2,226.42 KW SOLAR PV SYSTEM FOR
BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY - HIGH SCHOOL
APN - 0044F-0031

PROJECT TEAM

DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE:

QAIS FEROZ
SOLARCITY, INC.
9000 VIRGINIA MANOR RD
SUITE 250
BELTSVILLE, CA 20705
TEL: (443) 451-3527
QFEROZ@SOLARCITY.COM

ELECTRICAL ENGINEER:

MARK DEGASPARRE
SOLARCITY, INC.
405 EAST CHATSWORTH AVE.
REISTERSTOWN, MD 21136
TEL: (410) 960-2267
MDEGASPARRE@SOLARCITY.COM

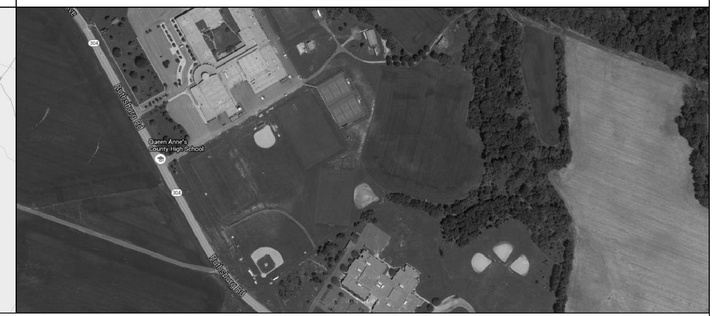
CIVIL/STRUCTURAL:

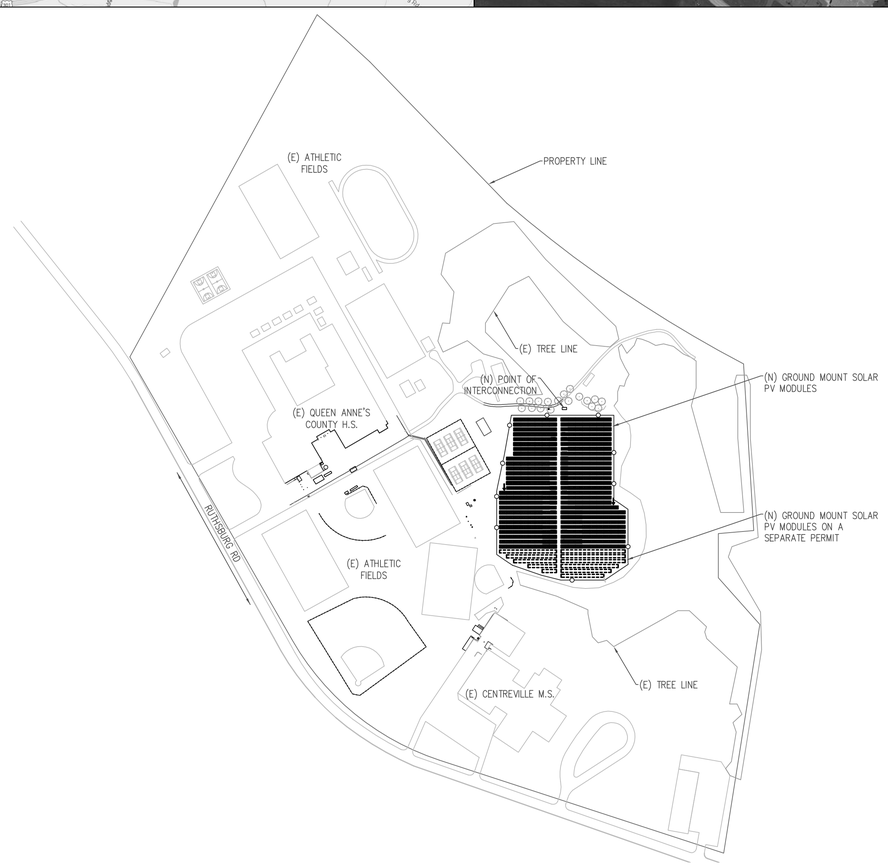
RBI SOLAR
MIKE SLACK, S.E.
5513 VINE STREET
CINCINNATI, OH 45217
TEL: (513) 242-2051

SolarCity
3055 Clearview Way, San Mateo, CA 94402
T:(650) 638-1028 | F:(650) 638-1029
(888)-SOL-CITY (765-2489) | www.solarcity.com

VICINITY MAP

AERIAL MAP





PROPERTY PLAN

1"=300'-0"

0 300' 600'

N W E S

180°

GENERAL NOTES

ALL WORK SHALL COMPLY WITH ALL STATE AND LOCAL CODES AND ANY OTHER REGULATING AUTHORITIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK.

DRAWINGS HAVE BEEN DETAILED IN COMPLIANCE WITH UL LISTING REQUIREMENTS, OSFM SOLAR PHOTOVOLTAIC INSTALLATION REQUIREMENTS, AND BUILDING CODES FOR THE MATERIALS SPECIFIED.

PRIOR TO COMMENCEMENT OF ANY WORK, THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND NOTIFY THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FROM SOLARCITY OF ANY DISCREPANCIES. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS SHALL BE CORRECTED AT THE SUBCONTRACTORS SOLE EXPENSE.

SUBCONTRACTOR INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO SOLARCITY FOR APPROVAL BEFORE MAKING ANY CHANGES. DEVIATION FROM PLANS BEFORE WRITTEN APPROVAL FROM SOLARCITY PLACES LIABILITY ON THE SUBCONTRACTOR.

ALL EQUIPMENT SHALL BE MOUNTED AS SHOWN. WHERE DETAILS ARE NOT PROVIDED, CONTRACTOR SHALL USE STANDARD CONSTRUCTION PRACTICES.

ALL SURFACES SHALL BE PATCHED AND PAINTED AROUND NEW DEVICES AND EQUIPMENT TO MATCH EXISTING FINISHES.

ANY METAL SHAVINGS FROM SITE WORK SHALL BE CLEANED FROM ALL SURFACES WHERE OXIDIZED OR CONDUCTIVE METAL SHAVINGS MY CAUSE RUST, ELECTRICAL SHORT CIRCUITS, OR OTHER DAMAGE.

BEAMS OR PURLINS SHALL NOT BE DRILLED UNLESS AUTHORIZED BY SOLARCITY OR SHOWN IN THE DRAWINGS.

APPROVALS FROM BUILDING INSPECTORS SHALL NOT CONSTITUTE AUTHORITY TO DEVIATE FROM THE DRAWINGS.

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
ADA	AMERICANS WITH DISABILITIES ACT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BLDG	BUILDING
CLR	CLEAR
CONC	CONCRETE
DC	DIRECT CURRENT
DIA	DIAMETER
DIST	DISTANCE
EQ	EQUAL
EGC	EQUIPMENT GROUNDING CONDUCTOR
(E)	EXISTING
EA.	EACH
EMT	ELECTRICAL METALLIC TUBING
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
HDG	HOT DIPPED GALVANIZED
I	CURRENT
Imp	CURRENT AT MAX POWER
INVS	INVERTERS
Isc	SHORT CIRCUIT CURRENT
kVA	KILOVOLT AMPERE
kW	KILOWATT
kWh	KILOWATT-HOUR
LBW	LOAD BEARING WALL
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OCP	OVERCURRENT PROTECTION
PL	PROPERTY LINES
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
SCH	SCHEDULE
SQ. IN.	SQUARE INCHES
SS	STAINLESS STEEL
SSD	SEE STRUCTURAL DRAWINGS
STC	STANDARD TESTING CONDITIONS
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
VIF	VERIFY IN FIELD
V	VOLT
Vmp	VOLTAGE AT MAX POWER
Voc	VOLTAGE AT OPEN CIRCUIT
W	WATT
3R	NEMA 3R, RAINTIGHT

SYSTEM SUMMARY

MODULE:	(7182) TRINA TSM310PD14.18
RACK TYPE:	RBI
ARRAY TILT:	20°
AZIMUTH:	180°

DESIGN CRITERIA

WIND SPEED:	90MPH
EXPOSURE:	C
SNOW LOAD:	30PSF

CODE SUMMARY

BUILDING CODE
ALL WORK SHALL COMPLY WITH THE 2012 INTERNATIONAL BUILDING CODE.

