7 E (2).

12) SITE IS SERVICED BY OVERHEAD ELECTRIC, TELEPHONE, & CATV ON MAIN ROAD. UNDERGROUND UTILITIES WILL BE INSTALLED ON-SITE.

13) NO OWTS IS PROPOSED FOR THE SOLAR SYSTEM DEVELOPMENT.

14) A DEED RESTRICTION SHALL BE RECORDED THAT NO FURTHER SUBDIVISION OF THE LOTS IS ALLOWED PURSUANT TO THE RELEVANT PROVISIONS CONTAINED WITHIN THE TOWN OF TIVERTON LAND DEVELOPMENT & SUBDIVISION REGULATIONS AND THE TOWN OF TIVERTON ZONING ORDINANCE.

15) SEE SHEET C-4 FOR ADDITIONAL NOTES AND RESTRICTIONS.

SURVEY REFERENCES

PLAN ENTITLED: "SURVEY PLAN OF PARCEL "B" PLAT 2-1 BLOCK 25 LOT 29 TOWN OF TIVERTON, RI", PREPARED BY SEIGMUND AND ASSOCIATES AND FILED IN PLAN BOOK 20 ON PAGES 45-51.

PLAN ENTITLED: "PLAN OF LAND FRANCIS E. & DELIA S. COTTA BLOCK 125 CARD 28 ASA DAVOL ROAD & MAIN ROAD TIVERTON, RHODE ISLAND", DATED APRIL 10, 2000 AND PREPARED BY CIVIL ENGINEERING CONCEOTS, INC. (DONALD J. MEDEIROS, PLS)

CERTIFICATION

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON NOVEMBER 25, 2015, AS FOLLOWS:

TYPE	COMPREHENSIVE BOUNDARY SURVEY
CLASS	CLASS I (UNLESS NOTED OTHERWISE)
VERTICAL CONTROL STANDARD	V-4
TOPOGRAPHIC SURVEY ACCURACY	T-3*

PURPOSE
THIS PLAN AND SURVEY WERE PREPARED TO ACCOMPANY AN APPLICATION FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN.
*THE TOPOGRAPHY WAS TAKEN FROM THE RIGIS DATABASE AND FIELD VERIFIED.

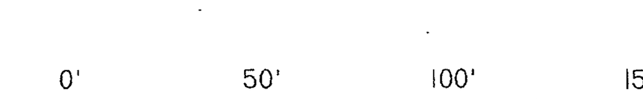
Patricia A. Kelly 6/25/19
PATRICIA A. KELLY, PLS #1968 COA #A402

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
REVIEWED SITE PLAN APPLICATION NO. 19-0091
DATED JUL 2 3 2019
SEE LETTER OF SAME DATE.

Environmental Management
JUN 2 7 2019
Office of Water Resources

LEGEND

- EXISTING 2' CONTOUR (RIGIS)
- STONE WALL
- DELINEATED WETLAND EDGE
- 50' PERIMETER WETLAND
- 100' TOWN RURAL SUBDIVISION SETBACK TO WETLANDS
- UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- CONCRETE BOUND OR MONUMENT TO BE SET
- PROPOSED COMMON DRIVEWAY, UTILITY, DRAINAGE & CEMETERY ACCESS EASEMENT
- 50' SOLAR ARRAY SETBACK
- APPROXIMATE EDGE OF VEGETATION



GRAPHIC SCALE

PATRICIA A. KELLY
1968
PROFESSIONAL LAND SURVEYOR
6/25/19

REVISIONS:
#1; 04/09/19: NO REVISIONS THIS SHEET
#2; 06/06/19: REVISE NOTES

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
PROPOSED LOT 3 LAYOUT PLAN
PREPARED FOR
COOK FARM SOLAR PROJECT
ASSESSORS PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND
OWNER/APPLICANT:
FOGLAND, LLC. (c/o DEBORAH SANFORD)
75 SEARS ROAD
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SCALE: AS NOTED
DATE: MARCH 8, 2019

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FAX: (401) 592-0178
P.O. BOX 5323
NEW BEDFORD, MA. 02742
(508) 990-4900
EMAIL: wsmithcec@aol.com

JOB#: 03-043

C-2

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO GAIN PRELIMINARY PLAN APPROVAL FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT IN THE LARGE SYSTEM CATEGORY IN ACCORDANCE WITH TIVERTON ZONING REGULATIONS, UNDER ARTICLE XXIV SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS, FOR PROPOSED LOT 3 AS SHOWN ON THIS PLAN. THE PHOTOVOLTAIC SYSTEM SHALL CONSIST OF APPROXIMATELY 314 ARRAYS, WITH 12 TO 24 PHOTOVOLTAIC MODULES PER ARRAY, FOR A TOTAL OF 7,368 PHOTVOLTAIC MODULES. THE 7,368 PHOTOVOLTAIC MODULES WILL GENERATE APPROXIMATELY 2,873 kW OF ELECTRICITY. THE PHOTOVOLTAIC SYSTEM SHALL BE INSTALLED ON PROPOSED LOT 3 WHICH IS APPROXIMATELY 19.1 ACRES IN SIZE.
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MAGNETIC - 2018
TRUE NORTH

PLAT 810 LOT 107
N/F JEREMY & PAULA SAGER

PLAT 810 LOT 110
N/F BRADFORD E. DOWTY

PLAT 810 LOT 111
N/F BRIAN L. & SHARON A. BURKE

PLAT 810 LOT 1122
N/F MARCO DIRKS

S 78°W 1240'± (CLASS IV SURVEY STANDARD)
921'±
519'±
S 79°07'44" W 72.65
S 77°25'01" W 93.60'
S 78°00'04" W 945.29'
N 12°01'14" W 655'± (CLASS IV STANDARD)
N 38°02'32" W 727.00' (THE COURSE ONLY)
N 79°05'48" E 383.31'
330.34'
52.97'
N 80°16'10" E 216.55'
N 76°06'49" E 250.82'
S 39°13'56" E 63.02'
S 85°06'48" E 162.55'
S 82°57'34" E 60.49'
S 85°49'32" E 194.63'
S 39°13'56" E 46.87'
S 86°37'36" E 128.51'
S 87°46'46" E 153.29'

REBAR SET
DRILL HOLE SET
DRILL HOLE FND.
EXISTING CART PATH

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14 B-15 B-16 B-17 B-18 B-19 B-20 B-21 B-22 B-23 B-24 B-25 B-26 B-27

50'
100' TOWN SETBACK

COOK FARM
SUBDIVISION LOT 3
AREA = 836,429 S.F.
(661,467 S.F. SUITABLE)

PROPOSED LOT 4

SWAMP
MEADOW
AGRICULTURAL FIELD

50' WIDE ALGONQUIN GAS EASEMENT

MATCHLINE SEE SHEET C-2
SEE SHEET C-3

LEGEND

- EXISTING 2' CONTOUR (RIGIS)
- STONE WALL
- DELINEATED WETLAND EDGE
- 50' PERIMETER WETLAND
- 100' TOWN RURAL SUBDIVISION SETBACK TO WETLANDS
- UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- CONCRETE BOUND OR MONUMENT TO BE SET
- PROPOSED COMMON DRIVEWAY, UTILITY, DRAINAGE & CEMETERY ACCESS EASEMENT
- 50' SOLAR ARRAY SETBACK
- APPROXIMATE EDGE OF VEGETATION

0' 50' 100' 150'
GRAPHIC SCALE

Environmental Management
JUN 27 2019
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
REVIEWED SITE PLAN. APPLICATION NO.: 19-0091
DATED JUL 23 2019
SEE LETTER OF SAME DATE.

CERTIFICATION

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TOPOGRAPHIC SURVEY ACCURACY	T-3*

PURPOSE

THIS PLAN AND SURVEY WERE PREPARED TO ACCOMPANY AN APPLICATION FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN.
*THE TOPOGRAPHY WAS TAKEN FROM THE RIGIS DATABASE AND FIELD VERIFIED.

PATRICIA A. KELLY, PLS #19687 COA #A402 6/25/19

PATRICIA A. KELLY
No. 19687
PROFESSIONAL LAND SURVEYOR
06/25/19

#2; 06/06/19: REVISE PURPOSE STATEMENT
#1; 04/09/19: NO REVISIONS THIS SHEET
REVISIONS:

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
PROPOSED LOT 3 LAYOUT PLAN
PREPARED FOR
COOK FARM SOLAR PROJECT
ASSESSORS PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
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NEW BEDFORD, MA. 02742
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JOB#: 03-043 EMAIL: wsmithcec@aol.com

C-3

NOTES:

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c/o DEBORAH SANFORD
75 SEARS ROAD
SOUTHBORO, MA 01772

2) ASSESSORS REFERENCE: PLAT 809 LOT 101

3) ZONE: R-80

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SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS
LARGE SYSTEM
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9) SOLAR RACKING SHALL BE INSTALLED ON REMOVABLE GALVANIZED STEEL GROUND SCREW FOUNDATIONS.

10) AREAS BETWEEN AND AROUND SOLAR ARRAYS TO BE PLANTED WITH POLLINATOR HABITAT VEGETATION MIX. SEED MIX SHALL EXCLUDE ANY NON-NATIVE OR INVASIVE SPECIES.

11) THE EXISTING VEGETATION WITHIN A 20' WIDE MINIMUM VEGETATIVE BUFFER (30' PROPOSED) SHALL BE MAINTAINED AT AT MINIMUM HEIGHT OF 6', WITHIN THE 50' SETBACK, PER TIVERTON ZONING ARTICLE 24, SECTION 7, 7 E (2).

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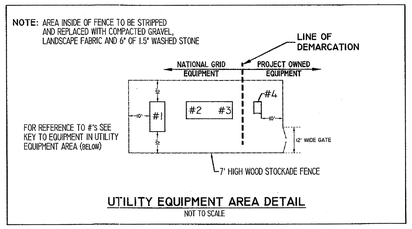


UTILITY EQUIPMENT AREA DETAIL
NOT TO SCALE

KEY TO EQUIPMENT IN UTILITY EQUIPMENT AREA
#1 = NATIONAL GRID S & C PME 9 LOAD BREAK
#2 = NATIONAL GRID PAD MOUNT G & W RECLOSER
#3 = NATIONAL GRID METER CT/PT ENCLOSURE = ELECTRIC POINT OF COMMON COUPLING
#4 = COOK FARM SOLAR S & C PME LOAD BREAK SWITCH

15) SOLAR RACK/TABLE COUNT = 314
SOLAR PANEL COUNT = (RACK COUNT x 24) = 7,368
DC SYSTEM SIZE = (SOLAR PANEL COUNT x 390 WATTS) = 2,873,520 W (2873 kW)
SOLAR PANEL COVERAGE AREA = (AREA UNDER PANELS) = 147,252 SF (3.3 ACRES±)
ARRAY AREA = 301,551 SF± (6.9 ACRES±)
ARRAY AREA = AREA COVERED BY PANELS AND INTERROW SPACING.
FENCED AREA = 376,578 SF± (8.6 ACRES±)
FENCED AREA = AREA WITHIN SAFETY FENCE
SOLAR WORK AREA = 468,400 SF± (10.8 ACRES±)
SOLAR WORK AREA = TOTAL AREA INCLUDING AREA IN WHICH VEGETATION OR STRUCTURES MUST BE MANAGED TO ALLOW FOR UNOBSTRUCTED ACCESS TO DIRECT SUNLIGHT (DOES NOT INCLUDE 20' WIDE MINIMUM (30' PROPOSED) VEGETATED BUFFER)
NOTE: WITHIN THE 20' WIDE MINIMUM (30' PROPOSED) VEGETATED BUFFER TREES SHALL BE MANAGED TO NO MORE THAN 6 FEET OFHEIGHT IN ORDER TO MITIGATE SHADING IMPACTS.
PROPOSED LOT 3 AREA = 836,429 SF± (19.2 ACRES±), (661,467 SF SUITABLE)

16) LOT COVERAGE CALCULATION FOR PHOTOVOLTAIC SYSTEM FOR LOT 3:
TOTAL AREA OF SUPPORT ANCHORS & SONOTUBES = 70 SF
TOTAL AREA OF EQUIPMENT PADS = 495 SF
TOTAL AREA OF LOT 3 PAVED COMMON DRIVEWAY = 3,555 SF
TOTAL LOT COVERAGE = 70 SF + 495 SF + 3,555 SF = 4,120 SF
PROPOSED LOT 3 AREA = 836,429 SF
PROPOSED LOT COVERAGE = 4,120 SF / 836,429 SF = 0.004 OR 0.4% OF TOTAL LOT AREA
ALLOWABLE LOT COVERAGE PER ZONING = 0.10 OR 10% = (0.10 X 836,429 SF = 83,642 SF)
CHANGES IN THE SIZE AND LOCATION OF IMPERVIOUS AREAS FROM THOSE SHOWN ON THE PLAN SHALL REQUIRE ADDITIONAL STORMWATER REVIEW AND CHANGES TO THE STORMWATER MANAGEMENT SYSTEM.

17) ONLY SINGLE FAMILY HOMES OR OTHER PERMITTED USES ARE ALLOWED.

18) A DEED RESTRICTION SHALL BE RECORDED THAT NO FURTHER SUBDIVISION OF THE LOTS IS ALLOWED PURSUANT TO THE RELEVANT PROVISIONS CONTAINED WITHIN THE TOWN OF TIVERTON LAND DEVELOPMENT & SUBDIVISION REGULATIONS AND THE TOWN OF TIVERTON ZONING ORDINANCE.

19) NO DEVELOPMENT IS PERMITTED WITHIN 200 FEET FROM THE POND OR TRIBUTARY WETLANDS WITHOUT A SPECIAL USE PERMIT FROM TIVERTON ZONING BOARD. THE SITE IS LOCATED APPROXIMATELY 500 FEET FROM THE EDGE OF THE POND. NO DIRECT TRIBUTARIES ARE PRESENT ON OR ADJACENT TO THE SITE. THE NEAREST PROPOSED HOUSE IS LOCATED APPROXIMATELY 700 FEET FROM THE POND. ALL OWTS HAVE BEEN DESIGNED TO BE IN EXCESS OF 125 FEET "SETBACK TO CERTAIN WATERBODIES" REQUIREMENT OF THE ZONING ORDINANCE. THE SOLAR PROJECT SITE WILL BE LOCATED APPROXIMATELY 1100 FEET FROM THE POND OR DIRECT TRIBUTARY AND 70 FEET FROM THE WETLAND EDGE.

20) FUEL STORAGE FOR HEATING RESIDENCE ON THE PROPERTY SHALL BE AN ABOVE-GROUND OR BASEMENT LOCATED DUAL-WALL CONTAINMENT SYSTEM. IN-GROUND OR BURIED FUEL STORAGE TANKS ARE STRICTLY PROHIBITED

21) STORAGE OF ANY HAZARDOUS WASTE IS PROHIBITED.

22) DISPOSAL OF ANY SOLID WASTE OTHER THAN BRUSH NATIVE TO THE SITE IS PROHIBITED.

23) THE DISPOSAL OF ANY LIQUID OR LEACHABLE WASTE OTHER THAN DOMESTIC SEWAGE DISCHARGING TO A RI DEM APPROVED INDIVIDUAL SEWAGE DISPOSAL SYSTEM (OWTS) SYSTEM IS PROHIBITED.

24) INDUSTRIAL, COMMERCIAL AND SERVICE USES WHICH DISCHARGE PROCESS WASTEWATER ON-SITE ARE PROHIBITED.

25) STORAGE OF ICE MELTING SALT OR DE-ICING CHEMICALS IS PROHIBITED UNLESS STORED IN A WATERTIGHT CONTAINER.

26) AUTOMOTIVE SERVICE AND REPAIR SHOPS, JUNK AND SALVAGE YARDS IS PROHIBITED.

27) INCINERATORS AND SANITARY LANDFILL SITES ARE PROHIBITED.

28) THE USE OF SEPTIC SYSTEM ADDITIVES, CLEANERS, AND / OR ACIDS IS STRICTLY PROHIBITED.

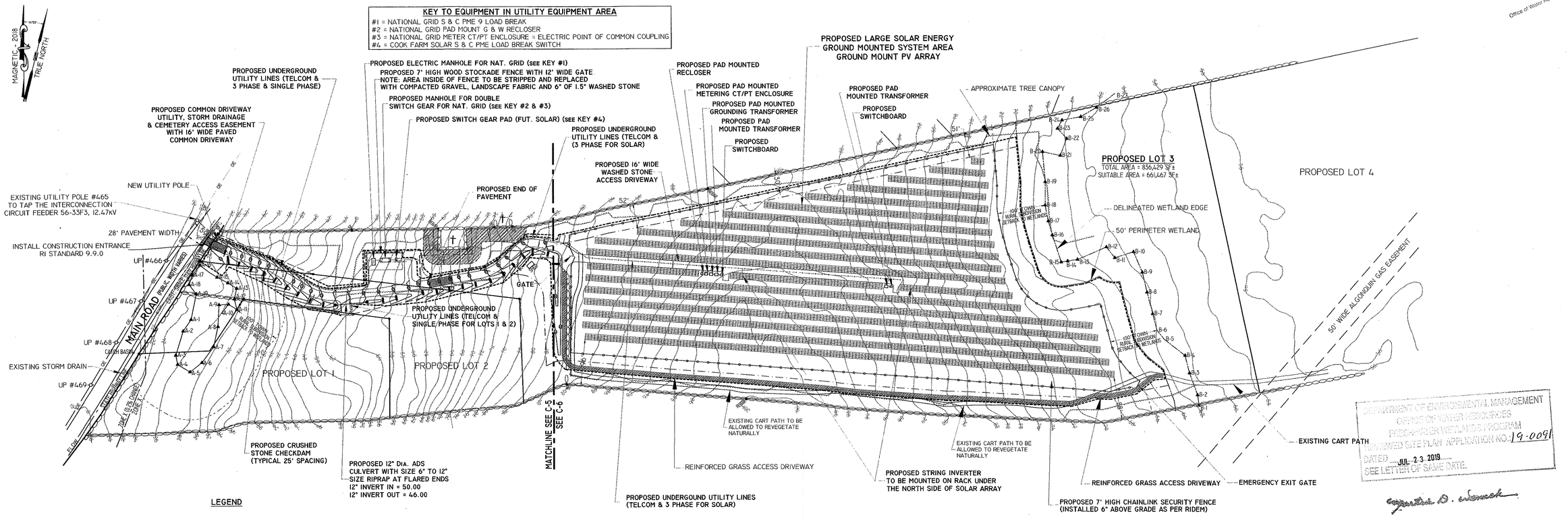
29) THE RENDERING IMPERVIOUS OF MORE THAN 10% OF THE SITE REQUIRES THAT A SPECIAL USE PERMIT BE OBTAINED FROM THE ZONING BOARD. THE PROPOSED PROJECT WILL BE CONSISTENT WITH THE ZONING REGULATIONS.

