AMENDMENT #1 TO SOLAR POWER PURCHASE AGREEMENT

This Amendment #1 is entered into this _____ of May, 2017 (the "Effective Date"), between Readington Solar PV LLC (hereinafter referred to as the "Developer") and the Readington Township Board of Education (hereinafter referred to as the "Buyer").

WHEREAS, the Buyer and Developer (hereinafter referred to individually as a "Party" and collectively as "Parties") entered into a Solar Power Purchase Agreement dated September 23, 2016 (hereinafter referred to as "the Original Agreement");

WHEREAS, as of the effective date Developer has obtained all non-ministerial Governmental Approvals required by Applicable Legal Requirements for the construction, installation and operation of the Facilities with the exception of (i) the interconnection agreement from the EDC which is pending final approval of the EDC and (ii) final approval from Hunterdon County Soil Conservation District which in anticipated in the next ten days;

WHEREAS, in accordance with Section 3(c) of the Agreement (i) Developer has furnished Buyer's Representative, for Buyer's approval, copies of the Plans which have been approved by Buyer and (ii) Developer has provided Buyer with an updated construction schedule, a copy of which is attached hereto as Attachment 1 (the "Updated Construction Schedule"); and

WHEREAS, in accordance with the Updated Construction Schedule, Developer has requested that the Agreement be amended to extend the Outside Commercial Operation Date to the date which is sixty (60) days following the anticipated Commercial Operation Date set forth in the Updated Construction Schedule;

WHEREAS, the Parties desire to amend the Agreement to reflect the final design as set forth in the approved Plans;

NOW, THEREFORE, the parties mutually agree as follows:

1. Capitalized terms used in this Amendment #1 and not defined herein have the meanings assigned to them in Original Agreement. The Recitals are incorporated into this Amendment #1.

2. Developer hereby notifies Buyer that the conditions set forth in Section 3(c) have been met or waived by Developer as of the Effective Date.

3. As of the Effective Date, Buyer hereby waives any right to terminate for failure to satisfy condition 3(c)(i) on or before the Governmental Approval Date.

4. Buyer hereby acknowledges approval of the Plans and the Parties agree execution of this Amendment shall serve as Notice to Proceed in accordance with Section 3(c).

5. In accordance with and as satisfaction of the obligations under Section 3(d), Developer shall pay to the Buyer an amount equal to $63,125 within three (3) business days of execution of this Amendment.

6. The Original Agreement is hereby amended as follows:

a) The defined term "***Outside Commercial Operation Date***" in Section 1 of the Agreement is hereby replaced with the following

"***Outside Commercial Operation Date***" means February 19, 2018, subject to the provisions of Section 3(e) hereof.

b) By striking Exhibit B and replacing it with Exhibit B attached hereto.
c) By striking Exhibit C and replacing it with Exhibit C attached hereto.

7. Failure to Achieve the Outside Commercial Operation Date. Developer acknowledges that should it fail to achieve the Outside Commercial Operation Date for reasons other than Force Majeure, delays by the EDC in approval and execution of the interconnection agreement or any other delays caused by the EDC or the Buyer, then, in addition to Buyer's right to terminate the Original Agreement, as amended, contained in Section 3(e) of the Original Agreement, Buyer shall also, at its sole option, have the alternative right to grant Developer an extension of time to achieve Commercial Operation in exchange for Developer's forfeiture of Developer's right to apply the Annual Rate Escalator to Year 2 of the Rate set forth in Exhibit C attached hereto. For the avoidance of all doubt, should Buyer exercise this option, the Annual Rate Escalator would first be applied to the Rate in Year 3 and the Rate schedule set forth in Exhibit C shall be adjusted accordingly. Developer shall not be entitled to terminate the Original Agreement, as amended by this Amendment #1 in the event it fails to achieve the Outside Commercial Operation Date.

8. Ordering of Modules. Developer represents that it placed an order for the solar panel modules on May 10, 2017, and that as of the date of this Amendment #1 it anticipates receipt of the modules on or before September 11, 2017.

9. Entire Agreement; Governing Law. This Amendment #1 shall be governed by the laws of the State of New Jersey.

10. Authority. Each Party represents and warrants to the other Party that it has the power, right and authority to enter into this Amendment #1 and to consummate the transactions contemplated hereby.

11. The Parties may execute this Amendment #1 in counterparts, which shall, in the aggregate, when signed by both Parties constitute one and the same instrument; and, thereafter, each counterpart shall be deemed an original instrument as against any Party who has signed it. Delivery of an executed counterpart of this Amendment #1 by facsimile transmission or by other electronic transmission shall be effective as delivery of a manually executed counterpart of this Amendment #1.