ELECTRICAL CODE
ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2014 NATIONAL ELECTRIC CODE.

INDEX

PV1 COVER SHEET
PV2 SITE PLAN
PV3 ARRAY PLAN
PV4 ACCESS PLAN
PV5 STRUCTURAL DETAILS & INVERTER PADS
PV6 STRUCTURAL DETAILS & INVERTER PADS
PV7 STRUCTURAL DETAILS & INVERTER PADS
PV8 PV EQUIPMENT PLAN & ELEVATION
PV9 EQUIPMENT DETAILS
PV10 ELECTRICAL SYMBOLS & NOTES
PV11 LINE DIAGRAM
PV12 MONITORING LINE DIAGRAM
PV13 WARNING LABELS

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. 21805, Expiration Date: 12/11/2017

DESCRIPTION: BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY - HIGH SCHOOL
2215.26KW GROUND MOUNT PV SYSTEM

DESIGN: Board of Education of Queen Anne's County - High School
125 Ruthsburg Rd.
CENTREVILLE, MD
410-758-2403

5/3/16

STATE OF MARYLAND
MARK F. DEGASPARRE
No. 21805
REGISTERED
ELECTRICAL ENGINEER

REVISIONS

REV	BY	DATE	COMMENTS
A	GF	4/28/2016	AHJ AND UTILITY COMMENTS

JOB DETAILS

AHJ: Centreville Town
MODULES: (7182) TRINA SOLAR # TSM-310PD14.18
MOUNTING SYSTEM: RBI RACKING
INVERTER: (67) FRONIUS # Symo 24.0-3 480
DESIGN: QFEROZ
CHECKED BY: EZ
MARKET: GOVERNMENT
PROJECT MANAGER: MATT QITT
DATE: 3/4/2016
PAYMENT TYPE: PPA
SHEET NAME: COVER SHEET
JOB NUMBER: JB-216787-00
SHEET: PV 1
REV: A

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TR\CIAN\PNicholous Meyers

418.5 KW SOLAR PV SYSTEM FOR
BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY - CENTREVILLE M.S.
APN - 0044F-0031

PROJECT TEAM

DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE:

QAIS FEROZ
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SUITE 250
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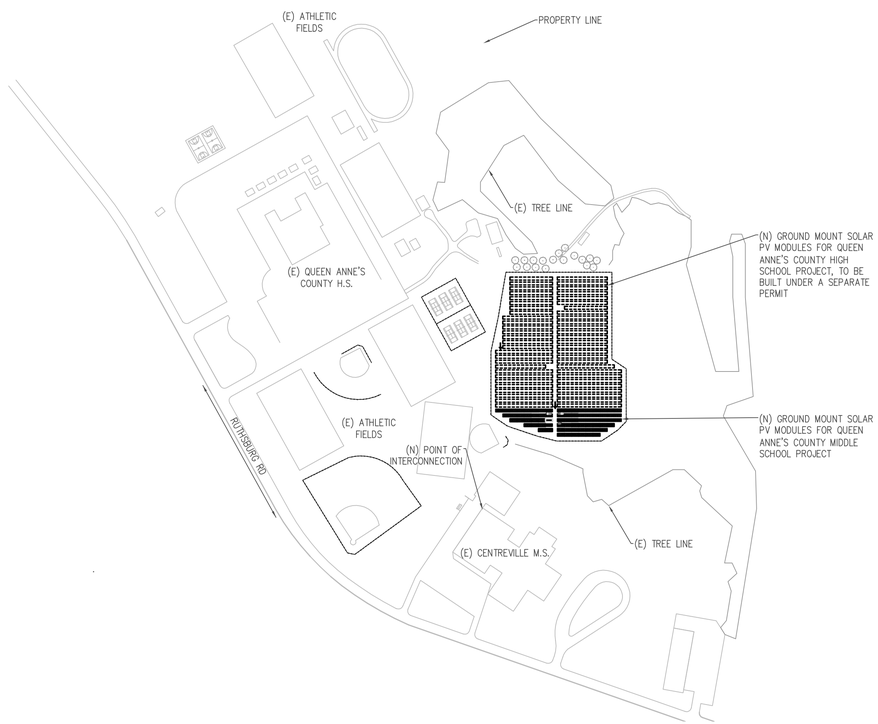
VICINITY MAP

AERIAL MAP



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N W E S 180°

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VIF	VERIFY IN FIELD
V	VOLT
Vmp	VOLTAGE AT MAX POWER
Voc	VOLTAGE AT OPEN CIRCUIT
W	WATT
3R	NEMA 3R, RAINTIGHT

SYSTEM SUMMARY

MODULE TYPE: (1350) TRINA TSM310PD14.18

INVERTER TYPE:(13) FRONIUS SYMO 24.0-3

ARRAY TILT: 15°

AZIMUTH: 180°

DESIGN CRITERIA

WIND SPEED:	90MPH
EXPOSURE:	C
SNOW LOAD:	30PSF

CODE SUMMARY

BUILDING CODE
ALL WORK SHALL COMPLY WITH THE 2015 INTERNATIONAL BUILDING CODE.

ELECTRICAL CODE
ALL ELECTRICAL WORK SHALL COMPLY WITH THE 2014 NATIONAL ELECTRIC CODE.

INDEX

PV1 COVER SHEET
PV2 SITE PLAN
PV3 ARRAY PLAN
PV4 ACCESS PLAN
PV5 PV EQUIPMENT PLAN & ELEVATION
PV6 PV EQUIPMENT PLAN & ELEVATION
PV7 EQUIPMENT DETAILS
PV8 ELECTRICAL SYMBOLS & NOTES
PV9 LINE DIAGRAM
PV10 MONITORING LINE DIAGRAM
PV11 WARNING LABELS

BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY – CENTREVILLE MIDDLE
418.5KW GROUND MOUNT PV SYSTEM
Board of Education of Queen Anne's County – Centreville Middle
231 Ruthsburg Rd.
CENTREVILLE, MD
410-758-2403

REVISIONS

REV	BY	DATE	COMMENTS
A	GF	4/6/2016	UTIL COMMENTS

JOB DETAILS

AHJ: Centreville Town
MODULES: (1350) TRINA SOLAR # TSM-310PD14.18
MOUNTING SYSTEM: RBI RACKING
INVERTER: (13) FRONIUS # Symo 24.0-3 480
DESIGN: QFEROZ
CHECKED BY: EZ
MARKET: GOVERNMENT
PROJECT MANAGER: MATT GITT
DATE: 3/4/2016
PAYMENT TYPE: PPA
SHEET NAME: COVER SHEET
JOB NUMBER: JB-216788-00
SHEET: PV 1
REV. 0

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TRICIAN\PNicholous Meyers

SITE PLAN

1"=60'-0"

0 60' 120'

LEGEND

- (N) GROUND-MOUNTED SOLAR PV MODULES (ELECTRICALLY CONNECTED)
- (N) GROUND-MOUNTED SOLAR PV MODULES ON A SEPARATE PERMIT (ELECTRICALLY CONNECTED)
- DOWN SLOPE
- (E) FENCE
- (N) FENCE

KEYED NOTES

1. (N) POINT OF AC INTERCONNECTION. WARNING LABEL DETAIL 1/WARNING LABELS SHEET
2. (E) UTILITY LOAD METER.
3. (N) PV SYSTEM UTILITY AC DISCONNECT. WARNING LABEL DETAIL 2/WARNING LABELS SHEET
4. (N) PV INVERTER AND DC DISCONNECT SWITCH. WARNING LABEL DETAIL 8 & 3/WARNING LABELS SHEET
5. (N) CONDUIT ON WALL. SEE DETAIL A/PV7.
6. NOT USED
7. (N) MONITORING EQUIPMENT
8. (N) AC COMBINER PANEL WARNING LABEL DETAILS 6-7/WARNING LABELS SHEET
9. (E) UTILITY TRANSFORMER
10. NOT USED
11. (N) CONDUIT IN TRENCH. SEE DETAIL D & E/PV7.