30) THE USE OF CHEMICALS FOR DE-ICING ARE PROHIBITED. SAND SHALL BE UTILIZED IN LIEU OF SALT FOR TRACTION IN ICY CONDITIONS. DUMPING OF SNOW FROM OFF-SITE AREAS IS PROHIBITED.

31) THE USE OF PESTICIDES AND FERTILIZERS ARE GENERALLY PROHIBITED. THE USE OF ALL TYPES OF HERBICIDES (E.G., ROUND-UP CONTAINING GLYCOPHOSPHATES) ARE STRICTLY PROHIBITED WITHIN THE PORTION OF PROPERTY CONVERTED TO RESIDENTIAL OR SOLAR VOLTAIC SYSTEM USE. WEED CONTROL BLOCKING FABRIC/ WITH CRUSHED STONE COVERING SHALL BE UTILIZED WHERE NECESSARY IN THE AREAS OF THE SOLAR VOLTAIC SYSTEM (E.G. AROUND THE PERIMETER OF THE ELECTRICAL TRANSFORMER CEMENT MOUNTING PADS). SMALL, "SPOT-APPLICATIONS" OF HERBICIDES MAY BE ALLOWED WITH THE APPROVAL FROM THE CONSERVATION COMMISSION.

32) A PROPERTY OWNERS ASSOCIATION SHALL BE ESTABLISHED FOR THE MAINTENANCE OF THE COMMON DRIVEWAY AND STORM DRAINAGE SYSTEM. DEED RESTRICTIONS ON LOTS 1, 2 & 3 SHALL INCLUDE A REQUIREMENTS FOR THE OWNERS TO PARTICIPATE IN THE PROPERTY OWNERS ASSOCIATION

Environmental Management
JUN 27 2019
Office of Water Resources



LEGEND

- APPROXIMATE STONE WALL
- GAS LINE EASEMENT
- DELINEATED WETLAND EDGE
- 50' PERIMETER WETLAND
- CEMETERY
- UTILITY POLE
- PROPOSED UTILITY POLE
- EXISTING OVERHEAD WIRES
- PROPOSED OVERHEAD WIRES
- PROPOSED UNDERGROUND UTILITIES (TELCOM, SINGLE PHASE & 3 PHASE AS NOTED)
- 100' TOWN RURAL SUBDIVISION SETBACK TO WETLANDS
- APPROXIMATE FEMA BOUNDARY
- APPROXIMATE 2' CONTOUR
- PROPOSED 7' HIGH CHAINLINK SECURITY FENCE (INSTALLED 6" ABOVE GRADE AS PER RIDEM)
- APPROXIMATE LIMITS OF TREE CANOPY
- 50' TOWN SOLAR FIELD SETBACK
- PROPOSED 30' WIDE COMMON DRIVEWAY & UTILITY EASEMENT
- EXISTING SWALE
- EXISTING STORMDRAIN
- EXISTING MONUMENT (DRILL HOLE (DH) OR REBAR) AS NOTED
- PROPOSED PERMANENT BOUND
- PROPOSED CONTOUR
- PROPOSED 30' WIDE VEGETATED BUFFER = LIMIT OF WORK = SILT FENCE OR COMPOST FILTER SOCK EROSION CONTROL
- 30' WIDE NO DISTURBANCE AREA AROUND CEMETERY (NO EXCAVATION ALLOWED)
- REINFORCED GRASS ACCESS DRIVEWAY

0' 100' 200' 300'
GRAPHIC SCALE

WILLIAM F. SMITH No. 5084 REGISTERED PROFESSIONAL ENGINEER

#2; 06/06/19: PER REVIEW COMMENTS
#1; 04/09/19: EXTEND SWALE
REVISIONS:

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
PROPOSED SOLAR PHOTOVOLTAIC SYSTEM OVERALL SITE PLAN
PREPARED FOR
COOK FARM SOLAR PROJECT
ASSESSORS PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND
OWNER/APPLICANT:
FOGLAND, LLC. (C/O DEBORAH SANFORD)
75 SEARS ROAD
SOUTHBOROUGH, MA 01772
SCALE: AS NOTED DATE: MARCH 8, 2019

Civil Engineering Concepts, Inc.
34A MAIN STREET
LITTLE COMPTON, RI 02837
PH: (401) 592-0177
FAX: (401) 592-0178
P.O. BOX 5323
NEW BEDFORD, MA. 02742
(508) 990-4900
EMAIL: wsmithcec@aol.com

JOB#: 03-043

C-4

MAGNETIC - 2018
TRUE NORTH

REFER TO SHEET 10 COOK FARM SUBDIVISION FOR DETAILS AND NOTES RELATED TO P.A.P. WORK AND RESETTING OF CULVERT AT THE COMMON DRIVEWAY ENTRANCE FOR RIDOT P.A.P. PERMIT #190226

SEE KEY & DETAIL BELOW

NEW UTILITY POLE

EXISTING SWALE RECENTLY MAINTAINED BY RIDOT

PROPOSED COMMON DRIVEWAY, UTILITY, STORM DRAINAGE & CEMETERY ACCESS EASEMENT WITH 16' WIDE COMMON DRIVEWAY

PROPOSED UNDERGROUND UTILITY LINES (TELCOM & 3 PHASE & SINGLE PHASE)

PROPOSED ELECTRIC MANHOLE FOR NAT. GRID (SEE KEY #1)

PROPOSED 7' HIGH WOOD STOCKADE FENCE WITH 12' WIDE GATE
NOTE- AREA INSIDE OF FENCE TO BE STRIPPED AND REPLACED WITH COMPACTED GRAVEL, LANDSCAPE FABRIC AND 6" OF 1.5" WASHED STONE

PROPOSED MANHOLE FOR DOUBLE SWITCH GEAR FOR NAT. GRID (SEE KEY #2 & #3)

PROPOSED SWITCH GEAR PAD FOR SOLAR (SEE KEY #4)

EXISTING UTILITY POLE #465 TO TAP THE INTERCONNECTION CIRCUIT FEEDER 56-33F3, 12.47 kV

PLAT 810 LOT 115
N/F CAROL LEES WILLIAMS

PROPOSED COMPOST FILTER SOCK OR SILT FENCE EROSION CONTROL = LIMITS OF WORK

PROPOSED COMPOST FILTER SOCK OR SILT FENCE EROSION CONTROL = LIMITS OF WORK

END OF PROPOSED VMAX C350 TURF REINFORCEMENT MAT INSTALLED ON SIDES AND BOTTOM OF GRASS SWALE

PROPOSED UNDERGROUND UTILITY LINES (3 PHASE FOR SOLAR)

PROPOSED 16' WIDE WASHED STONE ACCESS DRIVEWAY (SEE DETAIL)

PLAT 810 LOT 113
N/F WILLIAM P. & AMY R. DEVEREAUX

APPROXIMATE TREE CANOPY

PROPOSED CONSTRUCTION ENTRANCE (RI STANDARD 9.9.0)

EXISTING SWALE RECENTLY MAINTAINED BY RIDOT

START OF PROPOSED VMAX C350 TURF REINFORCEMENT MAT INSTALLED ON SIDES AND BOTTOM OF GRASS SWALE

PLAT 808 LOT 103
N/F MARK & SHARON MOORE

MAIN ROAD (R.I. ROUTE 77)
PUBLIC, WIDTH VARIES

STATE ROW LINE

APPROXIMATE SLOPE DRAIN

FORESTED WETLAND
(AREA < 1 ACRE)

16' WIDE COMMON DRIVEWAY

DRIVEWAY TO LOT 2

DRIVEWAY TO LOT 1

PROPOSED UNDEGROUND UTILITY LINES (TELCOM & SINGLE PHASE FOR LOTS 1 & 2)

PROPOSED END OF PAVEMENT

PROPOSED CONSTRUCTION ENTRANCE (RI STANDARD 9.9.0)

PROPOSED 16' WIDE GRAVEL DRIVEWAY

REINFORCED GRASS ACCESS DRIVEWAY (USING TENAX TURF REINFORCEMENT)

100' TOWN RURAL SUBDIVISION SETBACK TO WETLANDS

PROPOSED CRUSHED STONE CHECKDAM (TYPICAL, 25' SPACING)

PROPOSED COMPOST FILTER SOCK OR SILT FENCE EROSION CONTROL = LIMITS OF WORK

PROPOSED 12" DIA. ADS CULVERT WITH SIZE 6" TO 12" SIZE RIPRAP AT FLARED ENDS
12" INVERT IN = 50.00
12" INVERT OUT = 46.00

COOK FARM SUBDIVISION LOT 2

COOK FARM SUBDIVISION LOT 1

CEMETERY

SHED

PROPOSED COMPOST FILTER SOCK OR SILT FENCE EROSION CONTROL = LIMITS OF WORK

CATCH BASIN

EXISTING STORM DRAIN

ZONE A (1.0% CHANCE) ZONE X

APPROXIMATE FEMA BOUNDARY

3.4 ± TO INTERSECTION WITH POND BRIDGE ROAD

PLAT 809 LOT 102
N/F EDWARD L. & MICHELLE E. FISHER

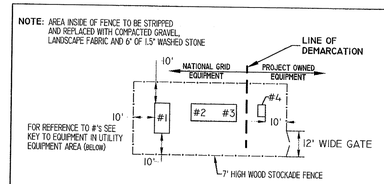
PLAT 809 LOT 103
N/F STATE OF RHODE ISLAND AND PROVIDENCE

MATCHLINE
SEE SHEET C-5
SEE SHEET C-6

UP #465
UP #466
UP #467
UP #468
UP #469
UP #470

A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-8 A-9 A-10 A-11 A-12 A-13 A-14 A-15 A-16 A-17 A-18 A-19

NOTE: AREA INSIDE OF FENCE TO BE STRIPPED AND REPLACED WITH COMPACTED GRAVEL, LANDSCAPE FABRIC AND 6" OF 1.5" WASHED STONE



UTILITY EQUIPMENT AREA DETAIL
NOT TO SCALE

KEY TO EQUIPMENT IN UTILITY EQUIPMENT AREA
#1 = NATIONAL GRID S & C PME 9 LOAD BREAK
#2 = NATIONAL GRID PAD MOUNT G & W RECLOSER
#3 = NATIONAL GRID METER CT/PT ENCLOSURE = ELECTRIC POINT OF COMMON COUPLING
#4 = COOK FARM SOLAR S & C PME LOAD BREAK SWITCH

LEGEND

- EXISTING 2' CONTOUR (RIGIS)
- STONE WALL
- DELINEATED WETLAND EDGE
- 50' PERIMETER WETLAND
- 100' TOWN RURAL SUBDIVISION SETBACK TO WETLANDS
- UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- PROPOSED COMMON DRIVEWAY, UTILITY, DRAINAGE & CEMETERY ACCESS EASEMENT
- 50' SOLAR ARRAY SETBACK
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- PROPOSED OVERHEAD UTILITIES
- PROPOSED UNDERGROUND ELECTRIC (AS NOTED)
- PROPOSED UNDERGROUND TELCOM
- PROPOSED 30' WIDE VEGETATED SOLAR BUFFER
- PROPOSED 30' WIDE NO DISTURBANCE AREA AROUND CEMETERY (NO EXCAVATION ALLOWED)
- EXISTING STORM DRAIN
- PROPOSED ROLLMAX VMAX C350 TURF REINFORCEMENT MAT
- REINFORCED GRASS ACCESS DRIVEWAY (USING TENAX TURF REINFORCEMENT)

0' 40' 80' 120'
GRAPHIC SCALE

SEE SHEET C-4 FOR PLAN NOTES

WILLIAM F. SMITH
No. 15084
REGISTERED PROFESSIONAL ENGINEER

#2; 06/06/19: PER REVIEW COMMENTS
#1; 04/09/19: EXTEND SWALE, ADD MAT
REVISIONS:

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
REVIEWED STORMWATER APPLICATION NO: 19-0091
DATED JUL 23 2019
SEE LETTER OF SAME DATE.

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO GAIN PRELIMINARY PLAN APPROVAL FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT IN THE LARGE SYSTEM CATEGORY IN ACCORDANCE WITH TIVERTON ZONING REGULATIONS, UNDER ARTICLE XXIV SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS, FOR PROPOSED LOT 3 AS SHOWN ON THIS PLAN. THE PHOTOVOLTAIC SYSTEM SHALL CONSIST OF APPROXIMATELY 314 ARRAYS, WITH 12 TO 24 PHOTOVOLTAIC MODULES PER ARRAY, FOR A TOTAL OF 7,368 PHOTVOLTAIC MODULES. THE 7,368 PHOTOVOLTAIC MODULES WILL GENERATE APPROXIMATELY 2,873 kW OF ELECTRICITY. THE PHOTOVOLTAIC SYSTEM SHALL BE INSTALLED ON PROPOSED LOT 3 WHICH IS APPROXIMATELY 19.1 ACRES IN SIZE.
NOTE LOTS 1, 2, 3, & 4 AS SHOWN ARE PART OF A 5 LOT RURAL FRONTAGE SUBDIVISION FOR FOGLAND, LLC. CURRENTLY IN THE PERMITTING PROCESS.
PROPOSED LOTS 1, 2, 4 & 5 (LOT 5 NOT SHOWN) ARE NOT PART OF THE SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT. (SEE SHEET 1 FOR SUBDIVISION LAYOUT)

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
PROPOSED SOLAR PHOTOVOLTAIC SYSTEM SITE PLAN
PREPARED FOR
COOK FARM SOLAR PROJECT
ASSESSORS PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND
OWNER/APPLICANT:
FOGLAND, LLC. (C/O DEBORAH SANFORD)
75 SEARS ROAD
SOUTHBOROUGH, MA 01772
SCALE: 1" = 40' DATE: MARCH 8, 2019

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JOB#: 03-043 EMAIL: wsmitheec@aol.com

C-5

MAGNETIC 2018

TRUE NORTH

END OF PROPOSED VMAX C350 TURF REINFORCEMENT MAT INSTALLED ON SIDES AND BOTTOM OF GRASS SWALE

PROPOSED COMPOST FILTER SOCK OR SILT FENCE EROSION CONTROL = LIMITS OF WORK

PROPOSED UNDERGROUND UTILITY LINES (3 PHASE FOR SOLAR)

PROPOSED 16' WIDE WASHED STONE ACCESS DRIVEWAY (SEE DETAIL)

PROPOSED 7' HIGH CHAINLINK SECURITY FENCE (INSTALLED 6" ABOVE GRADE AS PER RIDEM)

PROPOSED PAD MOUNTED RECLOSER

PROPOSED PAD MOUNTED METERING CT/PT ENCLOSURE

PROPOSED PAD MOUNTED GROUNDING TRANSFORMER

PROPOSED PAD MOUNTED TRANSFORMER

PROPOSED SWITCHBOARD

PROPOSED LARGE SOLAR ENERGY GROUND MOUNTED SYSTEM AREA GROUND MOUNT PV ARRAY

APPROXIMATE TREE CANOPY

PROPOSED PAD MOUNTED TRANSFORMER

PROPOSED SWITCHBOARD

PLAT 810 LOT 113
N/F WILLIAM P. & AMY R. DEVEREAUX

PLAT 810 LOT 122
N/F MARCO DIRKS

PLAT 810 LOT 110
N/F BRIAN D. & SHIRLEY A. DUFFEE

PLAT 810 LOT 110
N/F BRADFORD E. DOWTY

PLAT 809 LOT 103
N/F STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

EXISTING CART PATH

RURAL SUBDIVISION 100' TOWN SETBACK TO WETLANDS

B-27 B-26 B-25 B-24 B-23 B-22 B-21 B-20 B-19 B-18 B-17 B-16 B-15 B-14 B-13 B-12 B-11 B-10 B-9 B-8 B-7 B-6 B-5

COOK FARM
SUBDIVISION LOT 3
TOTAL AREA = 836,429 SF±
SUITABLE AREA = 661,467 SF±

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPLICATION NO. 19-0091
SWAMP JUL 23 2019
DATE:

DELINEATED WETLAND EDGE

50' PERIMETER WETLAND

Environmental Management JUN 2019 Received

EMERGENCY ACCESS GATE

EXISTING CART PATH

REINFORCED GRASS ACCESS DRIVEWAY (USING TENAX TURF REINFORCEMENT)

EXISTING CART PATH TO BE ALLOWED TO REVEGETATE NATURALLY

PROPOSED STRING INVERTER TO BE MOUNTED ON RACK ON NORTH SIDE OF SOLAR ARRAY

PROPOSED COMPOST FILTER SOCK OR SILT FENCE EROSION CONTROL = LIMITS OF WORK

EXISTING CART PATH TO BE ALLOWED TO REVEGETATE NATURALLY

PROPOSED 7' HIGH CHAINLINK SECURITY FENCE (INSTALLED 6" ABOVE GRADE AS PER RIDEM)