INVERTER PANEL BOARD NUMBERING SYSTEM

LOAD CENTER # — LC-1

INVERTER NUMBERING SYSTEM

INVERTER # — IN-01

SolarCity
3055 Clearview Way, San Mateo, CA 94402
T:(650) 638-1028 | F:(650) 638-1029
(888)-SOL-CITY (765-2489) | www.solarcity.com

DESCRIPTION: BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY – CENTREVILLE MIDDLE
418.5KW GROUND MOUNT PV SYSTEM

OWNER: Board of Education of Queen Anne's County – Centreville Middle
231 Ruthsburg Rd.
CENTREVILLE, MD
410-758-2403

REVISIONS

REV	BY	DATE	COMMENTS
A	GF	4/5/2016	UTIL COMMENTS

JOB DETAILS

AHJ: Centreville Town
MODULES: (1350) TRINA SOLAR # TSM-310PD14.18
MOUNTING SYSTEM: RBI RACKING
INVERTER: (13) FRONIUS # Symo 24.0-3 480
DESIGN: QFEROZ
CHECKED BY: EZ
MARKET: GOVERNMENT
PROJECT MANAGER: MATT GITT
DATE: 3/4/2016
PAYMENT TYPE: PPA
SHEET NAME: SITE PLAN
JOB NUMBER: JB-216788-00
SHEET: PV 2
REV: 0

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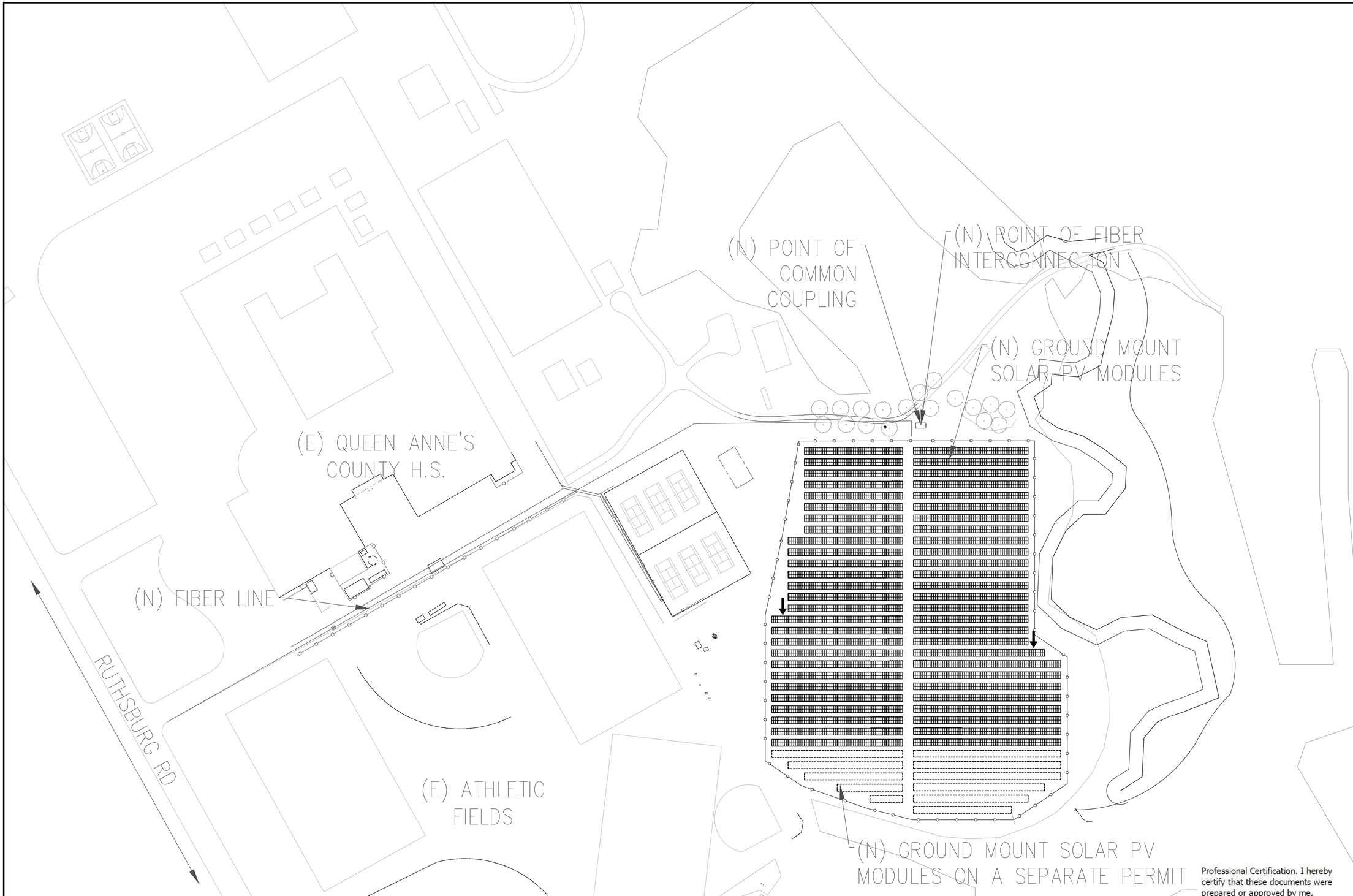

UTILITY SITE PLAN

1"=80'-0"

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. 21805, Expiration Date: 12/11/2017

SolarCity

3055 Clearview Way, San Mateo, CA 94402
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DESCRIPTION: BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY - HIGH SCHOOL
2215.26KW GROUND MOUNT PV SYSTEM

CUSTOMER: Board of Education of Queen Anne's County - High School
125 Ruthsburg Rd.
CENTREVILLE, MD
410-758-2403

5/3/16

STATE OF MARYLAND
MARK F. DEGASPARRE
NO. 21805
REGISTERED
ELECTRICAL ENGINEER

REVISIONS

REV	BY	DATE	COMMENTS
A	QF	4/29/2016	AHJ AND UTILITY COMMENTS

JOB DETAILS

AHJ: Centreville Town

MODULES: (7182) TRINA SOLAR # TSM-310PD14.18

MOUNTING SYSTEM: RBI RACKING

INVERTER: (67) FRONIUS # Symo 24.0-3 480

DESIGN: QFEROZ

CHECKED BY: EZ

MARKET: GOVERNMENT

PROJECT MANAGER: MATT GITT

DATE: 3/4/2016

PAYMENT TYPE: PPA

SHEET NAME: ACCESS PLAN

JOB NUMBER: JB-216787-00

SHEET: UTILITY_SP

REV: A

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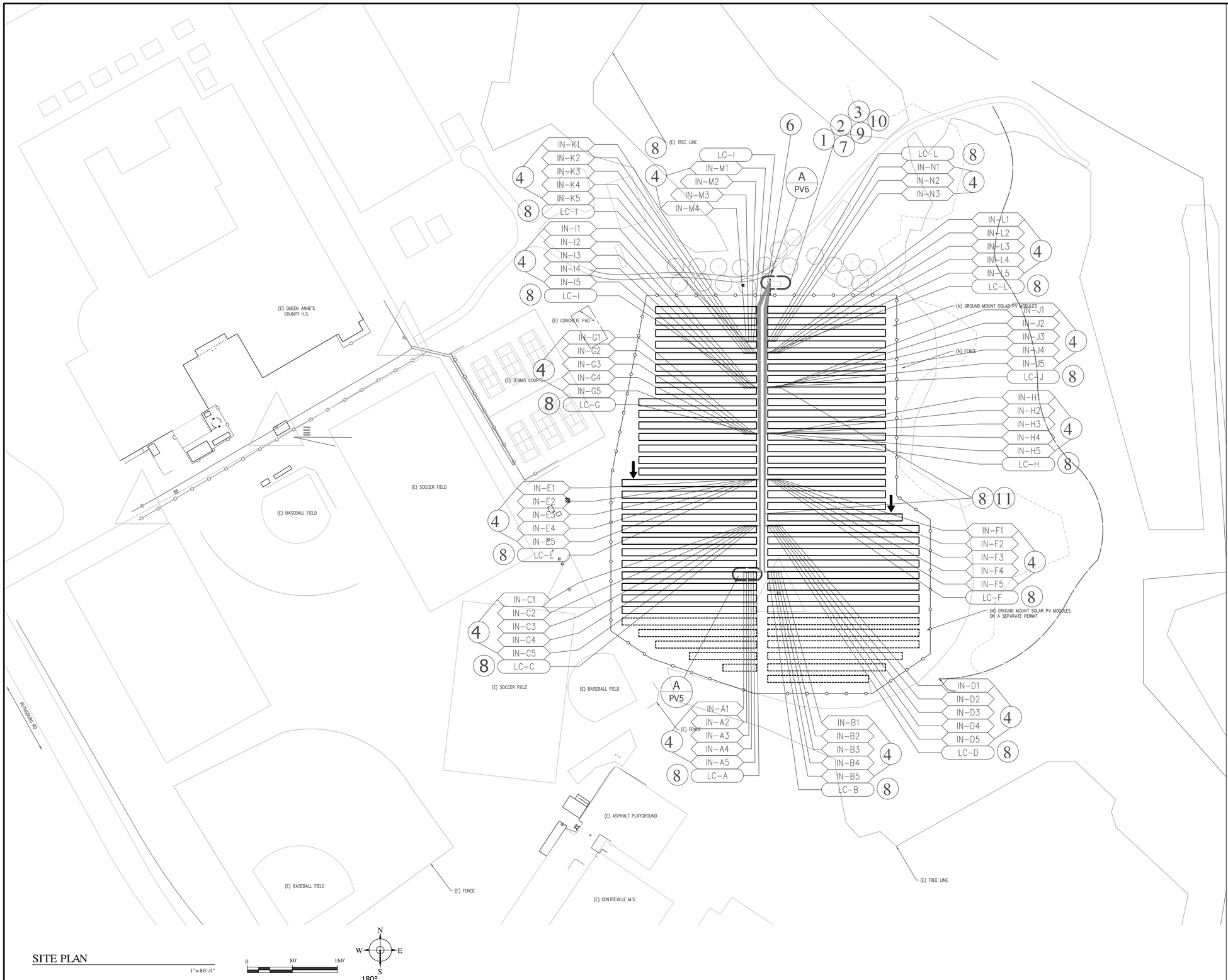

SITE PLAN

1"= 80'-0"

0 80' 160'

LEGEND

- (N) GROUND-MOUNTED SOLAR PV MODULES ARRAY OUTLINE
- (N) GROUND-MOUNTED SOLAR PV MODULES ON A SEPARATE PERMIT
- DOWN SLOPE
- (E) FENCE
- (N) FENCE

KEYED NOTES

1. (N) POINT OF AC INTERCONNECTION AT (E) TRANSFORMER. WARNING LABEL DETAIL 1/WARNING LABELS SHEET
2. (E) UTILITY LOAD METER.
3. (N) PV SYSTEM UTILITY AC DISCONNECT. WARNING LABEL DETAIL 2/WARNING LABELS SHEET
4. (N) PV INVERTER AND DC DISCONNECT SWITCH. WARNING LABEL DETAIL 8 & 3/WARNING LABELS SHEET
5. NOT USED
6. (N) CONDUIT IN TRENCH. SEE DETAIL F/PV9
7. (N) MONITORING EQUIPMENT
8. (N) AC COMBINER PANEL WARNING LABEL DETAILS 6-7/WARNING LABELS SHEET
9. (E) UTILITY TRANSFORMER
10. (N) STEP UP TRANSFORMER
11. (N) STEP DOWN TRANSFORMER

INVERTER PANEL BOARD NUMBERING SYSTEM

LOAD CENTER # — LC-1

INVERTER NUMBERING SYSTEM

INVERTER # — IN-01

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DESCRIPTION: BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY – HIGH SCHOOL
2215.26KW GROUND MOUNT PV SYSTEM

DESIGN: Board of Education of Queen Anne's County – High School
125 Ruthsburg Rd.
CENTREVILLE, MD
410-758-2403

REVISIONS

REV	BY	DATE	COMMENTS
A	QF	4/29/2016	AHJ AND UTILITY COMMENTS

JOB DETAILS

AHJ: Centreville Town
MODULES: (7182) TRINA SOLAR # TSM-315PD14.18
MOUNTING SYSTEM: RBI RACKING
INVERTER: (67) FRONIUS # Symo 24.0-3 480
DESIGN: QFEROZ
CHECKED BY: EZ
MARKET: GOVERNMENT
PROJECT MANAGER: MATT GITT
DATE: 3/4/2016
PAYMENT TYPE: PPA
SHEET NAME: SITE PLAN
JOB NUMBER: JB-216787-00
SHEET: PV 2
REV: A

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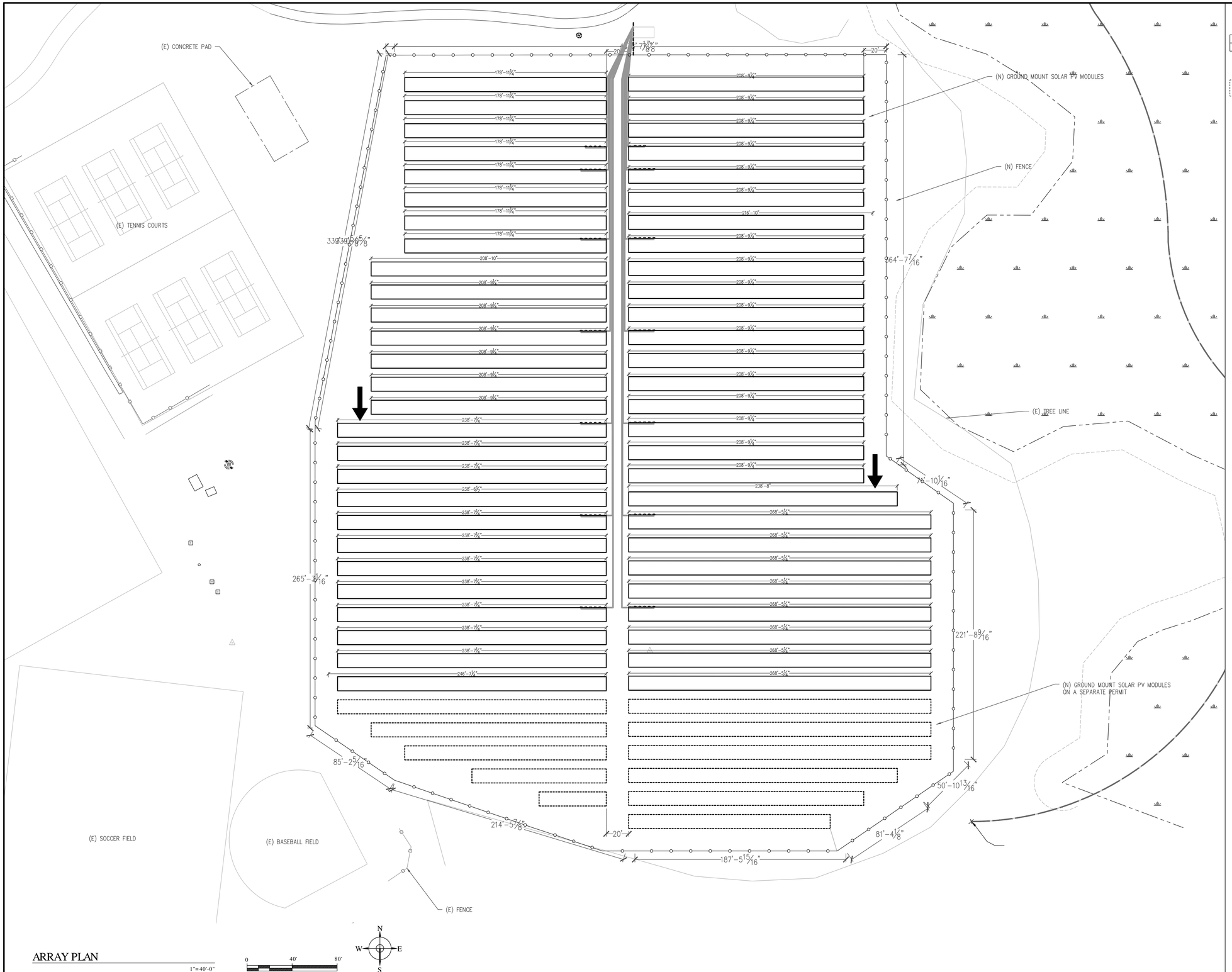