APPROXIMATE TREE CANOPY

PROPOSED STRING INVERTER TO BE MOUNTED ON RACK ON NORTH SIDE OF SOLAR ARRAY

REINFORCED GRASS ACCESS DRIVEWAY (USING TENAX TURF REINFORCEMENT)

EXISTING CART PATH TO BE ALLOWED TO REVEGETATE NATURALLY

REINFORCED GRASS ACCESS DRIVEWAY (USING TENAX TURF REINFORCEMENT)

MATCHLINE SEE SHEET C-5
SEE SHEET C-6

LEGEND

- EXISTING 2' CONTOUR (RIGIS)
- STONE WALL
- DELINEATED WETLAND EDGE
- 50' PERIMETER WETLAND
- 100' TOWN RURAL SUBDIVISION SETBACK TO WETLANDS
- UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- PROPOSED COMMON DRIVEWAY, UTILITY, DRAINAGE & CEMETERY ACCESS EASEMENT
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- REINFORCED GRASS ACCESS DRIVEWAY (USING TENAX TURF REINFORCEMENT)

0' 40' 80' 120'
GRAPHIC SCALE

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SEE SHEET C-4 FOR PLAN NOTES

WILLIAM F. SMITH
No. #5084
REGISTERED PROFESSIONAL ENGINEER

#2; 06/06/19: PER REVIEW COMMENTS
#1; 04/09/19: EXTEND SWALE, ADD MAT
REVISIONS:

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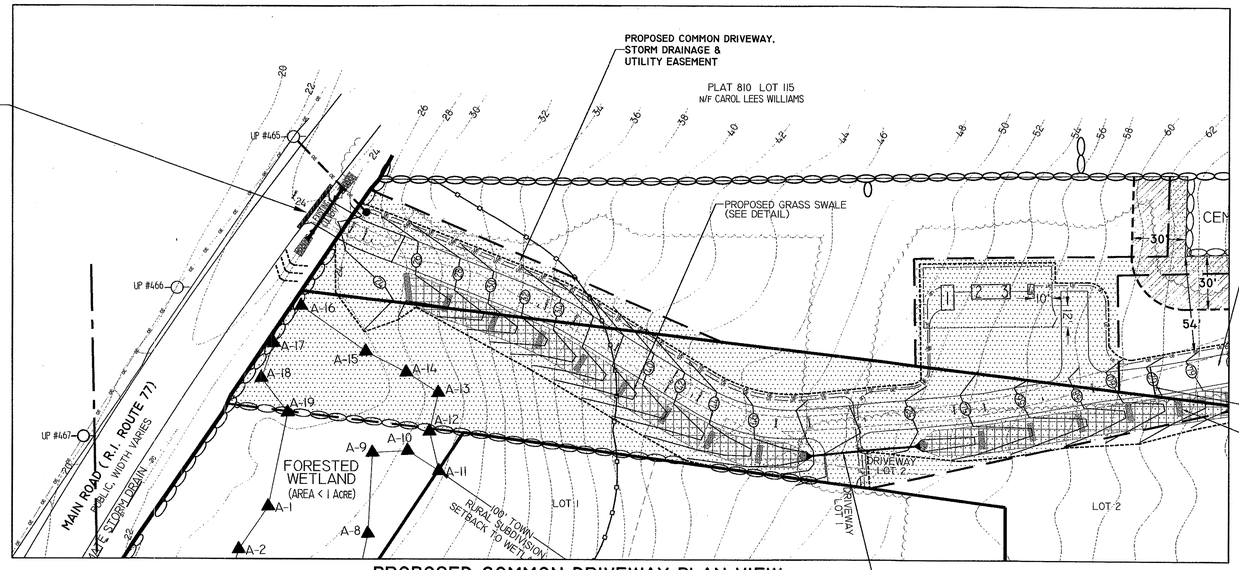
C-6

REFER TO SHEET 10 COOK FARM SUBDIVISION FOR DETAILS AND NOTES RELATED TO P.A.P. WORK AND RESETTING OF CULVERT AT THE COMMON DRIVEWAY ENTRANCE FOR RIDOT P.A.P. PERMIT #190226

MAGNETIC - 2018

TRUE NORTH



PROPOSED 16' WIDE GRAVEL DRIVEWAY

END OF PAVEMENT

PROPOSED CRUSHED STONE CHECKDAM (TYPICAL 25' SPACING) (SEE DETAIL)

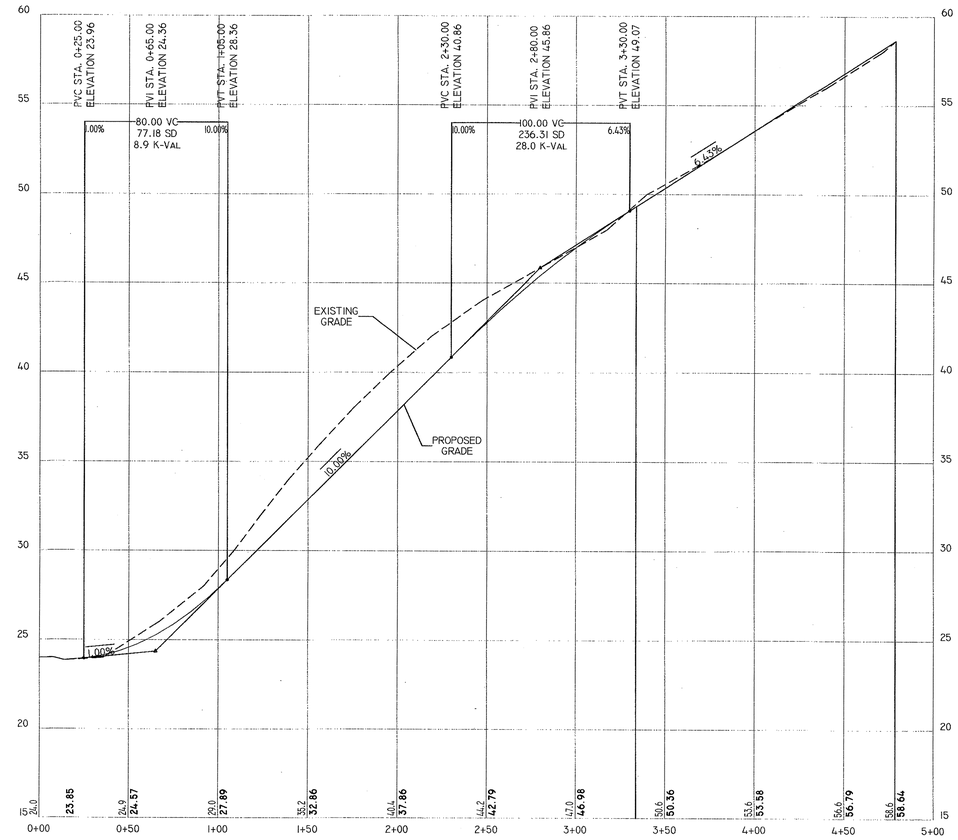
PROPOSED 12" DIA. ADS CULVERT WITH SIZE 6" TO 12" SIZE RIPRAP AT FLARED ENDS
12" INVERT IN = 50.00
12" INVERT OUT = 46.00

PROPOSED COMMON DRIVEWAY PLAN VIEW

SCALE: 1" = 40'

LEGEND

- EXISTING 2' CONTOUR (RIGIS)
- STONE WALL
- DELINEATED WETLAND EDGE
- 50' PERIMETER WETLAND
- UTILITY POLE
- EXISTING OVERHEAD UTILITIES
- BUILDING ENVELOPE
- APPROXIMATE EDGE OF VEGETATION
- SOIL EVALUATION TEST PIT
- PROPOSED OVERHEAD UTILITIES
- PROPOSED UNDERGROUND ELECTRIC UTILITIES
- PROPOSED UNDERGROUND TELCOM & CATV UTILITIES
- PROPOSED UTILITY POLE
- PROPOSED CONTOUR
- PROPOSED COMPOST FILTER SOCK OR SILT FENCE EROSION CONTROL
- PROPOSED CONCRETE BOUND
- PROPOSED DRILL HOLE OR REBAR (UNLESS NOTED OTHERWISE)
- PROPOSED CONSTRUCTION ENTRANCE
- 125' TOWN OWTS SETBACK TO CERAIN WATER BODIES, ARTICLE VI, SECTION 7
- 30' WIDE NO DISTURBANCE ZONE AROUND CEMETERIES
- COMMON DRIVEWAY, UTILITY, STORM DRAINAGE & CEMETERY ACCESS EASEMENT
- PROPOSED COMPOST FILTER SOCK OR SILT FENCE EROSION CONTROL = LIMITS OF DISTRUBANCE
- 100' TOWN RURAL SUBDIVISION SETBACK TO WETLANDS



PROPOSED COMMON DRIVEWAY PROFILE - FROM MAIN ROAD

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

PURPOSE STATEMENT:

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Environmental Management
JUN 27 2019
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
PRELIMINARY PLAN APPLICATION
REVIEWED BY OWR AS PRELIMINARY 19-009 I
DATED JUL 23 2019
SEE LETTER OF SAME DATE.

WILLIAM F. SMITH No. #5084 REGISTERED PROFESSIONAL ENGINEER

REVISIONS:
#2; 06/06/19: ADD PURPOSE STATEMENT
#1; 04/09/19: NO REVISIONS THIS SHEET

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
COMMON DRIVEWAY PLAN & PROFILE

COOK FARM

ASSESSORS PLAT 809 LOT 101
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND

PREPARED FOR
OWNER/APPLICANT:
FOGLAND, LLC (C/O DEBORAH SANFORD)
75 SEARS ROAD
SOUTHBOROUGH, MA 01772

SCALE: AS NOTED
DATE: MARCH 8, 2019

Civil Engineering Concepts, Inc.
344 MAIN STREET
LITTLE COMPTON, RI 02837
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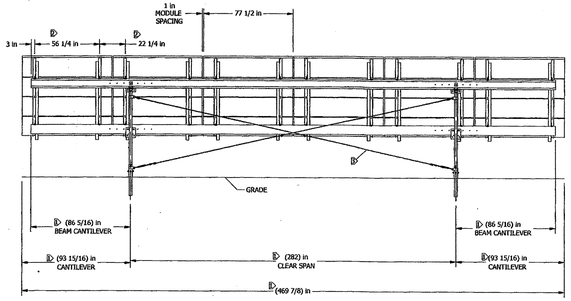
JOB#: 03-043

C-7



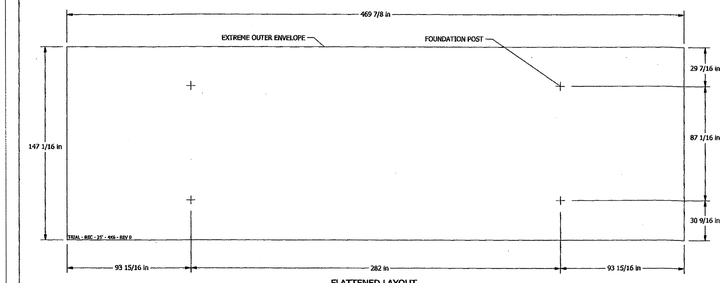
NOTES
1. TYPICAL INSTALLATION DIMENSIONS; MAY BE ADJUSTED TO SUIT FIELD CONDITIONS WITHIN THE TOLERANCES PROVIDED.
2. PURLIN SPACING IS DEPENDENT ON MODULE SPECIFICATIONS, REFER TO PROJECT NOTES FOR MODULE SPECIFICATIONS.
3. SEISMIC CROSS BRACING TO BE FIELD FIT.

ZEYN B. UZMAN
NY PE# 16 080223

GROUND SCREW: KRINNER S SERIES GROUND SCREW; SOUTH SCREW - 76mm X 2100mm; NORTH SCREW - 76mm X 2100mm
MODULE DIMENSIONS: LONG EDGE - 77.48 (1968 mm); SHORT EDGE - 39.02 (991 mm); THICKNESS - 1.78 (45 mm)
DESIGN CRITERIA: WIND SPEED - 120 MPH; SNOW LOAD - 40 PSF; EXPOSURE CATEGORY - C; TILT ANGLE - 25°; ROCK SIZE - 4in; MODULE ORIENTATION - LANDSCAPE
TERRASMART, LLC; 8033 FORSYTH BLVD, ST. SUITE 500, FORT MYERS, FL 33912; P 239.362.0211 | F 239.362.0586; WWW.TERRASMART.COM

DRAWN BY	DATE
TC - 4/26/2018	
ENG. APPROVED BY	DATE
MF - 4/26/2018	
OPS. APPROVED BY	DATE
SK - 4/26/2018	

PROJECT NAME: TRIAL
PROJECT NUMBER: 18-XXXX
CLIENT: TERRASMART
MODULE: REC
REV: 0
SHEET NUMBER: 4 OF 5
SHEET SIZE: A



FLATTENED LAYOUT
SCALE 1/52

ZEYN B. UZMAN
NY PE# 16 080223

GROUND SCREW: KRINNER S SERIES GROUND SCREW; SOUTH SCREW - 76mm X 2100mm; NORTH SCREW - 76mm X 2100mm
MODULE DIMENSIONS: LONG EDGE - 77.48 (1968 mm); SHORT EDGE - 39.02 (991 mm); THICKNESS - 1.78 (45 mm)
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TERRASMART, LLC; 8033 FORSYTH BLVD, ST. SUITE 500, FORT MYERS, FL 33912; P 239.362.0211 | F 239.362.0586; WWW.TERRASMART.COM

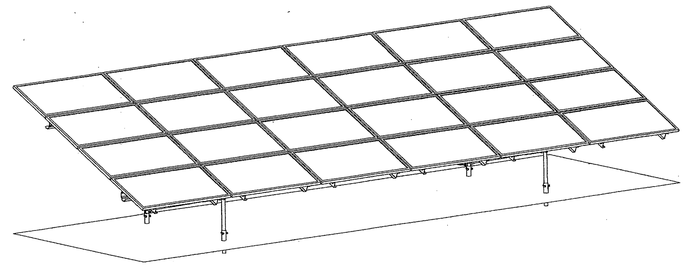
DRAWN BY	DATE
TC - 4/26/2018	
ENG. APPROVED BY	DATE
MF - 4/26/2018	
OPS. APPROVED BY	DATE
SK - 4/26/2018	

PROJECT NAME: TRIAL
PROJECT NUMBER: 18-XXXX
CLIENT: TERRASMART
MODULE: REC
REV: 0
SHEET NUMBER: 3 OF 5
SHEET SIZE: A

TERRAFARM RACKING ENGINEERING PLANS

TERRASMART - TRIAL

4X6 - 25° RACK - REC



NOTES:
1. INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5-2009

ZEYN B. UZMAN
NY PE# 16 080223

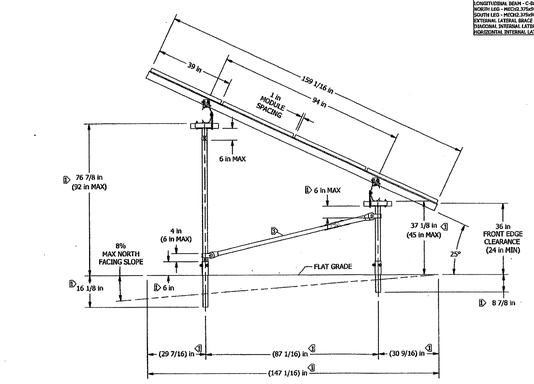
GROUND SCREW: KRINNER S SERIES GROUND SCREW; SOUTH SCREW - 76mm X 2100mm; NORTH SCREW - 76mm X 2100mm
MODULE DIMENSIONS: LONG EDGE - 77.48 (1968 mm); SHORT EDGE - 39.02 (991 mm); THICKNESS - 1.78 (45 mm)
DESIGN CRITERIA: WIND SPEED - 120 MPH; SNOW LOAD - 40 PSF; EXPOSURE CATEGORY - C; TILT ANGLE - 25°; ROCK SIZE - 4in; MODULE ORIENTATION - LANDSCAPE
TERRASMART, LLC; 8033 FORSYTH BLVD, ST. SUITE 500, FORT MYERS, FL 33912; P 239.362.0211 | F 239.362.0586; WWW.TERRASMART.COM

DRAWN BY	DATE
TC - 4/26/2018	
ENG. APPROVED BY	DATE
MF - 4/26/2018	
OPS. APPROVED BY	DATE
SK - 4/26/2018	

PROJECT NAME: TRIAL
PROJECT NUMBER: 18-XXXX
CLIENT: TERRASMART
MODULE: REC
REV: 0
SHEET NUMBER: 1 OF 5
SHEET SIZE: A

Environmental Management
JUN 27 2019
Division of Water Resources

MEMBER PROPERTIES
SOUTH SCREW - 76 mm X 2100 mm
NORTH SCREW - 76 mm X 2100 mm
MODULE RAIL - 4252.4 SPLA - LENGTH = 160.2 in
LONGITUDINAL BEAM - C-Grade4 - LENGTH = 454.6 in
NORTH LEG - HSCH2.375xSPLA - LENGTH = 93.0 in
SOUTH LEG - HSCH2.375xSPLA - LENGTH = 68.0 in
DIAGONAL INTERNAL BRACE - HSCH2.375xSPLA - LENGTH = 22.0 in
DIAGONAL EXTERNAL LATERAL BRACE - HSCH2.375xSPLA - LENGTH = 75.0 in
HORIZONTAL INTERNAL LATERAL BRACE - N/A



SIDE ELEVATION VIEW
SCALE 1 / 35

NOTES:
1. TYPICAL INSTALLATION DIMENSIONS MAY BE ADJUSTED TO SUIT FIELD CONDITIONS WITHIN THE TOLERANCES PROVIDED.
2. LEGS SHALL BE INSTALLED PLUMB, IF MECHANICALLY FOSSIBLE. MAXIMUM 3° OUT OF PLUMB.
3. LATERAL BRACES ARE DESIGNED TO ALLOW FOR 7" OF TOTAL ADJUSTMENT. IF FIELD CONDITIONS REQUIRE ADDITIONAL ADJUSTMENT AND LATERAL BRACES ARE TOO LONG, THEY MAY BE CUT DOWN AND DRILLED TO FIT BY THE RACK INSTALLER. IF THEY ARE TOO SHORT, NEW LATERAL BRACES MAY BE ORDERED TO FIT AT THE PURCHASER'S EXPENSE.