ARRAY PLAN

1"=40'-0"

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LEGEND

- (N) GROUND-MOUNTED SOLAR PV MODULES (ELECTRICALLY CONNECTED)
- (N) GROUND-MOUNTED SOLAR PV MODULES ON A SEPARATE PERMIT (ELECTRICALLY CONNECTED)
- DOWN SLOPE
- (E) FENCE
- (N) FENCE

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SCOPE:
BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY – HIGH SCHOOL
2215.26KW GROUND MOUNT PV SYSTEM

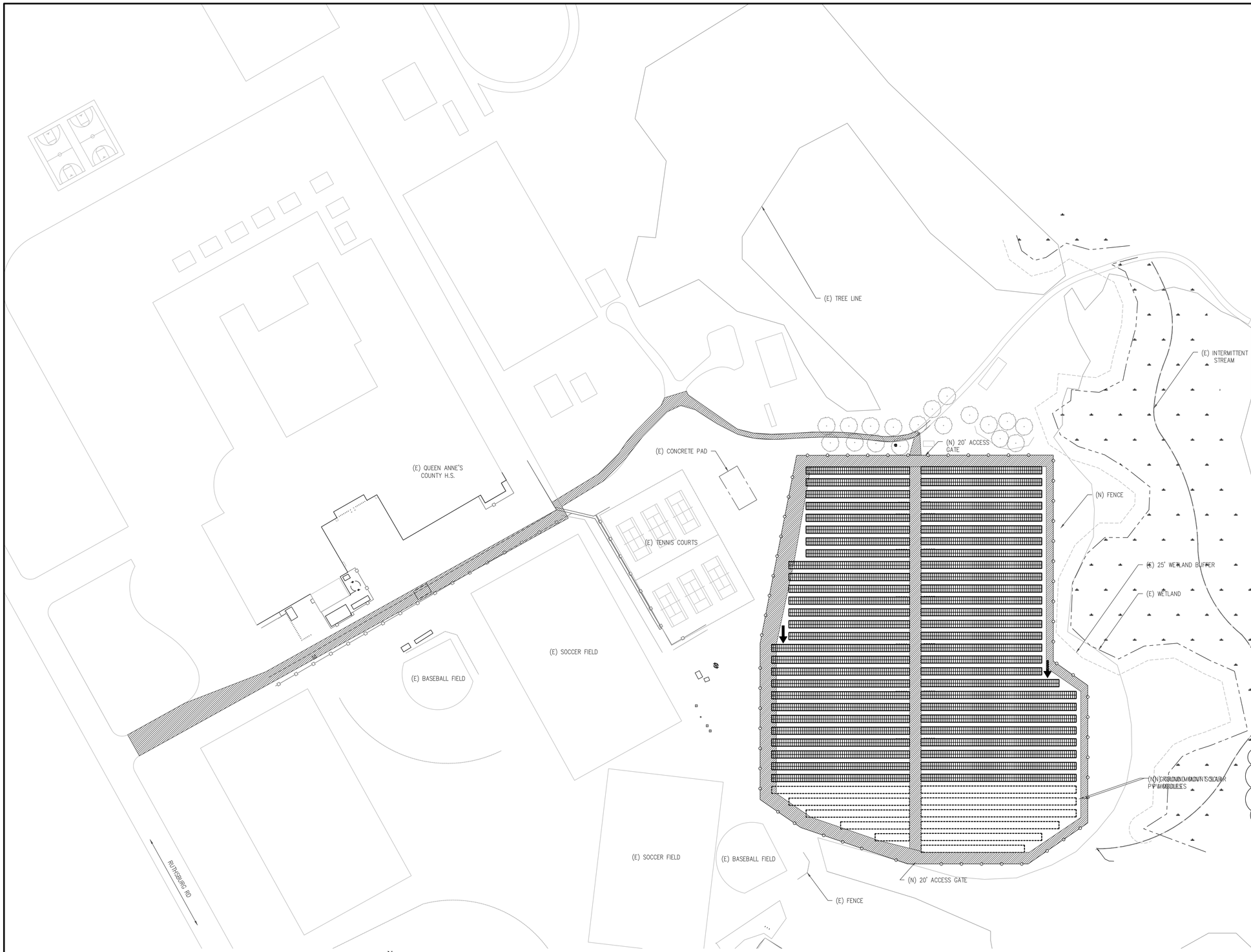
SITE:
Board of Education of Queen Anne's County – High School
125 Ruthsburg Rd.
CENTREVILLE, MD
410-758-2403

REVISIONS

REV	BY	DATE	COMMENTS
A	GF	4/28/2016	AHJ AND UTILITY COMMENTS

JOB DETAILS

AHJ: Centreville Town
MODULES: (7182) TRINA SOLAR # TSM-315PD14.18
MOUNTING SYSTEM: RBI RACKING
INVERTER: (67) FRONIUS # Symo 24.0-3 480
DESIGN: OFEROZ
CHECKED BY: EZ
MARKET: GOVERNMENT
PROJECT MANAGER: MATT GITT
DATE: 3/4/2016
PAYMENT TYPE: PPA
SHEET NAME: ARRAY PLAN
JOB NUMBER: JB-216787-00
SHEET: PV 3
REV: A



ACCESS PLAN

1"= 80'-0"

0 80' 160'

LEGEND

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- (N) GROUND-MOUNTED SOLAR PV MODULES ON A SEPARATE PERMIT (ELECTRICALLY CONNECTED)
- DOWN SLOPE
- (E) FENCE
- (N) FENCE
- FIRE ACCESS PATH

FIRE SIGNAGE NOTES

MARK EXISTING MAIN SERVICE DISCONNECT

MARKING CONTENT: "CAUTION ELECTRIC SYSTEM CONNECTED"

-RED BACKROUND
-WHITE LETTERING
-MINIMUM 3/8" LETTER HEIGHT
-ALL CAPITAL LETTERS
-ARIAL OR SIMILAR FONT, NON BOLD
-REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (DURAB LE ADHESIVE MATERIALS MAY MEET THE REQUREMENT)

MARK ALL DC ENCLOSURES AND JUNCTION BOXES AND ALL ABOVE GROUND RACEWAYS AND CABLEWAY ASSEMBLIES EVERY 10 FEET

MARKING CONTENT: "CAUTION SOLAR CIRCUIT"

-RED BACKROUND
-WHITE LETTERING
-MINIMUM 3/8" LETTER HEIGHT
-ALL CAPITAL LETTERS
-ARIAL OR SIMILAR FONT, NON BOLD
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GROUND MOUNT ACCESS NOTES

A. MIN 20' SETBACK FROM FENCING.
B. MIN 20' ACCESS GATES ON NORTH AND SOUTH SIDE OF THE ARRAY FENCING.
C. ACCESS ROAD OF 20' UNOBSTRUCTED WIDTH AND OF 13'6" UNOBSTRUCTED VERTICAL CLEARANCE ALL WEATHER ACCESSIBLE
D. 8' FENCING AROUND ARRAY AND ELECTRICAL EQUIPMENT
E. LOW GROWTH GRASS TO BE REGULARLY MAINTAINED UNDERNEATH AND AROUND THE ARRAY

A

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3055 Clearview Way, San Mateo, CA 94402
T:(650) 638-1028 | F:(650) 638-1029
(888)-SOL-CITY (765-2489) | www.solarcity.com

DESCRIPTION: BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY – HIGH SCHOOL
2215.26KW GROUND MOUNT PV SYSTEM
OWNER: Board of Education of Queen Anne's County – High School
125 Ruthsburg Rd.
CENTREVILLE, MD
410-758-2403

REVISIONS

REV	BY	DATE	COMMENTS
A	GF	4/29/2016	AHJ AND UTILITY COMMENTS

JOB DETAILS

AHJ: Centreville Town
MODULES: (7182) TRINA SOLAR # TSM-315PD14.18
MOUNTING SYSTEM: RBI RACKING
INVERTER: (67) FRONIUS # Symo 24.0-3 480
DESIGN: OFEROZ
CHECKED BY: EZ
MARKET: GOVERNMENT
PROJECT MANAGER: MATT GITT
DATE: 3/4/2016
PAYMENT TYPE: PPA
SHEET NAME: ACCESS PLAN
JOB NUMBER: JB-216787-00
SHEET: PV 4
REV: A

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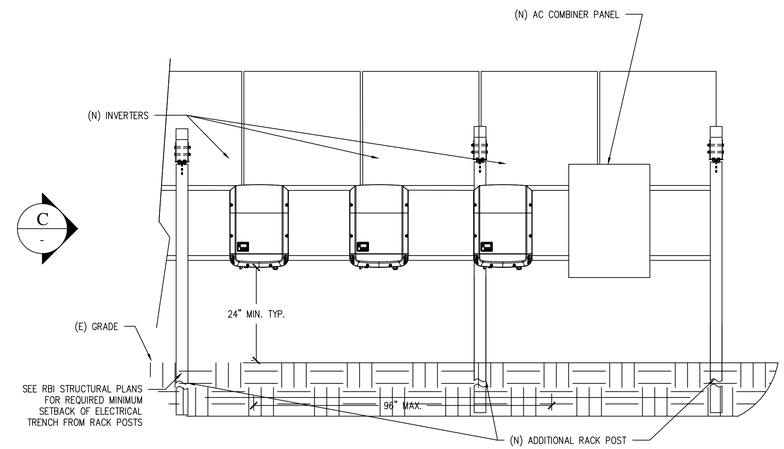
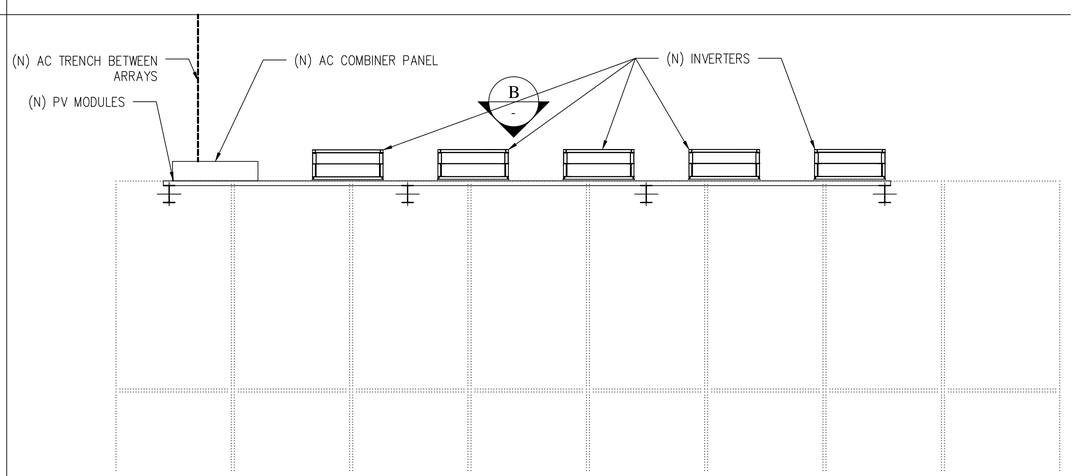


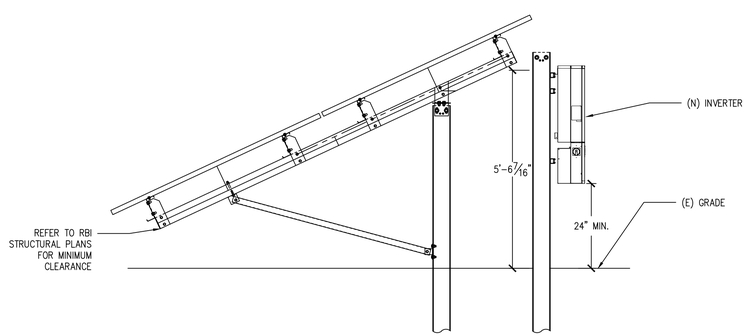
B RBI EQUIPMENT RACK (REAR ELEVATION)

1/2"= 1'-0"



A RBI EQUIPMENT RACK (PLAN VIEW)

1/2"= 1'-0"



C RBI EQUIPMENT RACK (SIDE ELEVATION)

1/2"= 1'-0"

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DESCRIPTION:
BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY - HIGH SCHOOL
2215.26KW GROUND MOUNT PV SYSTEM

OCCUPANCY:
Board of Education of Queen Anne's County - High School
125 Ruthsburg Rd.
CENTREVILLE, MD
410-758-2403