ZEYN B. UZMAN
NY PE# 16 080223

GROUND SCREW: KRINNER S SERIES GROUND SCREW; SOUTH SCREW - 76mm X 2100mm; NORTH SCREW - 76mm X 2100mm
MODULE DIMENSIONS: LONG EDGE - 77.48 (1968 mm); SHORT EDGE - 39.02 (991 mm); THICKNESS - 1.78 (45 mm)
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TERRASMART, LLC; 8033 FORSYTH BLVD, ST. SUITE 500, FORT MYERS, FL 33912; P 239.362.0211 | F 239.362.0586; WWW.TERRASMART.COM

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TC - 4/26/2018	
ENG. APPROVED BY	DATE
MF - 4/26/2018	
OPS. APPROVED BY	DATE
SK - 4/26/2018	

PROJECT NAME: TRIAL
PROJECT NUMBER: 18-XXXX
CLIENT: TERRASMART
MODULE: REC
REV: 0
SHEET NUMBER: 5 OF 5
SHEET SIZE: A

1. PERMITTING, CONSTRUCTION, AND ERECTION NOTES
1. FRAME AND FOUNDATION CONFORMS TO THE REQUIREMENTS OF THE 2015 NEW YORK STATE BUILDING CODE BASED UPON DESIGN CRITERIA AS OUTLINED ON THE COVER SHEET. TERRASMART MAKES NO REPRESENTATION AS TO THE ACCURACY OF THE DESIGN CRITERIA AS IT WAS SUPPLIED BY CLIENT. PLEASE REFER TO STRUCTURAL CALCULATIONS FOR FRAME AND FOUNDATION DESIGN.
2. THE STRUCTURAL INTEGRITY OF THE TYP. RACK DEPENDS ON INTERACTION OF VARIOUS CONNECTED COMPONENTS. PROVIDE ADEQUATE BRACING, SHORING, AND OTHER TEMPORARY SUPPORTS AS REQUIRED TO SAFELY COMPLETE THE WORK.
3. FOUNDATION INSTALLATION SUB-CONTRACTOR SHALL COORDINATE WITH THE ENGINEER IF ANY UNFORESEEN CONFLICTS ARISE, SUCH AS EXISTING ENDULATION THAT COULD POTENTIALLY CAUSE RACKING INSTALLATION ISSUES.
4. STRUCTURAL STEEL SHALL BE ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS, UNLESS OTHERWISE NOTED.
5. DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
6. ALL BOLTS SHALL BE TORQUED PER THE ERECTION MANUAL.
7. COLD GALVANIZING COMPOUND SHALL BE USED PER MANUFACTURER'S DIRECTIONS AND IN ACCORDANCE WITH ASTM-A780 IN AREAS WHERE GALVANIZATION WAS REMOVED DURING TRANSPORTATION, OR ERECTION/INSTALLATION.
8. BOLTS TO BE TIGHTENED SNUG TO COMPLETE FRAMING, THEN ALL BOLTS SHALL BE TORQUED AS INDICATED IN THE INSTALLATION MANUAL.
9. THIS STRUCTURAL DRAWING DOES NOT INCLUDE INFORMATION REGARDING ELECTRICAL CONNECTIONS, INCLUDING GROUNDING. REFER TO INSTALLATION MANUAL AND ELECTRICAL PLANS PREPARED BY OTHERS.
10. SHADING ANALYSIS WAS NOT PERFORMED BY TERRASMART AND WAS NOT CONSIDERED IN THE LAYOUT OF THE FOUNDATION. TERRASMART RECOMMENDS CONSULTING A SOLAR SHADING EXPERT PRIOR TO INSTALLATION TO AVOID POWER REDUCTION DUE TO SHADING.
11. SNOW DRIFTING ANALYSIS WAS NOT PERFORMED BY TERRASMART AND WAS NOT CONSIDERED IN THE STRUCTURAL DESIGN. TYP. FRONT EDGE CLEARANCE GAPS SUPPLIED BY CLIENT AND IT IS ASSUMED THAT THE SYSTEM OWNER WILL REMOVE SNOW AS NEEDED TO AVOID SNOW/ICE DAMS, EDGE, ADVERSE EFFECTS OR SNOW BANKING, INCLUDING SHARING OF OTHER STRUCTURAL CONSTRUCTIONS, ARE BEYOND TERRASMART'S SCOPE.
12. MINIMUM AND TYPICAL FRONT EDGE CLEARANCE SHOWN ON SIDE ELEVATION. MINIMUM FRONT EDGE CLEARANCE DETERMINED PER FIELD CONDITIONS.
13. SOUTHERN EDGES OF MODULES SHALL BE ALIGNED WITHIN 2" HORIZONTALLY OF THE SOUTHERN EDGE OF MODULES OF THE ADJACENT RACK.
14. EASTERN AND WESTERN EDGES OF MODULES SHALL BE ALIGNED WITHIN 2" VERTICALLY AND HORIZONTALLY OF THE SOUTHERN EDGE OF MODULES OF THE ADJACENT RACK.
15. TILT ANGLE TOLERANCE: ± 2° FROM ANGLE SHOWN ON SIDE ELEVATION.
16. RACK SPACING TOLERANCE: 6" TYPICAL, 4" MINIMUM, AS MEASURED BETWEEN THE CLOSEST MODULES EDGE BETWEEN ADJACENT RACKS. REFER TO CIVIL ENGINEERING PLANS FOR MORE INFORMATION AND FURTHER DETAIL.
17. AZIMUTH TOLERANCE: ± 3° FROM APPROVED CIVIL ENGINEERING PLANS.
18. TERRAFARM RACKING IS DESIGNED TO ACCOMODATE A MAXIMUM ASSIGNED EAST/WEST SLOPE OF 12% AND A MAXIMUM NORTH/ SOUTH FACING SLOPE OF 8%. AS NO SLOPES WERE PROVIDED BY THE CLIENT.
19. PANEL SPACING TOLERANCE: +/-1/2" FROM SPACING EXPRESSION AS SHOWN ON SIDE ELEVATION AND REAR ELEVATION.
II. SITE PREPARATION
1. PRIOR TO COMMENCING WORK AND FOR THE DURATION OF THE PROJECT, GENERAL CONTRACTOR SHALL ENSURE THE SITE IS PREPARED AND MAINTAINED AS FOLLOWS (TO AVOID CHANGE ORDERS):
A. ALL REQUIRED PERMITS SHALL BE OBTAINED AND CURRENT.
B. LOCATE ALL UNDERGROUND UTILITIES AND ENSURE THAT THE PROPOSED INSTALLATION DOES NOT CONFLICT WITH ANY EXISTING INFRASTRUCTURE.
C. ALL REQUIRED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND OPERATIONAL.
D. GRASS SHALL BE MOWED WITH BLADES NO HIGHER THAN 6" TALL.
E. ALL VEGETATION, INCLUDING TREES AND SHRUBS SHALL BE CLEARED AND ROOT SYSTEMS GRUBBED. ALL ORGANIC MATTER SHALL BE STRIPPED AND REMOVED FROM THE BUILDING ENVELOPE BEFORE EARTH WORK OCCURS, IF ANY.
F. LOOSE SURFACE IMPEDIMENTS, INCLUDING ROCKS, COBBLES, BOULDERS, CONSTRUCTION DEBRIES, AND OTHER OBSTRUCTIONS SHALL BE REMOVED.
G. SITE SHALL BE SAFE FOR OPERATING MACHINERY AND FOR PERSONNEL ON FOOT. SITE CONDITIONS SHALL NOT BE AN ENCUMBRANCE TO THE PERFORMANCE OF WORK.
H. GROUND WATER, INCLUDING WATER TABLE AND PERCHED WATER, SHALL NOT ENCROACH BETWEEN THE GROUND SURFACE AND THE EMBEDMENT DEPTH OF THE GROUND SCREW. DEWATERING IS REQUIRED IF GROUND WATER IS ENCOUNTERED DURING PILOT HOLE DRILLING.
I. SITE SHALL BE GRADED TO PROVIDE CONTROLLED POSITIVE DRAINAGE AWAY FROM FOUNDATIONS. STANDING WATER AND/OR WATER WITH SUFFICIENT VELOCITY TO ERODE SOIL IS NOT ALLOWED WITHIN 20 FEET OF THE FOUNDATION.
J. NO FINISHED GRADE SOIL SHALL BE DISTURBED WITHIN 24" OF THE PROPOSED OR INSTALLED LOCATION OF A GROUND SCREW. SEE ADDITIONAL REQUIREMENTS FOR TRENCHES AND OTHER EXCAVATIONS IN SECTION II.8.
K. ALL EARTHWORK SHALL BE NOTED TO BE PERFORMED BY A GEOTECHNICAL ENGINEER OR OTHER QUALIFIED SOIL TESTING AGENCY PRIOR TO BEING BACKFILLED AFTER REMOVAL OF SOIL. FILL AREAS SHALL BE PROOF ROLLED AFTER REMOVAL OF SOIL. FILL AREAS SHALL BE STRIPPED OF ALL VEGETATION AND PROOF ROLLED PRIOR TO PLACING FILL MATERIAL.
L. TRENCHES AND OTHER EXCAVATIONS MAY BE CUT EITHER BEFORE OR AFTER GROUND SCREW INSTALLATION PROVIDED THEY MEET THE REQUIREMENTS OF II.1, II.5. IF THEY ARE CUT AFTER GROUND SCREW INSTALLATION, THE HORIZONTAL DISTANCE BETWEEN THE GROUND SCREW AND THE EDGE OF THE EXCAVATION MUST BE GREATER THAN OR EQUAL TO THE VERTICAL DEPTH OF THE EXCAVATION (1:1 RATIO), PLUS 24". I. IF THEY ARE CUT BEFORE GROUND SCREW INSTALLATION, THE HORIZONTAL DISTANCE BETWEEN EXCAVATION AND PROPOSED GROUND SCREW LOCATION SHOULD BE 12" OR GREATER.
5. FILL MATERIAL SHALL BE PLACED IN LIFTS NOT EXCEEDING 12" IN UNCOMPACTED THICKNESS. ON-SITE SOILS MEET THE FOLLOWING REQUIREMENTS:
A. FREE OF PARTICLES LARGER THAN 3" IN DIAMETER, ORGANIC MATTER, AND OTHER DELETERIOUS MATERIALS; AND
B. CAN BE PROPERLY MOISTURE CONDITIONED.
6. GRANULAR ON-SITE SOILS OR IMPORTED GRANULAR MATERIAL MAY BE USED AS FILL AS LONG AS THEY MEET THE FOLLOWING REQUIREMENTS:
A. WELL GRADED BETWEEN COARSE AND FINE SIZES;
B. CONTAINING NO CLAY BALLS, ROOTS, ORGANIC MATTER OR OTHER DELETERIOUS MATERIALS;
C. MAXIMUM PARTICLE SIZE OF 3", WITH LESS THAN 12% PASSING THE U.S. NO. 200 SIEVE; AND
D. CAPABLE OF BEING PROPERLY COMPACTED AND TESTED BY A GEOTECHNICAL ENGINEER OR OTHER QUALIFIED SOIL TESTING AGENCY PRIOR TO BEING TRANSPORTED TO THE SITE.
7. FILL SOILS SHALL BE COMPACTED AT MOISTURE CONTENTS THAT ARE NEAR OPTIMUM. THE OPTIMUM MOISTURE CONTENT VARIES WITH THE SOILS GRADATION AND SHALL BE EVALUATED DURING CONSTRUCTION. FILL MATERIAL THAT IS NOT NEAR OPTIMUM MOISTURE CONTENT SHALL BE MOISTURE CONDITIONED. FILL MATERIAL SHALL BE PLACED IN UNIFORM, HORIZONTAL LIFTS, AND BE COMPACTED WITH APPROPRIATE EQUIPMENT TO AT LEAST 90% OF THE MAXIMUM DRY DENSITY PER ASTM D1557. THE MAXIMUM LIFT THICKNESS WILL VARY DEPENDING ON THE MATERIAL AND COMPACTION EQUIPMENT USED, BUT SHALL NOT BE GREATER THAN 12" AND SHOULD BE CONSISTENT THROUGHOUT THE DEPTH OF THE COMPACTED SOIL.
8. TERRASMART REQUIRES THAT FILL COMPACTION BE TESTED BY A GEOTECHNICAL ENGINEER OR OTHER QUALIFIED SOIL TESTING AGENCY DURING THE PLACEMENT AND COMPACTION OF FILL TO VALIDATE THE WORK.
9. ROCK DRILLING SHALL BE PERFORMED IF REQUIRED BY PRESENCE OF UNDERMINED ROCK. PILOT HOLE DIAMETER SHALL BE DETERMINED BY ONSITE TESTING AND APPROVED BY TERRASMART.
III. FOUNDATION NOTES
1. GROUND SCREW FOUNDATIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER SPECIFICATIONS BY A CERTIFIED INSTALLER TRAINED ON THIS TECHNOLOGY.
2. GROUND SCREW FOUNDATIONS SHALL BE INSTALLED IN UNDISTURBED, NATURAL SOIL, UNLESS OTHERWISE NOTED AND PROPERLY PREPARED AS DESCRIBED IN SECTION II. SITE PREPARATION.
3. FOUNDATION INSTALLATION SUB-CONTRACTOR SHALL DETERMINE DIAMETER AND DEPTH OF PRE-DRILLED PILOT HOLE AS REQUIRED BY SITE CONDITIONS.
4. SHOULD UNFORESEEN LOOSE SOIL CONDITIONS BE ENCOUNTERED ONSITE, CONCRETE OR OTHER ADDITIVES MAY BE USED TO STABILIZE THE SOIL AT CLIENTS EXPENSE. SHOULD UNDERGROUND WATER BE ENCOUNTERED, THE CLIENT SHALL REMEDIATE THE ISSUE.
5. THE USE OF WATER AS LUBRICANT IS ALLOWED.
6. TOLERANCES IN THE POSITION OF EACH SCREW ARE ± 2" LATERALLY (NORTH-SOUTH AND EAST-WEST) AND ± 3" VERTICALLY (UP-DOWN) WITH A TYPICAL 76° EMBEDMENT, AS MEASURED FROM GRADE.
7. MINIMUM REQUIRED TORQUE FOR GROUND SCREW INSTALLATION: 2000 N-m.

v-1.3

ZEYN B. UZMAN
NY PE# 16 080223

GROUND SCREW: KRINNER S SERIES GROUND SCREW; SOUTH SCREW - 76mm X 2100mm; NORTH SCREW - 76mm X 2100mm
MODULE DIMENSIONS: LONG EDGE - 77.48 (1968 mm); SHORT EDGE - 39.02 (991 mm); THICKNESS - 1.78 (45 mm)
DESIGN CRITERIA: WIND SPEED - 120 MPH; SNOW LOAD - 40 PSF; EXPOSURE CATEGORY - C; TILT ANGLE - 25°; ROCK SIZE - 4in; MODULE ORIENTATION - LANDSCAPE
TERRASMART, LLC; 8033 FORSYTH BLVD, ST. SUITE 500, FORT MYERS, FL 33912; P 239.362.0211 | F 239.362.0586; WWW.TERRASMART.COM

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TC - 4/26/2018	
ENG. APPROVED BY	DATE
MF - 4/26/2018	
OPS. APPROVED BY	DATE
SK - 4/26/2018	

PROJECT NAME: TRIAL
PROJECT NUMBER: 18-XXXX
CLIENT: TERRASMART
MODULE: REC
REV: 0
SHEET NUMBER: 2 OF 5
SHEET SIZE: A

TERRASMART
BETTER SOLUTIONS. SMARTER PRODUCTS.

Ground Screw Specification Sheet

KSF G 76x2100-3xM16

Material:	Steel, galvanized to ISO 1461 (EQ. ASTM A123)
Nominal Length:	82 inches
Shank Diameter:	3 inches
Wall Thickness:	0.165 inches (8 Gauge)
Weight:	31 pounds
Warranty:	20-year limited warranty
Quality:	Patented body formed from a single steel pipe Continuous spiral thread around shank Forged chisel-tip for insertion into soil, including rock

Load Capacities

Max Down Force:	10,125 lbs
Max Up Force:	7,313 lbs
Max Lateral Force:	2,588 lbs
Max Moment:	2,499 lb-ft

Note: The Load Capacities shown were derived from extensive testing in medium dense soils and include a safety factor of 1.5. The tests were performed in such a manner as to replicate typical loading conditions. TerraSmart recommends that a geotechnical soil composition analysis and an on-site ground screw load test be performed on all projects to determine the most economical screw selection for large-scale projects. The quantity and size of ground screws should be designed to support the structure and all applicable loads, including wind, snow, and other loads. Bending moments in soil were calculated from the application point of the horizontal force when installed with approximately 20 inches of shank exposed.