REVISIONS

REV	BY	DATE	COMMENTS
A	GF	4/29/2016	AHJ AND UTILITY COMMENTS

JOB DETAILS

AHJ: Centreville Town

MODULES: (7182) TRINA SOLAR # TSM-315PD14.18

MOUNTING SYSTEM: RBI RACKING

INVERTER: (67) FRONIUS # Symo 24.0-3 480

DESIGN: QFEROZ

CHECKED BY: EZ

MARKET: GOVERNMENT

PROJECT MANAGER: MATT GITT

DATE: 3/4/2016

PAYMENT TYPE: PPA

SHEET NAME: STRUCTURAL DETAILS & INVERTER PADS

JOB NUMBER: JB-216787-00

SHEET: PV 5

REV: A

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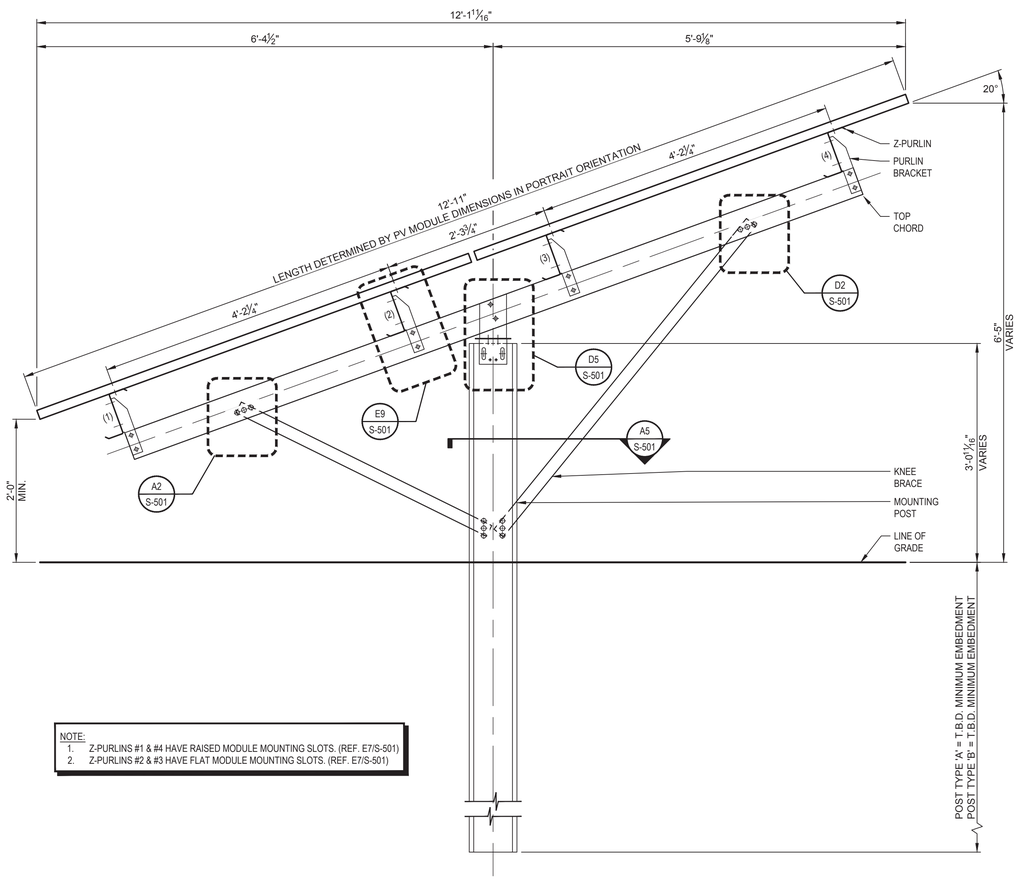
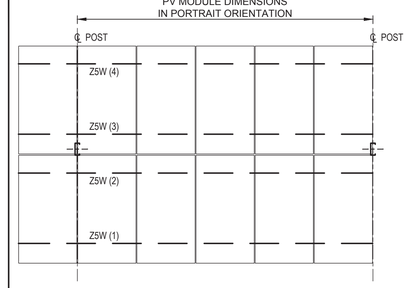
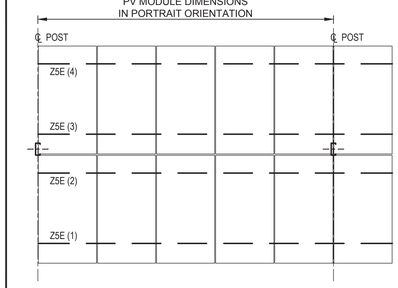


NOTE:
1. Z-PURLINS #1 & #4 HAVE RAISED MODULE MOUNTING SLOTS. (REF. E7/S-501)
2. Z-PURLINS #2 & #3 HAVE FLAT MODULE MOUNTING SLOTS. (REF. E7/S-501)

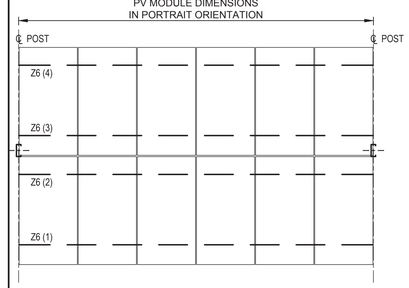
A1 SCALE: 1" = 1'-0"
RACK SECTION



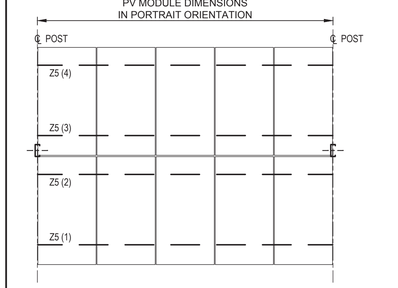
G8 SCALE: 1/4" = 1'-0"
5WP2 BAY PLAN VIEW



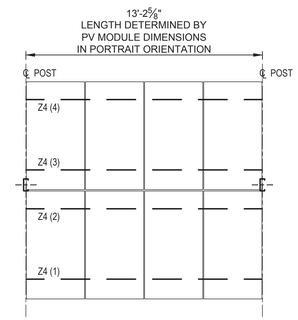
G10 SCALE: 1/4" = 1'-0"
5EP2 BAY PLAN VIEW



E8 SCALE: 1/4" = 1'-0"
6P2 BAY PLAN VIEW



E10 SCALE: 1/4" = 1'-0"
5P2 BAY PLAN VIEW



C8 SCALE: 1/4" = 1'-0"
4P2 BAY PLAN VIEW

RBI SOLAR
Total Solar Service: Design * Fabrication
Installation * Parts * Repair Service
5513 VINE STREET
CINCINNATI, OH 45217
513.242.2051
FAX: 513.242.0816

PROFESSIONAL SEAL

ENGINEER'S SEAL APPLIES TO DESIGN OF STRUCTURAL COMPONENTS ONLY

COMMONWEALTH OF MASSACHUSETTS
MOHAMED A. ALY
STRUCTURAL
No. 50028
REGISTERED PROFESSIONAL ENGINEER

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. 26984, EXPIRATION DATE: 12/21/2017.

GROUND MOUNT FOR SolarCity®

RELEASE RECORD

MARK	DATE	DESCRIPTION
1	03-04-16	PERMIT SET
0	03-01-16	PRELIMINARY REVIEW

PROJECT INFORMATION

TITLE & ADDRESS:
QUEEN ANNE'S COUNTY HS
125 RUTHSBURG RD.
CENTREVILLE, MD 21617

RBI SOLAR PROJECT No.: 163093

DRAWN BY: NAD
REVIEWED BY: BDS

SHEET TITLE: RACK SECTION & BAY PLAN VIEWS

SHEET No.: **S-301**

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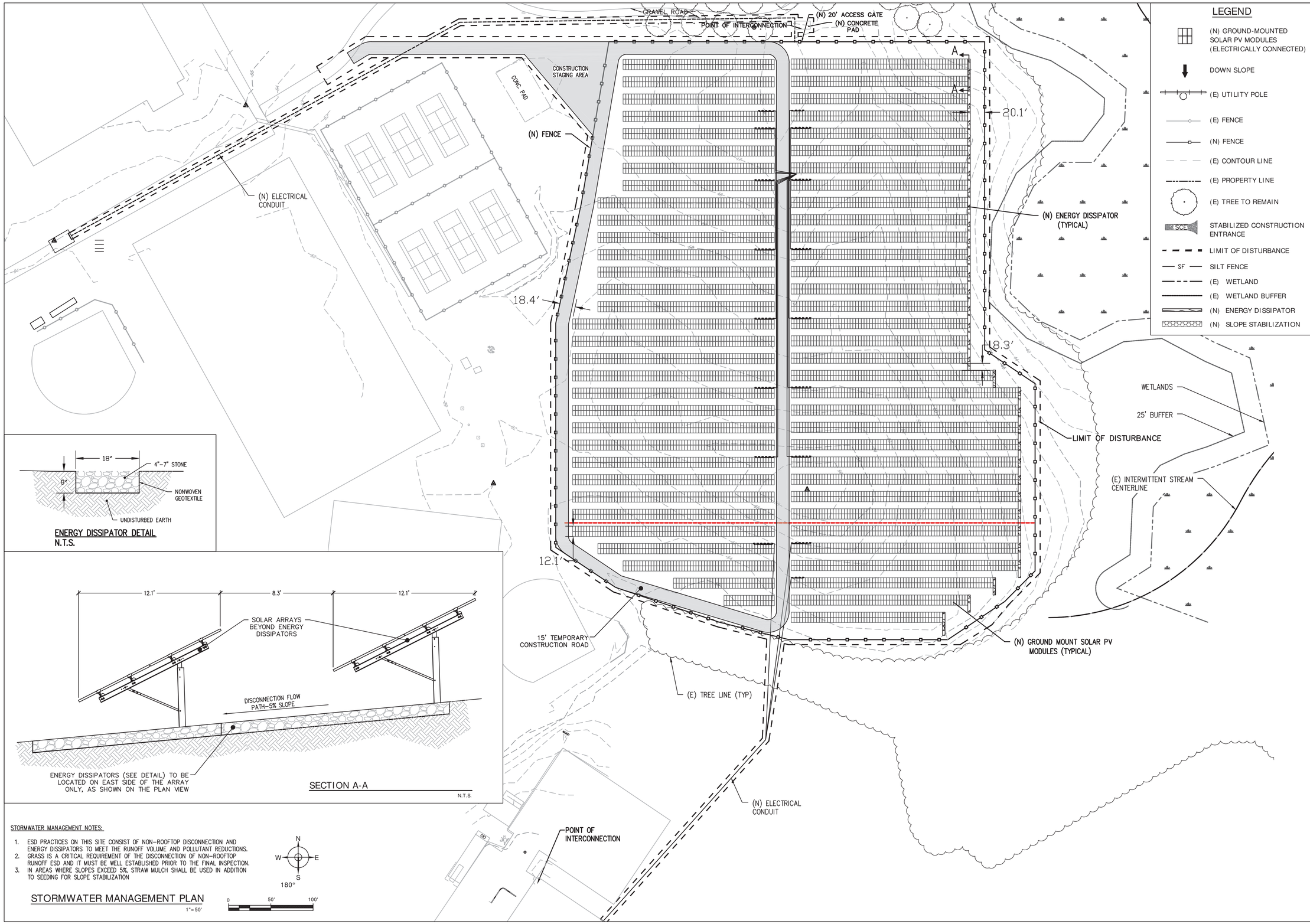
USER: NDUNCANSON PLOTTED: 3/4/2016 - 12:20 PM S:\RBI Solar\Design\2016 Jobs\163093 - SolarCity-Queen Anne HS-Centerville MD\Drawings\163093-Queen Anne HS_R0-rad.dwg LAYOUT: S-301