PH: 239.362.0211 F: 239.362.0586 REV: 03/01/2013
Visit us online at www.terrasmart.com

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Side View

a	Length	82.0"
b	Outside Diameter	3.00"
c	Inside Diameter	2.67"
d	Internal Adjustment	2.36"
e	Depth	59.0"
g	Adjustment Nuts	3 x M16

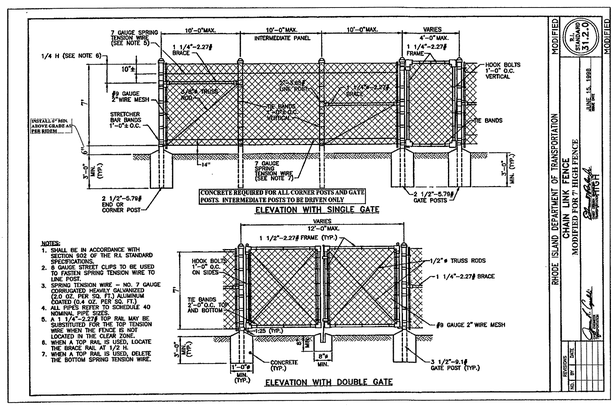
Top View

g	Adjustment Nut Pattern	3 x M16

KRINNER
Ground Screws

TerraSmart is Krinner's United States Distribution Partner. Krinner GmbH of Germany is the worldwide leader in their patented ground screw technology.

PH: 239.362.0211 F: 239.362.0586 REV: 03/01/2013
Visit us online at www.terrasmart.com



PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO GAIN PRELIMINARY PLAN APPROVAL FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT IN THE LARGE SYSTEM CATEGORY IN ACCORDANCE WITH TIVERTON ZONING REGULATIONS, UNDER ARTICLE XXIV SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS, FOR PROPOSED LOT 3 AS SHOWN ON THIS PLAN. THE PHOTOVOLTAIC SYSTEM SHALL CONSIST OF APPROXIMATELY 314 ARRAYS, WITH 12 TO 24 PHOTOVOLTAIC MODULES PER ARRAY, FOR A TOTAL OF 7,368 PHOTVOLTAIC MODULES. THE 7,368 PHOTOVOLTAIC MODULES WILL GENERATE APPROXIMATELY 2,873 kW OF ELECTRICITY. THE PHOTOVOLTAIC SYSTEM SHALL BE INSTALLED ON PROPOSED LOT 3 WHICH IS APPROXIMATELY 19.1 ACRES IN SIZE.
NOTE LOTS 1, 2, 3, & 4 AS SHOWN ARE PART OF A 5 LOT RURAL FRONTAGE SUBDIVISION FOR FOGLAND, LLC. CURRENTLY IN THE PERMITTING PROCESS. PROPOSED LOTS 1, 2, 4 & 5 (LOT 5 NOT SHOWN) ARE NOT PART OF THE SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT. (SEE SHEET 1 FOR SUBDIVISION LAYOUT)

WILLIAM F. SMITH
No. 5084
REGISTERED PROFESSIONAL ENGINEER

REVISIONS:
#2; 06/06/19: PER REVIEW COMMENTS
#1; 04/09/19: NO REVISIONS THIS SHEET

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
WETLANDS APPLICATION NO. 19-0091
DATED: JUL 23 2019
SIGNATURE FOR DEPARTMENT

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
SOLAR ARRAY RACKING DETAILS
PREPARED FOR
COOK FARM SOLAR PROJECT
ASSESSORS PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND
OWNER/APPLICANT:
FOGLAND, LLC (C/O DEBORAH SANFORD)
75 SEARS ROAD
SOUTHBOROUGH, MA 01772
SCALE: AS NOTED DATE: MARCH 8, 2019

Civil Engineering Concepts, Inc.
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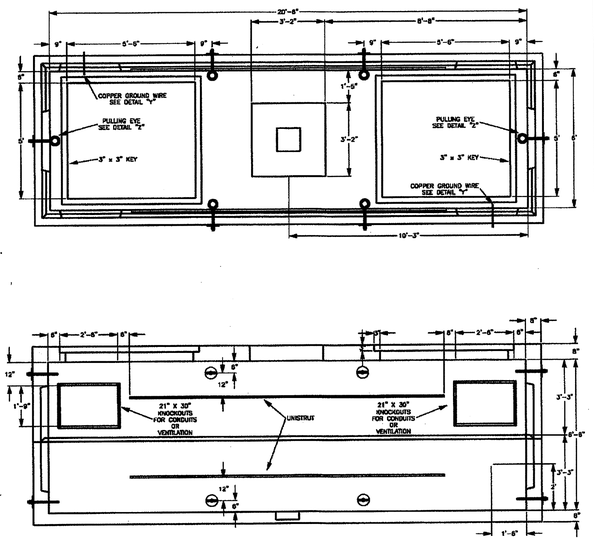
NEW BEDFORD, MA. 02742
(508) 990-4900
JOB#: 03-043 EMAIL: wsmithcec@aol.com

C-8

MANHOLE, DOUBLE SWITCHGEAR

Precast concrete. Two piece manhole, 6' x 20'-6" x 6'-6" ID with two openings for switchgear collars. In accordance with National Grid Material Specification Standards MS-3473.

NOTE: This is a 'Profiled Item'. It is not stocked and a material request must be completed when needed.



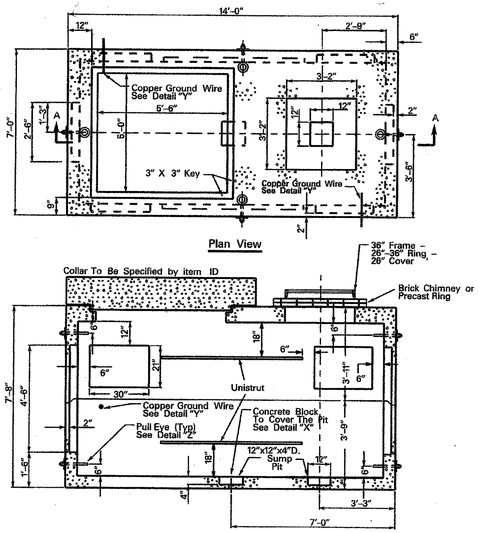
NATIONAL GRID DOUBLE SWITCH MANHOLE DETAIL

NOT TO SCALE

STD ITEM	SAP ITEM ID	PS ITEM ID
UM30	TBD	N/A

25.2 Switchgear Manhole

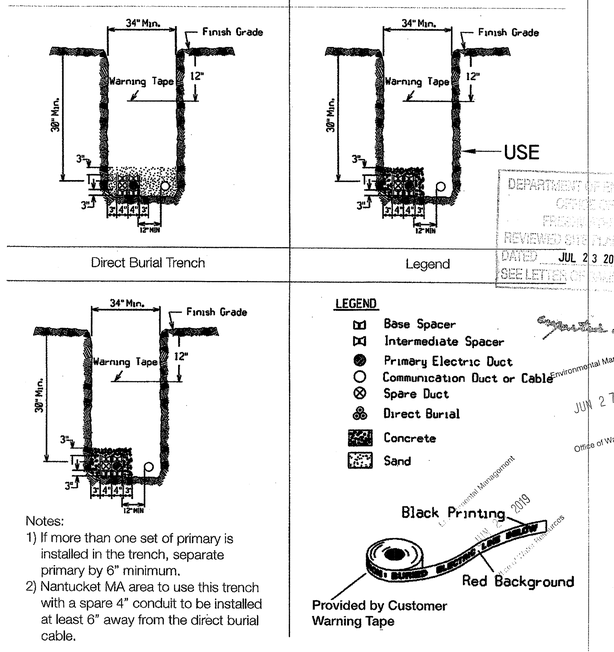
Switchgear installation may be required as part of the infrastructure to serve certain customers. The Customer shall provide and install the switchgear manhole to company specification. On page 57 lists precast concrete providers. The Company shall identify which collar shall be used from the choices on pages 30 and 31.



NATIONAL GRID SWITCHGEAR MANHOLE DETAIL

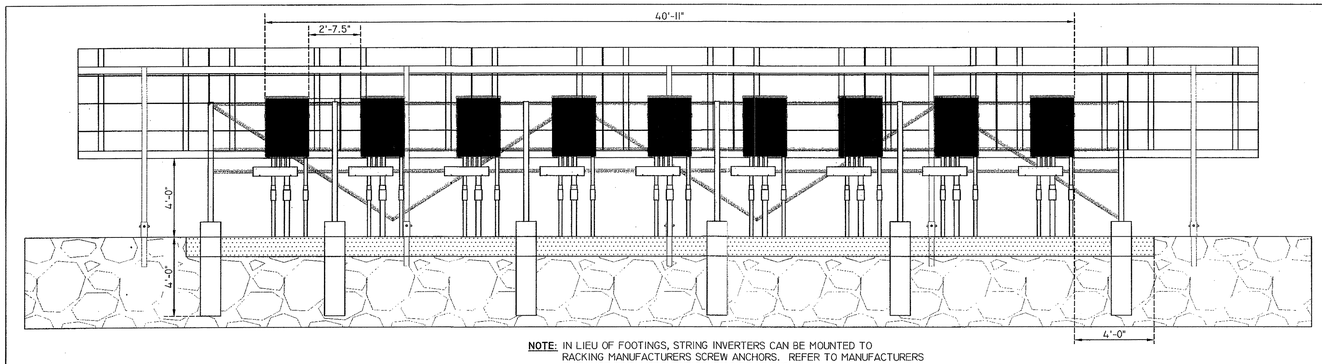
NOT TO SCALE

Figure 20.0-1 Typical Trenches

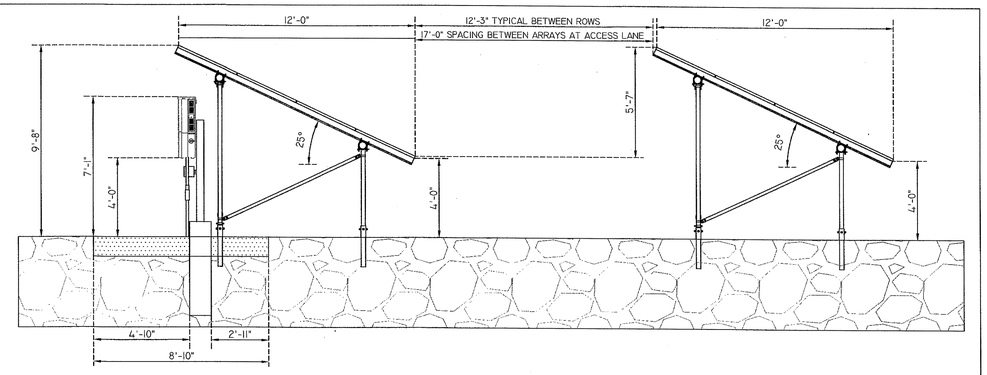


NATIONAL GRID UTILITY TRENCH DETAIL

NOT TO SCALE



NOTE: IN LIEU OF FOOTINGS, STRING INVERTERS CAN BE MOUNTED TO RACKING MANUFACTURERS SCREW ANCHORS. REFER TO MANUFACTURERS GUIDANCE FOR INSTALLATION SPECIFICATIONS.

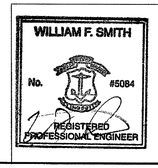


STRING INVERTER AND SOLAR ARRAY SPACING DETAIL

NOT TO SCALE

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO GAIN PRELIMINARY PLAN APPROVAL FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT IN THE LARGE SYSTEM CATEGORY IN ACCORDANCE WITH TIVERTON ZONING REGULATIONS, UNDER ARTICLE XXIV SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS, FOR PROPOSED LOT 3 AS SHOWN ON THIS PLAN. THE PHOTOVOLTAIC SYSTEM SHALL CONSIST OF APPROXIMATELY 314 ARRAYS, WITH 12 TO 24 PHOTOVOLTAIC MODULES PER ARRAY, FOR A TOTAL OF 7,368 PHOTVOLTAIC MODULES. THE 7,368 PHOTOVOLTAIC MODULES WILL GENERATE APPROXIMATELY 2,873 kW OF ELECTRICITY. THE PHOTOVOLTAIC SYSTEM SHALL BE INSTALLED ON PROPOSED LOT 3 WHICH IS APPROXIMATELY 19.1 ACRES IN SIZE.
NOTE LOTS 1, 2, 3, & 4 AS SHOWN ARE PART OF A 5 LOT RURAL FRONTAGE SUBDIVISION FOR FOGLAND, LLC. CURRENTLY IN THE PERMITTING PROCESS.
PROPOSED LOTS 1, 2, 4 & 5 (LOT 5 NOT SHOWN) ARE NOT PART OF THE SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT. (SEE SHEET 1 FOR SUBDIVISION LAYOUT)



#2: 06/06/19: PER REVIEW COMMENTS
#1: 04/09/19: NO REVISIONS THIS SHEET
REVISIONS:

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
ADDITIONAL SOLAR RACKING & ELECTRIC DETAIL SHEET
PREPARED FOR
COOK FARM SOLAR PROJECT
ASSESSORS PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND
OWNER/APPLICANT:
FOGLAND, LLC (C/O DEBORAH SANFORD)
75 SEARS ROAD
SOUTHBOROUGH, MA 01772
SCALE: AS NOTED
DATE: MARCH 8, 2019

Civil Engineering Concepts, Inc.
34A MAIN STREET
LITTLE COMPTON, RI 02837
PH: (401) 592-0177
FAX: (401) 592-0178
P.O. BOX 5323
NEW BEDFORD, MA. 02742
(508) 990-4900
JOB#: 03-043
EMAIL: wsmithcec@aol.com

C-9

ROLLMAX™
ROLLED EROSION CONTROL

Specification Sheet
VMax® C350® Turf Reinforcement Mat

DESCRIPTION

The composite turf reinforcement mat (C-TRM) shall be a machine-produced mat of 100% coconut fiber matrix incorporated into permanent three-dimensional turf reinforcement matting. The matrix shall be evenly distributed across the entire width of the matting and stitch bonded between super heavy duty UV-stabilized nettings with 0.50 x 0.50 in. (1.27 x 1.27 cm) openings, an ultra heavy duty UV-stabilized, dramatically corrugated (crimped) intermediate netting with 0.5 x 0.5 in. (1.27 x 1.27 cm) openings, and covered by a super heavy duty UV-stabilized nettings with 0.50 x 0.50 in. (1.27 x 1.27 cm) openings. The middle corrugated netting shall form prominent closely spaced ridges across the entire width of the mat. The three nettings shall be stitched together on 1.50 in. (3.81 cm) centers with UV-stabilized polypropylene thread to form permanent three-dimensional turf reinforcement matting. All mats shall be manufactured with colored thread stitched along both outer edges as an overlap guide for adjacent mats.

The C350 shall meet Type 5A, B and C specification requirements established by the Erosion Control Technology Council (ECTC) and Federal Highway Administration's (FHWA) *FP-03 Section 713.18.*

Material Content		
Matrix	100% Coconut Fiber	0.5 lb/sy (0.27 kg/sm)
Netting	Top and Bottom, UV-Stabilized Polypropylene	8 lb/1000 sf (3.91 kg/100 sm)
	Middle, Corrugated UV-Stabilized Polypropylene	24 lb/1000 sf (11.7 kg/100 sm)
Thread	Polypropylene, UV Stable	

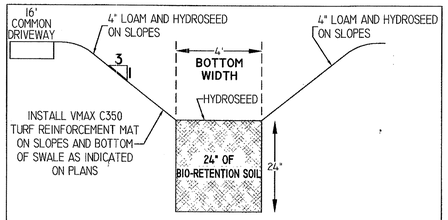
Standard Roll Sizes		
Width	6.5 ft (2.0 m)	8 ft (2.44 m)
Length	55.5 ft (16.9 m)	90 ft (27.4 m)
Weight ± 10%	37 lbs (16.8 kg)	74 lbs (33.6 kg)
Thread	40 sy (33.4 sm)	80 sy (66.8 sm)

Index Property	Test Method	Typical
Thickness	ASTM D6525	0.79 in. (18.54 mm)
Resiliency	ASTM D6524	90%
Density	ASTM D792	0.917 g/cm³
Mass/Unit Area	ASTM D6566	18.36 oz/sy (624 g/sm)
UV Stability	ASTM D4355/ 1000 HR	86%
Porosity	ECTC Guidelines	99%
Stiffness	ASTM D1388	0.24 in.-lb (275590 mg-cm)
Light Penetration	ASTM D6567	7.2%
Tensile Strength – MD	ASTM D6818	585.8 lbs/ft (8.70 kN/m)
Elongation – MD	ASTM D6818	45.3%
Tensile Strength – TD	ASTM D6818	687.6 lbs/ft (10.20 kN/m)
Elongation – TD	ASTM D6818	19.5%
Biomass Improvement	ASTM D7322	380%

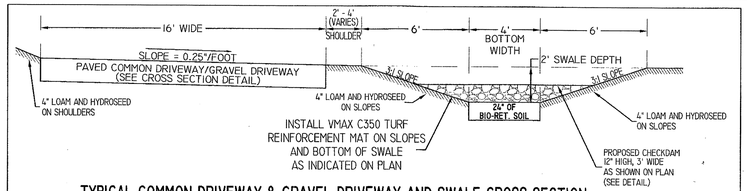
Design Permissible Shear Stress	Short Duration	Long Duration
Phase 1 Unvegetated	3.2 psf (153 Pa)	3.0 psf (144 Pa)
Phase 2 Partially Veg.	10.0 psf (480 Pa)	10.0 psf (480 Pa)
Phase 3 Fully Veg.	12.0 psf (576 Pa)	10.0 psf (480 Pa)
Unvegetated Velocity	10.5 fps (3.2 m/s)	
Vegetated Velocity	20 fps (6.0 m/s)	

Slope Design Data: C Factors	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.0005	0.015	0.043
20-50 ft	0.018	0.031	0.050
≥ 50 ft (15.2 m)	0.035	0.047	0.057

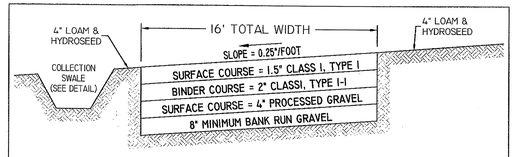
Roughness Coefficients – Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.041
0.50 – 2.0 ft	0.040-0.013
≥ 2.0 ft (0.60 m)	0.012



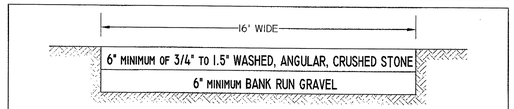
GRASS COLLECTION SWALE CROSS SECTION
NOT TO SCALE



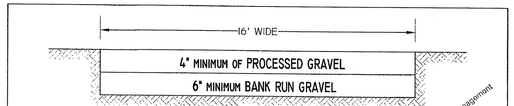
TYPICAL COMMON DRIVEWAY & GRAVEL DRIVEWAY AND SWALE CROSS SECTION
SCALE: 1" = 4'



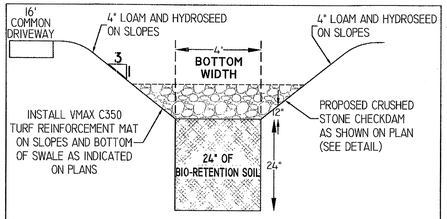
16' WIDE PAVED COMMON DRIVEWAY CROSS SECTION
NOT TO SCALE



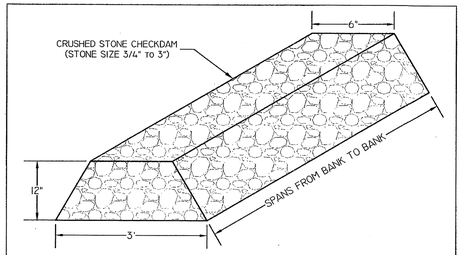
WASHED STONE ACCESS DRIVEWAY CROSS SECTION
NOT TO SCALE



GRAVEL DRIVEWAY CROSS SECTION
NOT TO SCALE

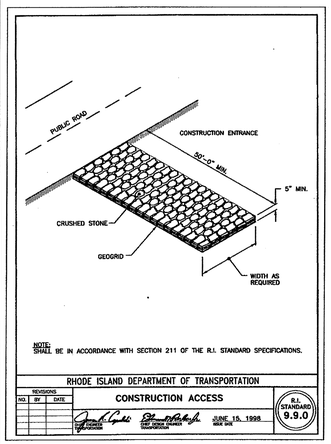


GRASS COLLECTION SWALE CROSS SECTION AT CHECKDAM
NOT TO SCALE



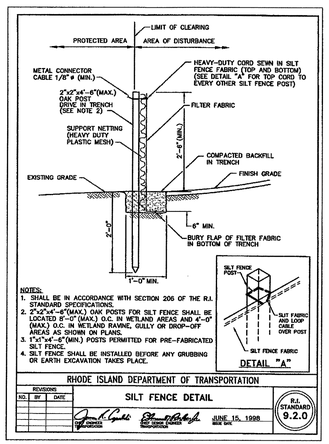
CRUSHED STONE CHECKDAM DETAIL
NOT TO SCALE

BIO-RETENTION SOIL SPECIFICATION		
SAND	85 - 88%	
SOIL FINES	8 - 12%	(< 2% CLAY)
ORGANICS	3 - 5%	(6-12 MONTH AGED LEAF COMPOST)



NOTE: SHALL BE IN ACCORDANCE WITH SECTION 211 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
CONSTRUCTION ACCESS
R.I. STANDARD 9.9.0
JUNE 15, 1998

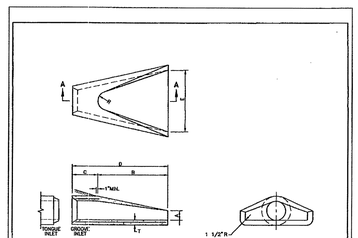


NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
2. 2"x2"x4'-6"(MAX.) OAK POSTS FOR SILT FENCE SHALL BE LOCATED 5'-0" (MAX.) O.C. IN WETLAND AREAS AND 4'-0" (MAX.) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.
3. 1"x1"x4'-6"(MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
4. SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SILT FENCE DETAIL
R.I. STANDARD 9.2.0
JUNE 15, 1998

COMPOST FILTER SOCK SPECIFICATION:

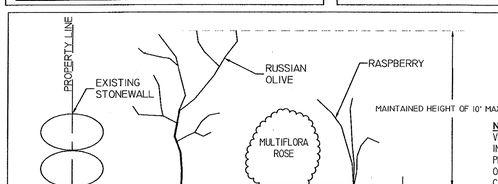
COMPOST FILTER SOCK SHALL COMPLY WITH SECTION 206.01.4, 206.02.04 AND 206.03.4 OF THE RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AMENDED 2013, WITH ALL REVISIONS, AS FOLLOWS:
COMPOST FILTER SOCK MATERIAL AND COMPOST MATERIAL SHALL BE IN ACCORDANCE WITH AASHTO DESIGNATION:MP 9-06 (2007 OR LATEST EDITION). COMPOST SHALL ALSO MEET ALL APPLICABLE FEDERAL AND STATE REGULATIONS. FOR COMPOST FILTER SOCKS 18 INCHES OR LESS IN DIAMETER, WOODEN STAKES SHALL BE 1 INCH BY 1 INCH, AT 10 FOOT INTERVALS ON CENTER, AND OF A LENGTH THAT SHALL PROJECT INTO THE SOIL 1 FOOT LEAVING 3 INCHES TO 4 INCHES PROTRUDING ABOVE THE FILTER SOCK.



DIMENSIONS								REINFORCEMENT
DIA.	A	B	C	D	E	R	T	ONE LAYER REINFORCEMENT AT INSIDE OF WALL MIN. AREA OF EACH WAY SQ. IN./FT.)
1'-0"	4"	2'-0"	4"-0 7/8"	6"-0 7/8"	2'-0"	8"	2"	0.048
1'-3"	6"	2'-3"	2'-10"	6'-1"	2'-0"	11"	2 7/8"	0.054
1'-6"	9"	2'-3"	2'-10"	6'-1"	2'-0"	13"	2 7/8"	0.060
2'-0"	1 1/2"	2'-7 1/2"	2'-8"	6'-1 1/2"	2'-0"	1'-0"	3"	0.072
2'-6"	1'-0"	4'-6"	1'-7 3/4"	6'-1 3/4"	2'-0"	1'-0"	3 1/2"	0.084
3'-0"	1'-3"	5'-3"	2'-10 3/4"	6'-1 3/4"	2'-0"	1'-0"	4"	0.096
3'-6"	1'-6"	6'-3"	2'-11"	6'-2"	6'-6"	1'-10"	4 1/2"	0.108
4'-0"	2'-0"	8'-0"	3'-2"	6'-2"	7'-0"	1'-10"	5"	0.120
4'-6"	2'-3"	9'-0"	3'-11"	6'-4"	7'-6"	2'-0"	5 1/2"	0.132
5'-0"	2'-6"	9'-0"	3'-3"	6'-3"	6'-0"	7'-0"	6"	0.144

NOTE: SHALL BE IN ACCORDANCE WITH SECTION 701 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
PRECAST CONCRETE FLARED END SECTION
R.I. STANDARD 2.3.0
JUNE 15, 1998



VEGETATED BUFFER DETAIL
NOT TO SCALE

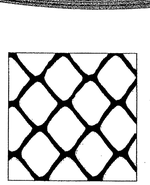
NOTE:
VEGETATED BUFFER TO REMAIN IN CURRENT VEGETATED STATE. PREDOMINANT PLANTS EXISTING ON-SITE WITHIN THE BUFFER CONSIST OF RUSSIAN OLIVE, MULTIFLORA ROSE AND RASPBERRY.
AREAS WITHIN THE BUFFER THAT ARE CURRENTLY UNVEGETATED SHALL BE ALLOWED TO REVEGETATE NATURALLY.

TENAX®

Turf Reinforcement

AVAILABLE ROLL DIMENSIONS AND WEIGHT

ENGLISH		METRIC	
Dimensions	Weight	Dimensions	Weight
6.7 x 100'	88 lbs	2.04m x 30.5m	88.44 kg



Mono-Oriented Net

PHYSICAL CHARACTERISTICS

		NOTES
Polymer Type	High Density Polyethylene	
Structure	Rhomboidal	
Color	Green	
Stabilizer	UV Stabilizer	
Packaging	Rolls	

DIMENSIONAL CHARACTERISTICS

	ENGLISH		METRIC		NOTES
	UNIT		UNIT		
MD Pitch	in	1.375	mm	35	a, c
TD Pitch	in	1.25	mm	31.75	b, c

TECHNICAL CHARACTERISTICS

	ENGLISH		METRIC		NOTES
	UNIT		UNIT		
MD Tensile Strength	lbs/ft	308	kN/m	4.5	a, c
MD Elongation	%	60	%	60	a, c
TD Tensile Strength	lbs/ft	308	kN/m	4.5	b, c
TD Elongation	%	40	%	40	b, c

Notes
a Longitudinal direction
b Transversal direction
c All dimensions and properties are reported as typical values

(800) 878-7829 www.tenaxfence.com sales@tenaxfence.com

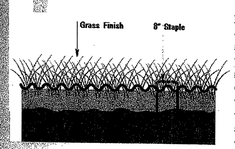
TENAX Installation Guide
Tenax Ground Protection Products

PRE-EXISTING GRASS AREAS
- Remove all rocks, debris and obstructions.
- Fill in holes and indentations with top soil to make the surface as level as possible.
- Cut grass to minimal length.

NON-GRASS AREAS
- Grade and prepare the surface with top soil, seed and fertilizer.

INSTALLATION OF MESH
- Unroll the mesh by reverse rolling.
- Secure all edges of the mesh by installing 8" TENAX staples every 3'.
- Apply tension to the mesh when laying to assure adequate contact to the ground.
- Cutting to size or shape can be done with a utility knife, heavy duty scissors or a circular saw.
- Place additional staples every 3' in all directions.
- Completely fill and cover the mesh with top soil, seed and fertilizer.
- Traffic should not be allowed on the mesh until the grass has grown to 1.5" and has been mowed twice.
- The grass can be mowed as desired after it has grown thru the mesh.

NOTES:
- Products are suitable for temporary car parking, emergency access routes, parking for boats, recreational vehicles, and light weight aircraft, and for use in campgrounds and driveways. In turning areas, the product should be placed and secured with specific care to avoid inconvenient conditions.
- These are not drainage products. Draining the area to be covered should be a separate issue.
- For best results, the mesh should be installed in the spring and fall growing seasons. The entanglement of the grass and mesh is essential for good results.



WARNING:
Although we have produced the most slip resistant grass protection mesh, we cannot account for all the variances in climatic and ground conditions. Until the grass has grown through the mesh and become established, the mesh may be slippery if it becomes wet. Care should be taken if pedestrians are allowed to walk on the mesh during this period. Care should also be taken when walking on mesh in athletic shoes with spikes; such as golf shoes, cleats, etc.

TENAX
4800 East Monument Street
Baltimore, MD 21205
(T) 1-800-355-9465
(F) 1-877-836-2987
www.tenaxus.com

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO GAIN PRELIMINARY PLAN APPROVAL FOR A SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT IN THE LARGE SYSTEM CATEGORY IN ACCORDANCE WITH TIVERTON ZONING REGULATIONS, UNDER ARTICLE XXIV SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENTS, FOR PROPOSED LOT 3 AS SHOWN ON THIS PLAN. THE PHOTOVOLTAIC SYSTEM SHALL CONSIST OF APPROXIMATELY 314 ARRAYS, WITH 12 TO 24 PHOTOVOLTAIC MODULES PER ARRAY, FOR A TOTAL OF 7,368 PHOTVOLTAIC MODULES. THE 7,368 PHOTOVOLTAIC MODULES WILL GENERATE APPROXIMATELY 2,873 kW OF ELECTRICITY. THE PHOTOVOLTAIC SYSTEM SHALL BE INSTALLED ON PROPOSED LOT 3 WHICH IS APPROXIMATELY 19.1 ACRES IN SIZE.
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WILLIAM F. SMITH
No. #5084
REGISTERED PROFESSIONAL ENGINEER

#2; 06/06/19: PER REVIEW COMMENTS, ADD DETAILS
#1; 04/09/19: REVISE SWALE, ADD DETAILS
REVISIONS:

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
PRELIMINARY DETERMINATION
IN APPLICATION NO. 19-00691
DATE: JUL 23 2019

JUN 27 2019
Office of Water Resources
Environmental Management

SOLAR PHOTOVOLTAIC SYSTEM DEVELOPMENT PRELIMINARY PLAN
CIVIL DETAIL SHEET
PREPARED FOR
COOK FARM SOLAR PROJECT
ASSESSORS PLAT 809 LOT 101
PROPOSED SUBDIVISION LOT #3
MAIN ROAD & EIGHT ROD WAY (AKA ASA DAVOL ROAD)
TIVERTON, RHODE ISLAND
OWNER/APPLICANT:
FOGLAND, LLC. (C/O DEBORAH SANFORD)
75 SEARS ROAD
SOUTHBOROUGH, MA 01772
SCALE: AS NOTED DATE: MARCH 8, 2019

Civil Engineering Concepts, Inc.
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LITTLE COMPTON, RI 02837
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FAX: (401) 592-0178
P.O. BOX 5323
NEW BEDFORD, MA. 02742
(508) 990-4900
JOB#: 03-043 EMAIL: wsmithcec@aol.com

C-10

PLANT LIST

KEY	QTY	LATIN	COMMON	SIZE	NOTES
Specimen Trees					
A	7 QTY	Ilex opaca	American Holly	5' tall	evergreen, native, 20-40' high
B	1 QTY	Sassafras albidum	Sassafras	2" caliper	yellow-orange fall color, native, deciduous, 30-60' high
C	10 QTY	Ilex glabra	Inkberry	3 gallon	evergreen shrub, 6-8' high, native
D	12 QTY	Comptonia peregrina	Sweetfern	3 gallon	evergreen shrub, 2-5' high, native
			Pollinator Seed Mix		see mix list below

Pollinator Seed Mix : Mesic to Dry Native Pollinator Mix

General Product Information:

Contains native forbs common in the Northeast. Excellent for wildlife food and shelter, including pollinators. Mix formulations are subject to change without notice depending on the availability of existing and new products. While the formula may change, the guiding philosophy and function of the mix will not.

Source: Ernst Seeds

Mix Composition

12.0% *Coreopsis lanceolata* (Lanceleaf Coreopsis)
12.0% *Echinacea purpurea* (Purple Coneflower)
12.0% *Penstemon digitalis, PA Ecotype* (Tall White Beardtongue, PA Ecotype)
12.0% *Rudbeckia hirta, Coastal Plain NC Ecotype* (Blackeyed Susan, Coastal Plain NC Ecotype)
9.5% *Chamaecrista fasciculata, PA Ecotype* (Partridge Pea, PA Ecotype)
6.0% *Heliopsis helianthoides, PA Ecotype* (Oxeye Sunflower, PA Ecotype)
6.0% *Verbena hastata, PA Ecotype* (Blue Vervain, PA Ecotype)
5.0% *Aster laevis, NY Ecotype* (Smooth Blue Aster, NY Ecotype)
5.0% *Liatris spicata* (Marsh (Dense) Blazing Star (Spiked Gayfeather))
3.0% *Asclepias incarnata, PA Ecotype* (Swamp Milkweed, PA Ecotype)
3.0% *Aster novae-angliae (Symphyotrichum n.), PA Ecotype* (New England Aster, PA Ecotype)
2.0% *Senna hebecarpa, VA & WV Ecotype* (Wild Senna, VA & WV Ecotype)
2.0% *Tradescantia ohiensis, PA Ecotype* (Ohio Spiderwort, PA Ecotype)
2.0% *Zizia aurea, PA Ecotype* (Golden Alexanders, PA Ecotype)
1.6% *Monarda fistulosa, Fort Indiantown Gap-PA Ecotype* (Wild Bergamot, Fort Indiantown Gap-PA Ecotype)
1.5% *Geum canadense, PA Ecotype* (White Avens, PA Ecotype)
1.5% *Pycnanthemum tenuifolium* (Narrowleaf Mountainmint)
1.0% *Baptisia australis, Southern WV Ecotype* (Blue False Indigo, Southern WV Ecotype)
1.0% *Lespedeza capitata, PA Ecotype* (Roundhead Lespedeza, PA Ecotype)
0.5% *Solidago juncea, PA Ecotype* (Early Goldenrod, PA Ecotype)
0.3% *Eupatorium perfoliatum, PA Ecotype* (Boneset, PA Ecotype)
0.2% *Solidago nemoralis, PA Ecotype* (Gray Goldenrod, PA Ecotype)
0.2% *Solidago rugosa, PA Ecotype* (Wrinkleleaf Goldenrod, PA Ecotype)
0.1% *Eupatorium fistulosum, PA Ecotype* (Joe Pye Weed, PA Ecotype)
0.1% *Eupatorium rugosum, PA Ecotype* (White Snakeroot, PA Ecotype)

PLANTING NARRATIVE

Existing Conditions

The project seeks to develop Lot 3 as shown the Civil Engineering Concepts' Plan: Solar Photovoltaic System Development Masterplan. The lot is L shaped with the shortest end with frontage along Main Road, due south of Four Corners and due west of Nonquit Pond. The site is mostly open with rolling terrain and open fields with mixed woodland borders more akin to successional hedgerows. The parcel fits well within a rural character of dispersed farmsteads, fields, stonewalls, and old houses. The existing street view into the site presents a stone wall with burgeoning shrubs and trees, a thick deciduous vegetation framing open field in the foreground. A wood gate allows access into the site. An existing access drive bisects the site east to west, connecting to the woods to the east. Deep into the interior of the site (over 1,800 LF) , a wetland and its buffer as delineated by Natural Resource Service Inc creates an easternmost limit to the project. To the south of the curb cut from main road, an existing wetland frames the site. There are a few segments around the perimeter where the existing vegetated border is less than 30'.