LEGEND

- (N) GROUND-MOUNTED SOLAR PV MODULES (ELECTRICALLY CONNECTED)
- DOWN SLOPE
- (E) UTILITY POLE
- (E) FENCE
- (N) FENCE
- (E) CONTOUR LINE
- (E) PROPERTY LINE
- (E) TREE TO REMAIN
- SCE — STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF DISTURBANCE
- SF — SILT FENCE
- (E) WETLAND
- (E) WETLAND BUFFER
- (N) ENERGY DISSIPATOR
- (N) SLOPE STABILIZATION

ENERGY DISSIPATOR DETAIL
N.T.S.

SECTION A-A
N.T.S.

STORMWATER MANAGEMENT NOTES:

1. ESD PRACTICES ON THIS SITE CONSIST OF NON-ROOFTOP DISCONNECTION AND ENERGY DISSIPATORS TO MEET THE RUNOFF VOLUME AND POLLUTANT REDUCTIONS.
2. GRASS IS A CRITICAL REQUIREMENT OF THE DISCONNECTION OF NON-ROOFTOP RUNOFF ESD AND IT MUST BE WELL ESTABLISHED PRIOR TO THE FINAL INSPECTION.
3. IN AREAS WHERE SLOPES EXCEED 5%, STRAW MULCH SHALL BE USED IN ADDITION TO SEEDING FOR SLOPE STABILIZATION

N W E S 180°

STORMWATER MANAGEMENT PLAN

1"=50'

0 50' 100'

SolarCity
3055 Clearview Way, San Mateo, CA 94402
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(888)-SOL-CITY (765-2489) | www.solarcity.com

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DESCRIPTION: BOARD OF EDUCATION OF QUEEN ANNE'S COUNTY – HIGHSCHOOL & CENTREVILLE MIDDLE SCHOOL
2226.72 KW & 418.5 KW GROUND MOUNT PV SYSTEM

DESIGN: Board of Education of Queen Anne's County
202 Chesterfield Ave.
Centreville, MD 21617
410-758-2403 x141

REBECCA L. KOZE, PE

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. 41132 , Expiration Date: 10/13/2017

SIGNATURE DATE 6/06/16

STATE OF MARYLAND REBECCA L. KOZE No. 41132 PROFESSIONAL ENGINEER

REVISIONS

REV	BY	DATE	COMMENTS
XXXX	XX	*/*/*	*

JOB DETAILS

AHJ: Centreville Town
MODULES: (7146) TRINA SOLAR # TSM-310PD14.18 *
MOUNTING SYSTEM: RBI RACKING
INVERTER: (67) FRONIUS # Symo 24.0-3 480
DESIGN: QFEROZ
CHECKED BY: KS
MARKET: GOVERNMENT
PROJECT MANAGER: MATT GITT
DATE: 06/06/16
PAYMENT TYPE: PPA
SHEET NAME: STORMWATER MANAGEMENT PLAN
JOB NUMBER: JB-216788-00
SHEET: C 4
REV: *

Fronius Symo
3.0-3-S / 3.7-3-S / 4.5-3-S
3.0-3-M / 3.7-3-M / 4.5-3-M
5.0-3-M / 6.0-3-M / 7.0-3-M
8.2-3-M
10.0-3-M / 12.5-3-M / 15.0-3-M
17.5-3-M / 20.0-3-M

Fronius Eco
25.0-3-S / 27.0-3-S

EN

Operating Instructions

Grid-connected inverter

IT

Istruzioni per l'uso

Inverter per impianti fotovoltaici collegati alla rete

PT-BR

Manual de instruções

Retificador alternado acoplado à rede

42,0410,2028 016-24082016

Fronius Symo	15.0-3-M	17.5-3-M	20.0-3-M
Input data			
MPP voltage range	320 - 800 V DC	370 - 800 V DC	420 - 800 V DC
Max. input voltage (at 1,000 W/m² / -10 °C in an open circuit)	1000 V DC		
Min. input voltage	200 V DC		
Max. input current (MPP1 / MPP2) (MPP1 + MPP2)	33.0 / 27.0 A 51.0 A		
Max. short circuit current of the solar modules ($I_{SC\ PV}$) (MPP1 / MPP2)	49.5 / 40.5 A		
Max. feedback current[4)]	49.5 / 40.5 A		
Output data			
Nominal output power (P_{nom})	15,000 W	17,500 W	20,000 W
Max. output power	15,000 W	17,500 W	20,000 W
Nominal grid voltage	3~ NPE 400 / 230 V or 3~ NPE 380 / 220		
Min. grid voltage	150 V / 260 V		
Max. grid voltage	280 V / 485 V		
Nominal output current at 220 / 230 V	22.7 / 21.7 A	26.5 / 25.4 A	30.3 / 29 A
Max. output current	32 A		
Nominal frequency	50 / 60 Hz [1)]		
Total harmonic distortion	< 1.5%	< 1.5%	< 1.25%
cos phi power factor	0 - 1 ind./cap.[2)]		
Max. output fault current per period	64 A / 2.34 ms		
General data			
Maximum efficiency	98%		
European efficiency U_{DCmin} / U_{DCnom} / U_{DCmax}	96.2 / 97.6 / 97.1%	96.4 / 97.7 / 97.2%	96.5 / 97.8 / 97.3%
Overnight self-consumption	0.7 W & 117 VA		
Cooling	Controlled forced-air ventilation		
Degree of protection	IP 66		
Dimensions h x w x d	725 x 510 x 225 mm		
Weight	43.4 kg / 43.2 kg		
Permissible ambient temperature	- 25 °C - +60 °C		
Permitted humidity	0 - 100%		
EMC device class	B		
Overvoltage category DC / AC	2 / 3		
Pollution level	2		
Noise emission	65 dB(A) (ref. 1pW)		
Protection devices			
DC insulation measurement	Integrated		
Response to DC overload	Operating point shift, power limitation		
DC disconnector	Integrated		
RCMU	Integrated		

Noise: Questions related to the noise produced by solar PV facilities are commonly raised. It is important to note that during daytime operation, the solar panels are silent. The primary source of sound from a commercial-scale solar PV facility comes from the power inverters. That being said, the power inverters themselves produce extremely low levels of noise. The inverters selected for the proposed Project will generate less than 65 dBA. This is roughly the same sound level of a conversation or a household appliance. A specification sheet for the proposed inverter is included.

Furthermore, the sound level generated by the inverters dissipates greatly given distance and intervening factors such as vegetation. The nearest residential property is well over 300 feet away from the array fence line. At this distance, no sound generated by the solar inverters will be discernible. Accordingly, no noise-related effects are anticipated.