According to preliminary investigation by, project consultant Fred Unger, the southern and northern borders of the parcel already have 20'- 30' of a buffer vegetated with Multiflora Rose, Russian Olive, and Raspberries. Russian Olive will reach a height of 30' and is a hardy, fast growing shrub. Raspberries form dense patches of 3'-9' shrubs. Reaching heights of 6'-15', multiflora rose was originally cultivated for ornamentation, used for erosion control, and as a living fence that forms dense thickets.

It should be noted that these are all deciduous species and will not hold their leaves in winter months. Singular instances, or narrow patches of these plants would not be effective in screening, but thickets twenty to thirty-feet wide as present and planned on site would.

Proposed Conditions

The array is set back from main road a little over 800 LF in order to preserve the rural character along main road and adjacent properties. Between main road and the proposed solar array, existing dense vegetation would remain, helping block views deep into the interior of the site. Between the road and the solar array, the rise in grade is over 68' in elevation. The vegetation in the foreground, along with the change in grade will block the view of the solar array from the road and neighboring homes near the road.

The proposed project seeks to place 146,574 SF of Solar Panels on the upland portion of the site. The Project falls under the category of "large systems" within the Tiverton Solar Ordinance, and as such requires a 50' setback and screening through a vegetated buffer a min of 20' as required by the Ordinance. This project goes above and beyond by facilitating a 30' deep vegetated natural buffer.

The project seeks to preserve the existing vegetative border around the perimeter of the site. Additionally, the project plans to stop mowing any vegetation within 30' of the north and south property lines to allow successional vegetation to emerge from the seedbank. The project also plans to plant a pollinator seed mix between the rows of the panels and on the rest of the open areas of the lot. It is anticipated that this seed mix may initially infill these border areas as well, before becoming denser with shrubs and pioneering trees.

The project team has selected a plant palette of native shrubs and trees from Rhode Island native plant database around an equipment enclosure. These include American Holly, Sassafras, Inkberry, and Sweetfern. The species selected are well adapted to a range of soil types from dry to moist and can withstand coastal influences.

For the first two or three years, a mix of clovers and buckwheat will be planted between rows and around the site generally in order to choke out weed species without using herbicides. That mix shall include Sweet Clover, Red Clover, Crimson Clover, Balansa Clover, Mancum Buckwheat and Common Buckwheat. After the weeds are under control, the areas inside the fence will be maintained with those same species. The areas outside the fence will be reseeded with a pollinator seed mix .

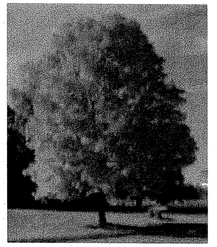
The areas directly under the panels will be planted with a grass mix optimized for growing under solar projects including Creeping Red fescue, Chariot Hard Fescue. Harpoon Hard Fescue, Chewings Fescue, Moonstruck Kentucky Bluegrass, Shamrock Kentucky BlueGrass.

The project seeks to connect the solar array to underground utilities. As such, the project will need to provide a switch gear and metering cabinets which are planned for approximately 300 ft from Main Road. The project will screen the view of these items with a fence and vegetation. The proposed screening stockade fence is 7' (seven) feet high. Land clearing on site is limited to what is necessary for the construction, operation, and maintenance of the solar energy system

American Holly

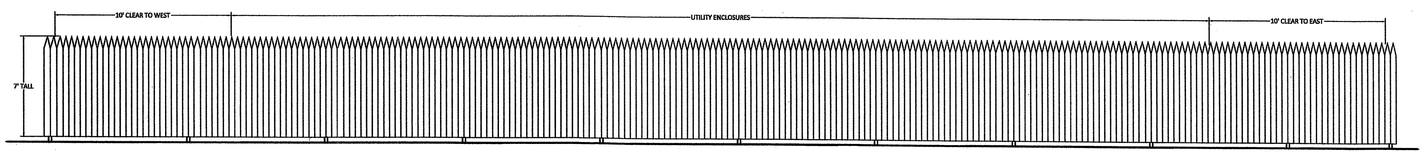
Sweetfern

Inkberry

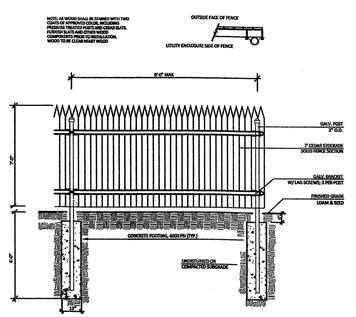


Sassafras Tree

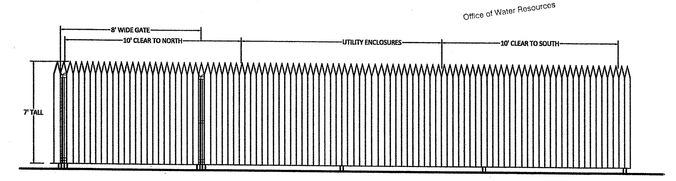
Pollinator Seed Blend



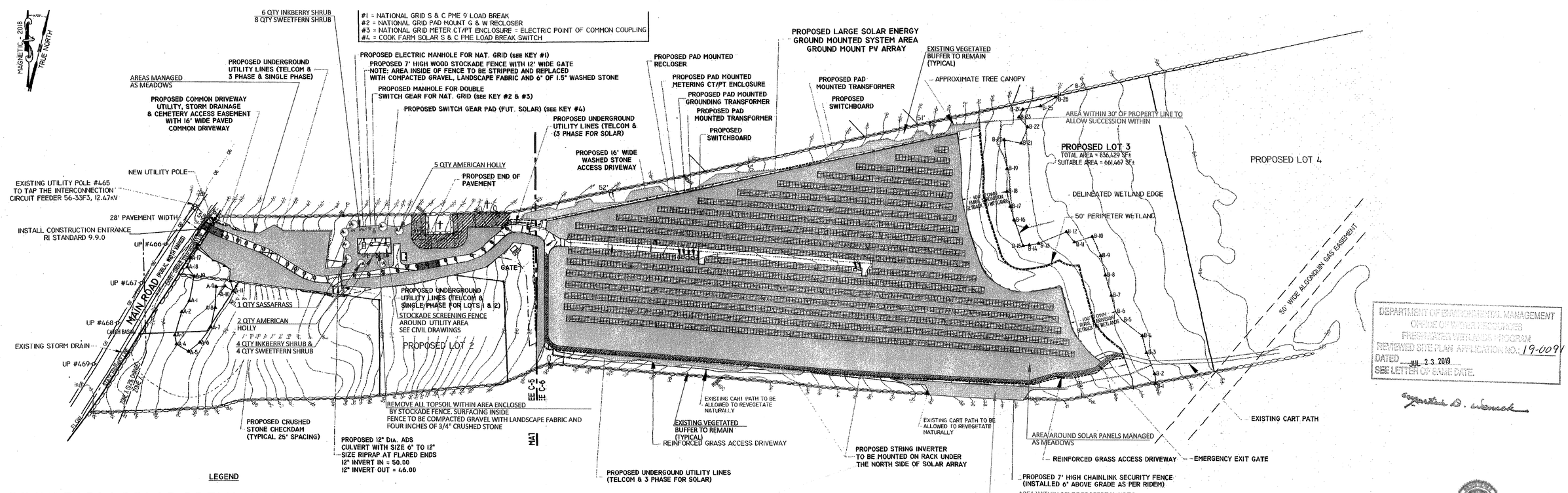
02- SOUTH ELEVATION OF CEDAR SCREENING FENCE



01- DETAIL STOCKADE SCREENING FENCE -VIEW FROM UTILITY SIDE OF FENCE



03- EAST ELEVATION OF STOCKADE SCREENING FENCE



COOK FARM SOLAR PRELIMINARY LANDSCAPE PLAN

REVISED 06.24.2019

Berkshire Design Group

PROPOSED RELAY SETTINGS

ANSI	PICKUP			TIME DELAY (CLEARING TIME) / TIME DIAL	
#	p.u.	Primary	Secondary	Cycles	Seconds
27	0.50	3.6kV	0.36V	66	1.1
27	0.88	6.27kV	0.627V	120	2.0
59	1.10	7.92kV	0.792V	120	2.0
59	1.20	8.64kV	0.864V	9.6	0.16
51G	0.2	27A	0.135A	1.8TD U1 CURVE	
	FREQUENCY				
81/U	58.5Hz			18000	300.0
81/U	56.5Hz			9.6	0.16
81/O	61.2Hz			18000	300.0
81/O	62.0Hz			9.6	0.16

1. TOTAL CLEARING TIME INCLUDES 3 CYCLE ESTIMATE CONTACTOR OPENING TIME (0.05 SEC).
2. THE RELAY WILL BE PROGRAMMED TO TRIP THE MAIN DISCONNECT WITHIN 2 SECOND ON AC POWER FAILURE, DC BATTERY FAILURE/DEGRADATION AND ON RELAY HARDWARE FAILURE.
3. AUTO-RESTORATION: RELAY PROGRAMMING LOGIC INCLUDED SUCH THAT THE SYSTEM WILL RESTORE THE INTERCONNECTION UPON THE STABILIZATION OF THE UTILITY VOLTAGE AND FREQUENCY. VOLTAGE AND FREQUENCY WILL BE SUPERVISED BY 27, 81, AND 59 ELEMENTS FOR A FIVE-MINUTE DURATION BEFORE CLOSE COMMAND IS INITIATED. AUTO-RESTORATION LOGIC WILL LOCK-OUT RELAY BASED ON OVERCURRENT TRIP OR MANUAL OPEN.

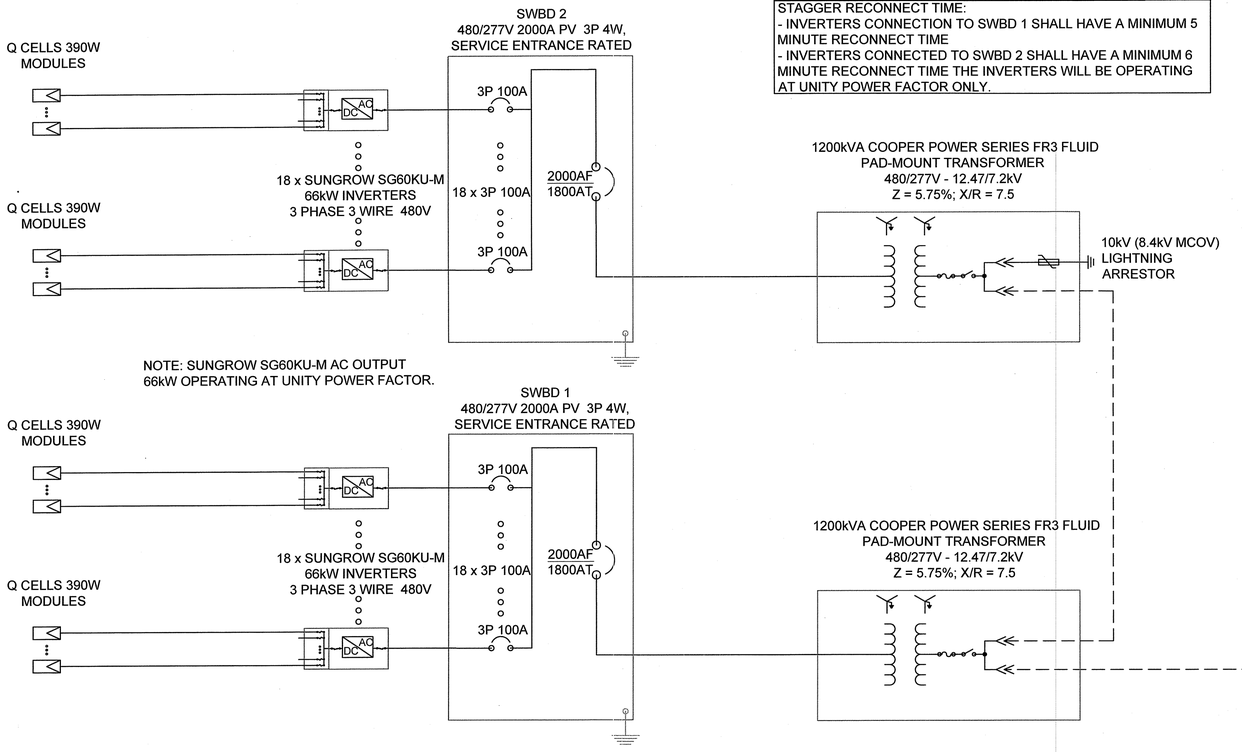
PV System Specifications

PV Modules	7368 x Q CELLS Q.PEAK DUO L-G5.3 390W
DC Rating at STC	2873.52kW
Inverters	36 x SUNGROW SG60KU-M 66kW INVERTER, UL 1741SA, IEEE1547
TOTAL AC Rating	2376kW
PV/AC RATIO	1.2

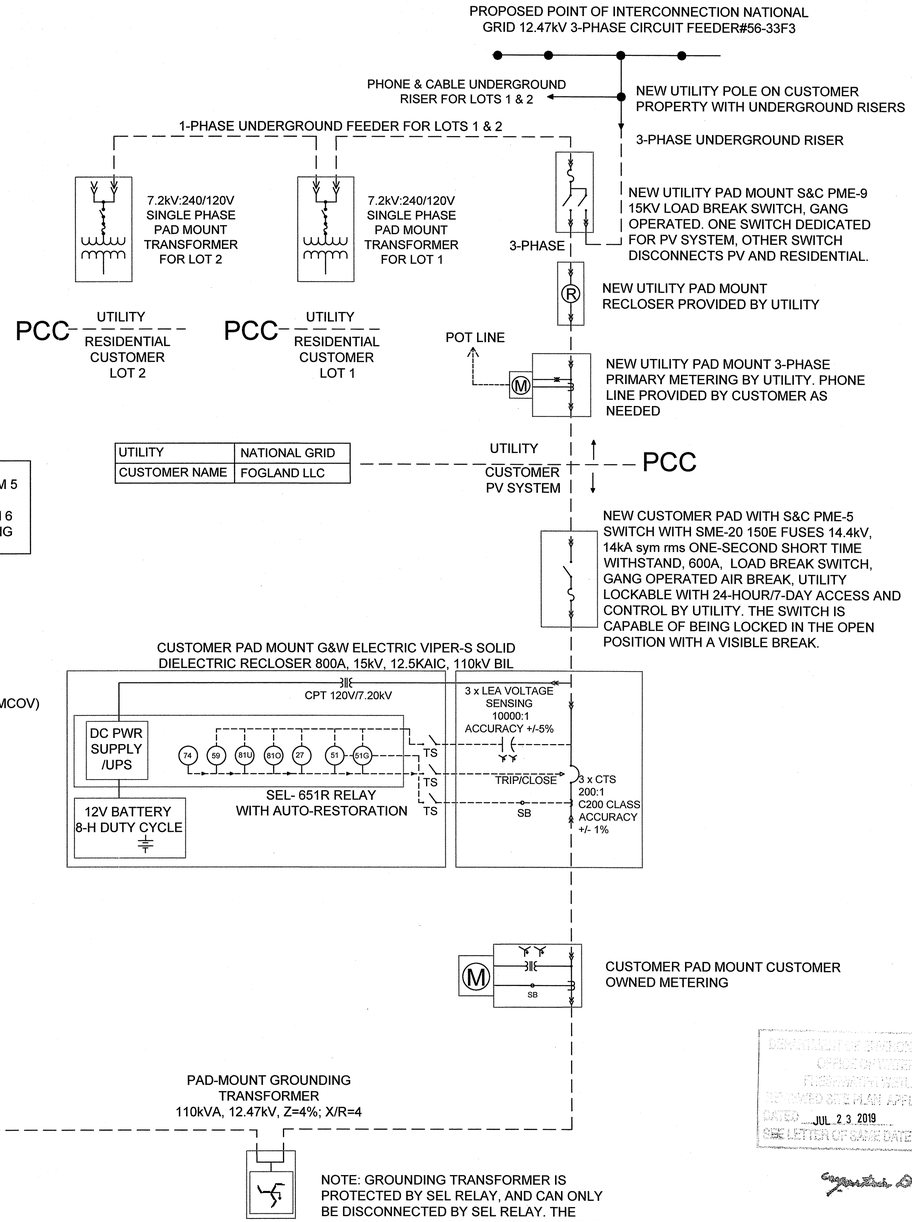
INVERTER SETTINGS

ANSI	PICKUP	DELAY
#	(%V / V_{LN}, Hz)	(CYCLES : SECONDS)
27	50% / 138.5V	66 : 1.1
27	88% / 243.8V	120 : 2.0
59	110% / 304.7V	120 : 2.0
59	120% / 332.4V	9.6 : 0.16
59	140% / 387.8V	0.06 : 0.001
81/O	61.2Hz	18000 : 300
81/O	62.0Hz	9.6 : 0.16
81/U	58.0Hz	18000 : 300
81/U	56.5Hz	9.6 : 0.16

STAGGER RECONNECT TIME:
- INVERTERS CONNECTION TO SWBD 1 SHALL HAVE A MINIMUM 5 MINUTE RECONNECT TIME
- INVERTERS CONNECTED TO SWBD 2 SHALL HAVE A MINIMUM 6 MINUTE RECONNECT TIME THE INVERTERS WILL BE OPERATING AT UNITY POWER FACTOR ONLY.



NOTE: GROUNDING TRANSFORMER IS PROTECTED BY SEL RELAY, AND CAN ONLY BE DISCONNECTED BY SEL RELAY. THE FACILITY WILL NOT BE CONNECTED TO THE EPS IF THE GROUNDING BANK IS OFFLINE.



FOR UTILITY SUBMISSION NOT FOR CONSTRUCTION

REVISIONS				
REV	DESCRIPTION	DATE	DESIGN	REVIEWED
10	PER TOWN ENGINEER COMMENTS	06-24-2019	RW	MH
9	DC CAPACITY INCREASE	03-07-2019	RW	MH
8	CENTRAL TO STRING INVERTER	02-21-2019	SJ	MH
7	REVISED PER UTILITY COMMENTS	01-29-2019	KR	MH
6	FOR UTILITY DISCUSSION POLE TO PADS	01-11-2018	KR	JB
5	REVISED PER UTILITY COMMENTS	10-17-2018	KR	JB

NEO Virtus Engineering, Inc. Since 2001
LITTLETON, MASSACHUSETTS

JAMES M. BING
JAMES BING No. PE16253 REGISTERED PROFESSIONAL ENGINEER ELECTRICAL
10/4/2019

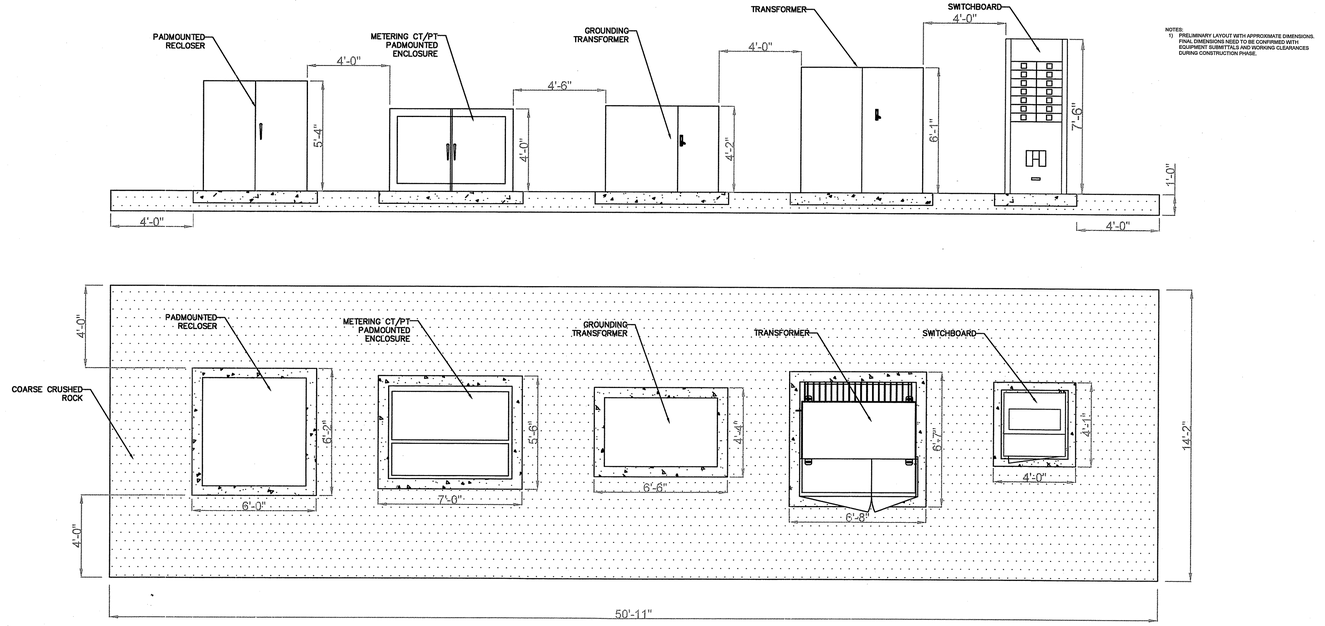
COOK FARM SOLAR
4366 MAIN ROAD
TIVERTON, RI 02878

DWG NAME: AC 1-LINE

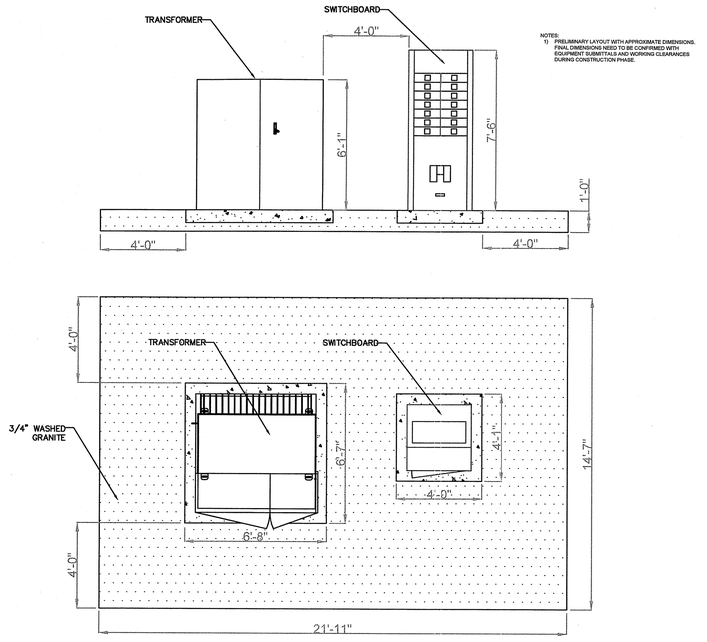
SIZE: D | SCALE: AS-NOTED | DATE: 10-17-2018

DWG NO.: E-1.0

NOT FOR CONSTRUCTION



NOTES:
1) PRELIMINARY LAYOUT WITH APPROXIMATE DIMENSIONS. FINAL DIMENSIONS NEED TO BE CONFIRMED WITH EQUIPMENT SUBMITTALS AND WORKING CLEARANCES DURING CONSTRUCTION PHASE.



NOTES:
1) PRELIMINARY LAYOUT WITH APPROXIMATE DIMENSIONS. FINAL DIMENSIONS NEED TO BE CONFIRMED WITH EQUIPMENT SUBMITTALS AND WORKING CLEARANCES DURING CONSTRUCTION PHASE.

Environmental Management
JUN 27 2019
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
REVIEWED WETLAND APPLICATION NO. 19-0091
DATED JUL 23 2019
SUBJECT TO ATTACHED CONDITIONS

FOR UTILITY SUBMISSION
NOT FOR CONSTRUCTION

REVISIONS				
REV	DESCRIPTION	DATE	DESIGN	REVIEWED
10	PER TOWN ENGINEER COMMENTS	06-24-2019	RW	MH
9	DC CAPACITY INCREASE	03-07-2019	RW	MH
8	CENTRAL TO STRING INVERTER	02-21-2019	SJ	MH
7	REVISED PER UTILITY COMMENTS	01-29-2019	KR	MH
6	FOR UTILITY DISCUSSION POLE TO PADS	01-11-2018	KR	JB
5	REVISED PER UTILITY COMMENTS	10-17-2018	KR	JB

NEO Virtus Engineering, Inc. Since 2001

LITTLETON, MASSACHUSETTS

JAMES M. BING

JAMES BING — No. PE15253 — REGISTERED PROFESSIONAL ENGINEER ELECTRICAL

COOK FARM SOLAR
4366 MAIN ROAD
TIVERTON, RI 02878

DWG NAME: TRANSFORMER PADS

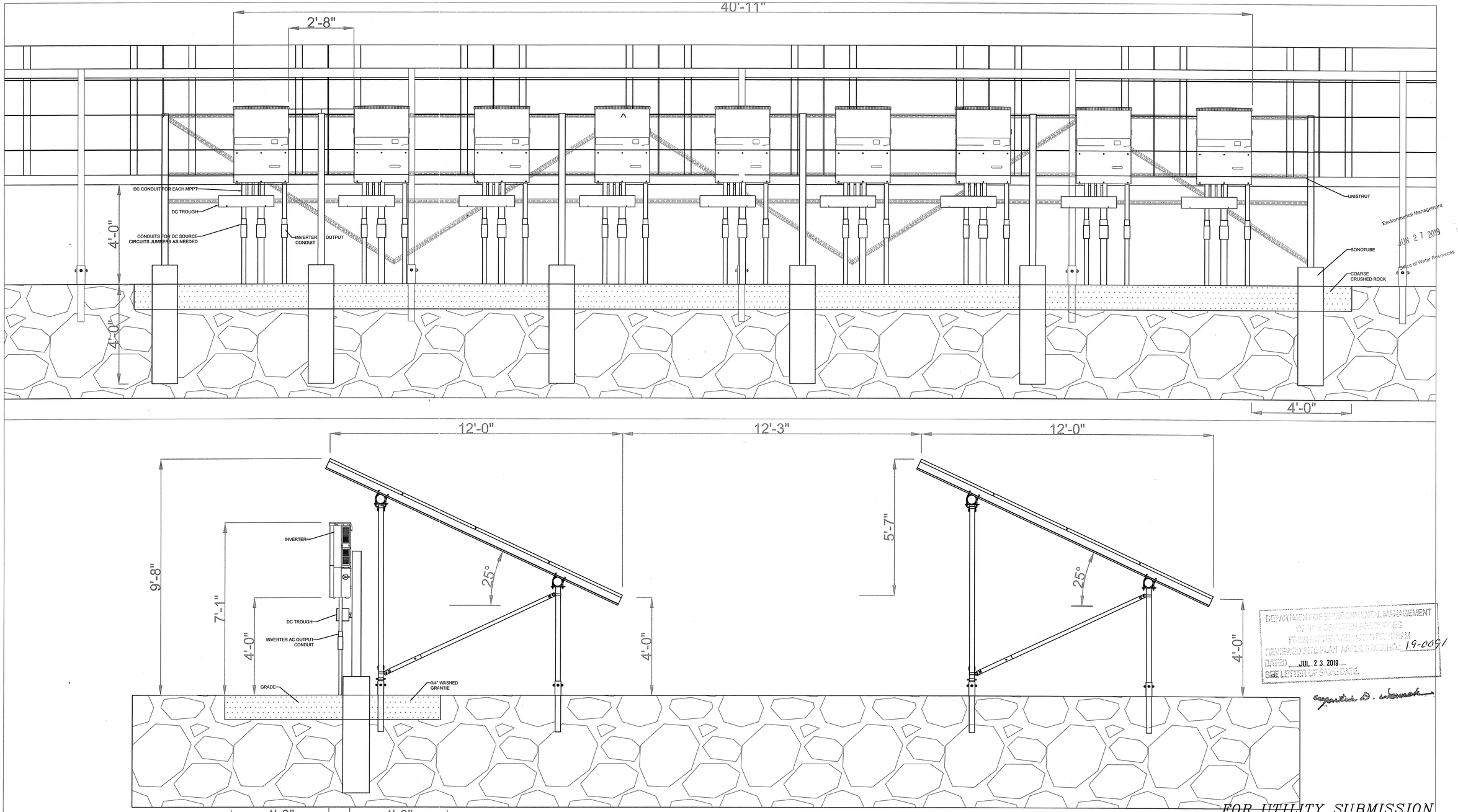
DWG NO.: E-1.1

NOT FOR CONSTRUCTION

SIZE: D

SCALE: AS-NOTED

DATE: 10-17-2018



Environmental Management
JUN 27 2019
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
REVIEWED SITE PLAN APPLICATION NO.: 19-0091
DATED JUL 23 2019
SEE LETTER OF EVEN DATE.

FOR UTILITY SUBMISSION
NOT FOR CONSTRUCTION

REVISIONS				
REV	DESCRIPTION	DATE	DESIGN	REVIEWED
10	PER TOWN ENGINEER COMMENTS	06-24-2019	RW	MH
9	DC CAPACITY INCREASE	03-07-2019	RW	MH
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NEO Virtus Engineering, Inc. Since 2001
LITTLETON, MASSACHUSETTS

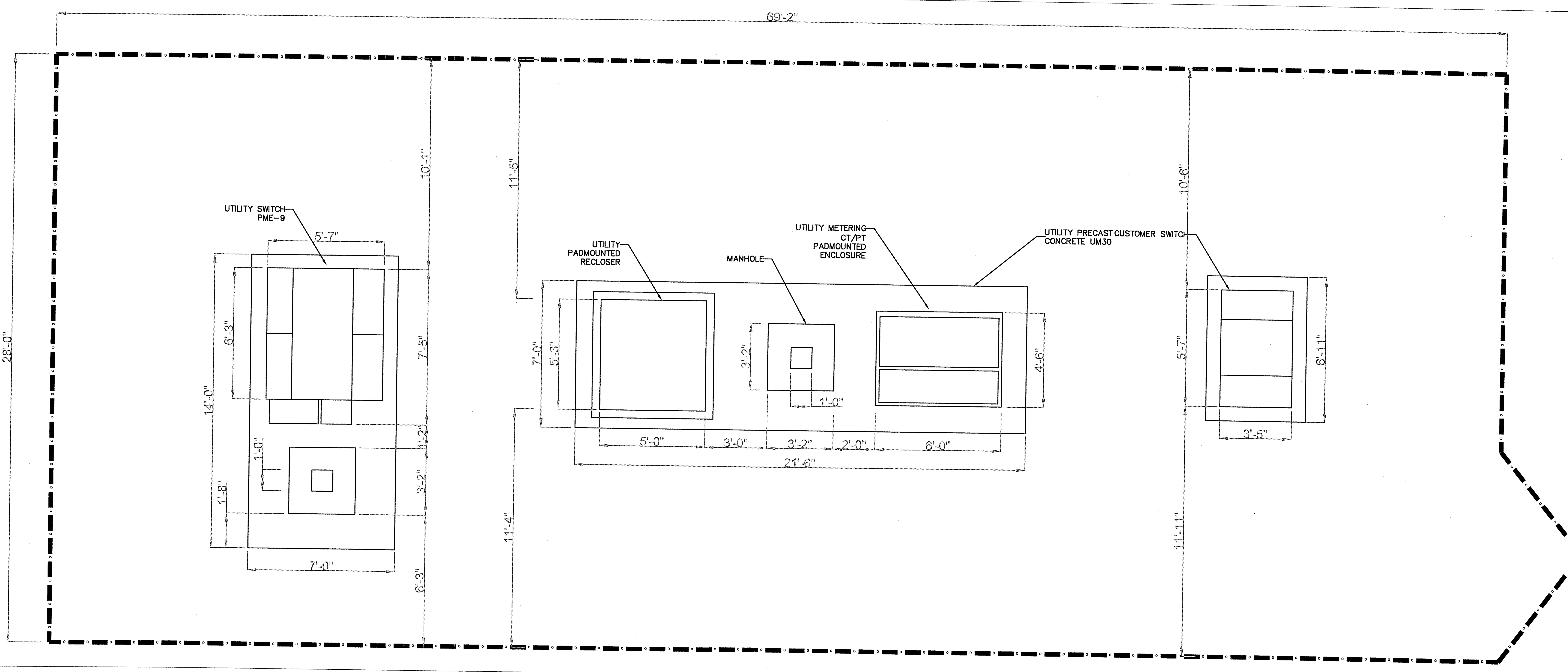
JAMES M. BING
JAMES BING — No. PE15253 — REGISTERED PROFESSIONAL ENGINEER ELECTRICAL
6/11/2019

COOK FARM SOLAR
4366 MAIN ROAD
TIVERTON, RI 02878

DWG NAME: INVERTER MOUNTING

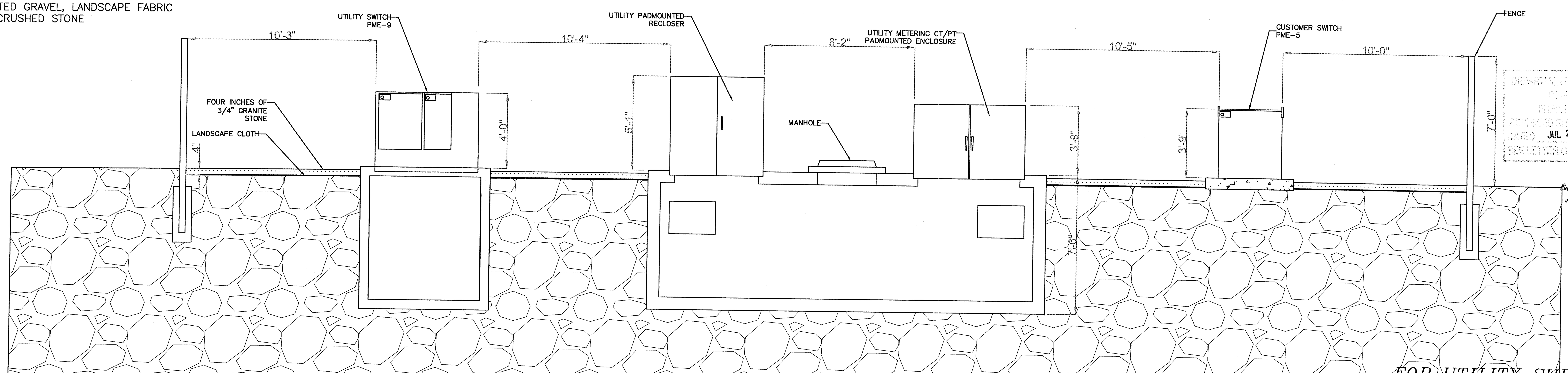
SIZE: D | SCALE: AS-NOTED | DATE: 10-17-2018

DWG NO.: E-1.2
NOT FOR CONSTRUCTION



Environmental Management
JUN 27 2019
Office of Water Resources

NOTE: TOPSOIL WITHIN AREA INSIDE OF FENCE TO BE REMOVED AND REPLACED WITH COMPACTED GRAVEL, LANDSCAPE FABRIC AND 4" CRUSHED STONE



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
REVISED SITE PLAN APPLICATION NO. 19-0091
DATED JUL 23 2019
SEE LETTER OF SAME DATE.

FOR UTILITY SUBMISSION
NOT FOR CONSTRUCTION

REVISIONS

REV	DESCRIPTION	DATE	DESIGN	REVIEWED
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LITTLETON, MASSACHUSETTS

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JAMES BING No. PE15253 REGISTERED PROFESSIONAL ENGINEER ELECTRICAL

COOK FARM SOLAR
4366 MAIN ROAD
TIVERTON, RI 02878

DWG NAME
UTILITY PAD LAYOUT

SIZE D | SCALE: AS-NOTED | DATE 10-17-2018

DWG NO.
E-1.3
NOT FOR CONSTRUCTION