12. Except as modified and amended in this Amendment #1, the Original Agreement remains in full force and effect, and the Parties hereby ratify and re-affirm the Original Agreement in all respects.

[signatures follow]

IN WITNESS WHEREOF, the Parties have executed this Amendment #1 as of the date first above written.

Buyer:	Developer
READINGTON TOWSHIP BOARD OF EDUCATION	READINGTON SOLAR PV LLC
By: _____	By: Ameresco, Inc., its sole member
	By: _____ James J. Walker, Vice President

EXHIBIT B

PRELIMINARY DESCRIPTION OF FACILITIES

Name: Facility 1:Holland Brook School

Address: 52 Readington Road, Readington, NJ 08889

The final Facilities Description shall be the final As-Built drawings to be provided after Commercial Operation Date. The information below is preliminary and subject to change.

General Facilities Description:

1.	Facilities Size DC:	686.7 kW_DC at STC capacity
2.	Facilities Size AC:	544 kW_AC

Solar PV Panels:

1.	Manufacturer:	Hyundai
2.	Model Number:	HiS – S350RI
3.	Module Wattage:	350W
4.	Panel Count:	1,962
5.	Type:	Monocrystalline 72-cell Modules
6.	Array tilt:	25 degrees
7.	Warranty Information:	Free from defects in materials and workmanship for 10 years, 97.5% minimum production on year 1, and 25 year linear power output with 80% minimum production at year 25.

Inverters:

1.	Manufacturer:	Yaskawa Solectria
2.	Model Number:	PVI-28TL-480, PVI-36TL-480, PVI-60TL-480
3.	Number and size to be installed:	(1) 28 kW inverter, (1) 36 kW inverters (8) 60 kW inverters
4.	String size and Quantity:	18 panels per string with 109 total strings.
5.	Warranty Information:	10 Year standard warranty

Mounting Facilities:

1.	Manufacturer:	Patriot

2. Model Number:	ATLAS-1-HIGH-SPEC-5
3. Type:	Ground Mounted -Pole Driven

Data Acquisition Facilities (DAS):

1. Manufacturer: Draker Energy
2. Model: Draker PV 250 Base Station or equivalent

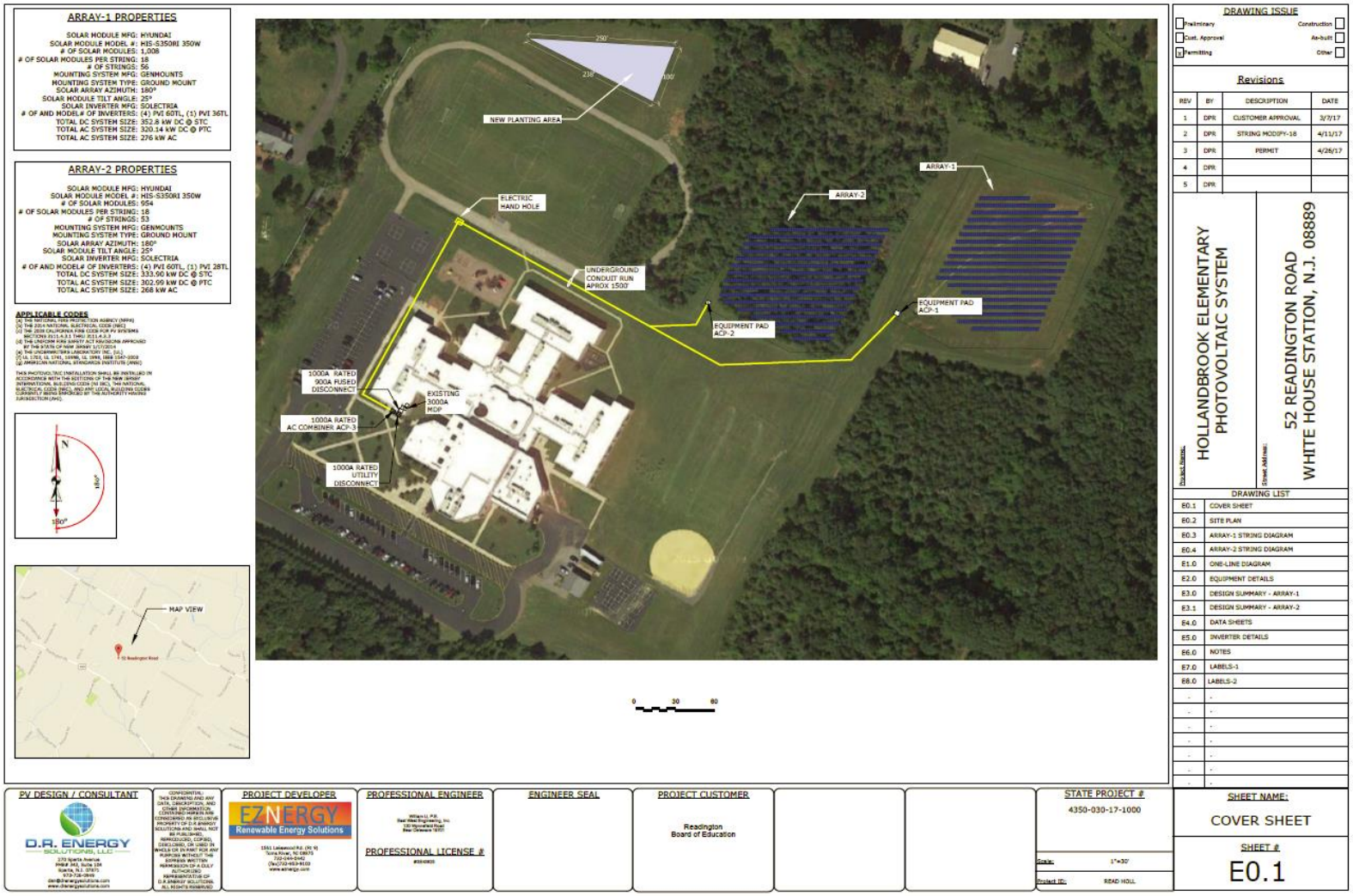
Landscaping:

A specific landscaping layout will be developed for the Holland Brook School that will allocate a portion of the $10,000 landscaping budget to tree replanting in the triangular area north of the track field and as designated in the orange boxes on the Conceptual Layout in Exhibit D. The plan will be a habitat-oriented planting plan developed in consultation with the Buyer. The replanted area will be enclosed by a wildlife resistant fence.

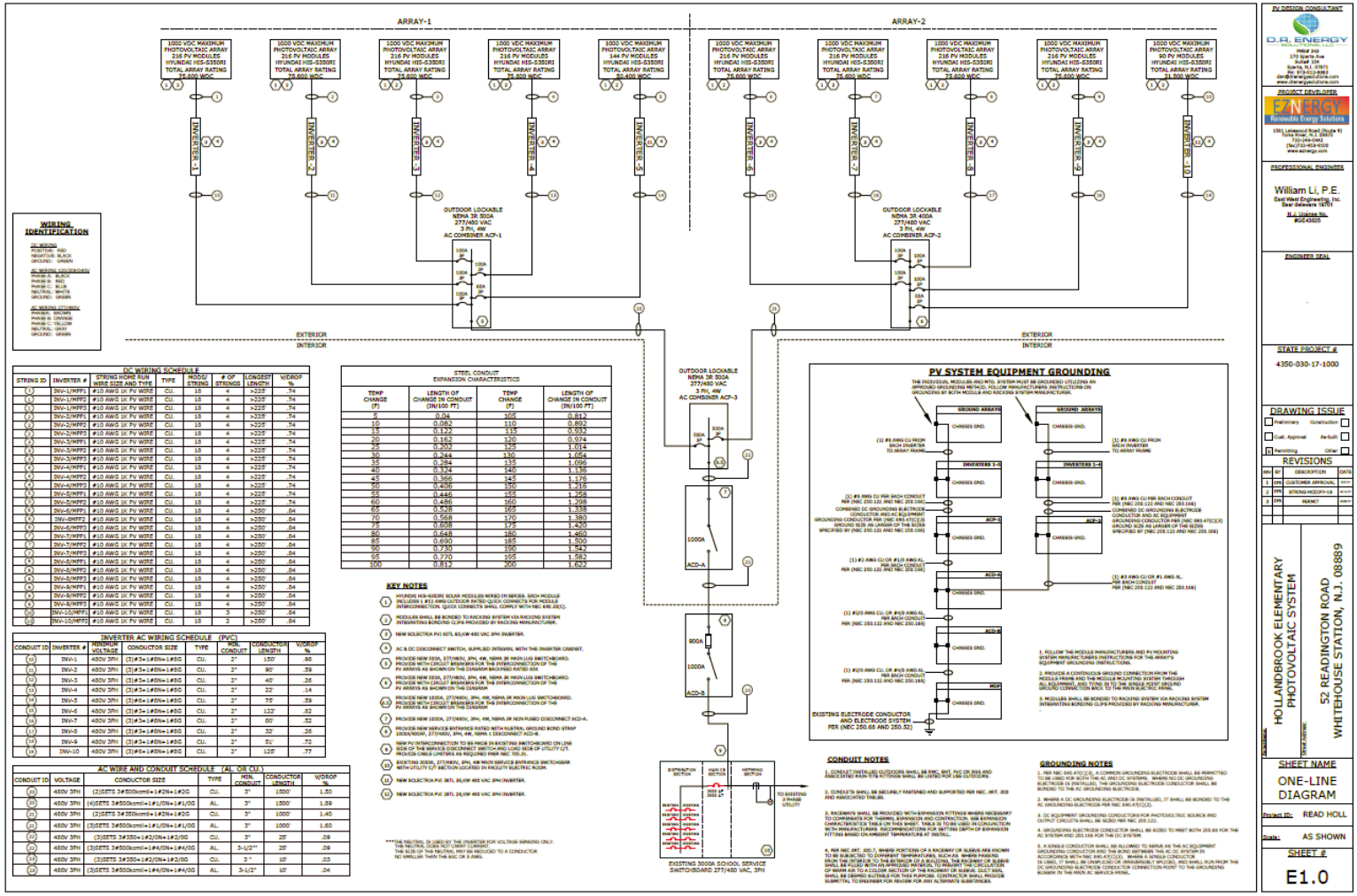
The $10,000 budget includes both Readington Middle School and Holland Brook School. If the Buyer requests landscaping in excess of the landscaping that can be supported by the Developer's $10,000 budget, the Developer shall be entitled to increase the Electricity Price for each $10,000 of additional costs in accordance with the following:

For each increase in landscaping costs of $10,000 in excess of the Developer's $10,000 landscaping budget	Electricity Price Change
For each $10,000 increment	$0.0005/kWh

Solar PV Facilities Layout:



Electrical Facilities Layout:



STRING ID	INVERTER #	STRING HOME RUN WIRE SIZE AND TYPE	TYPE	MODS/ STRING	# OF STRINGS	LONGEST LENGTH	V/DROP %
1	INV-1/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
2	INV-1/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
3	INV-1/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
4	INV-2/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
5	INV-2/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
6	INV-2/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
7	INV-3/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
8	INV-3/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
9	INV-3/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
10	INV-4/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
11	INV-4/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
12	INV-4/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
13	INV-5/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
14	INV-5/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
15	INV-5/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>225'	.74
16	INV-6/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
17	INV-6MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
18	INV-6/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
19	INV-7/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
20	INV-7/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
21	INV-7/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
22	INV-8/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
23	INV-8/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
24	INV-8/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
25	INV-9/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
26	INV-9/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
27	INV-9/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>250'	.84
28	INV-10/MPP1	#10 AWG 1K PV WIRE	CU.	18	3	>250'	.84
29	INV-10/MPP2	#10 AWG 1K PV WIRE	CU.	18	2	>250'	.84

TEMP CHANGE (F)	LENGTH OF CHANGE IN CONDUIT (IN/100 FT)	TEMP CHANGE (F)	LENGTH OF CHANGE IN CONDUIT (IN/100 FT)
5	0.04	105	0.812
10	0.082	110	0.892
15	0.122	115	0.932
20	0.162	120	0.974
25	0.202	125	1.014
30	0.244	130	1.054
35	0.284	135	1.096
40	0.324	140	1.136
45	0.366	145	1.176
50	0.406	150	1.216
55	0.446	155	1.258
60	0.486	160	1.298
65	0.528	165	1.338
70	0.568	170	1.380
75	0.608	175	1.420
80	0.648	180	1.460
85	0.690	185	1.500
90	0.730	190	1.542
95	0.770	195	1.582
100	0.812	200	1.622

CONDUIT ID	INVERTER #	MINIMUM VOLTAGE	CONDUCTOR SIZE	TYPE	MIN. CONDUIT	CONDUCTOR LENGTH	V/DROP %
10	INV-1	480V 3PH	(3)#3+1#8N+1#8G	CU.	2"	150'	.96
11	INV-2	480V 3PH	(3)#3+1#8N+1#8G	CU.	2"	90'	.59
12	INV-3	480V 3PH	(3)#3+1#8N+1#8G	CU.	2"	40'	.26
13	INV-4	480V 3PH	(3)#3+1#8N+1#8G	CU.	2"	22'	.14
14	INV-5	480V 3PH	(3)#6+1#8N+1#8G	CU.	2"	75'	.59
15	INV-6	480V 3PH	(3)#3+1#8N+1#8G	CU.	2"	122'	.82
16	INV-7	480V 3PH	(3)#3+1#8N+1#8G	CU.	2"	80'	.52
17	INV-8	480V 3PH	(3)#3+1#8N+1#8G	CU.	2"	32'	.26
18	INV-9	480V 3PH	(3)#3+1#8N+1#8G	CU.	2"	51'	.72
19	INV-10	480V 3PH	(3)#6+1#8N+1#8G	CU.	2"	120'	.77

CONDUIT ID	VOLTAGE	CONDUCTOR SIZE	TYPE	MIN. CONDUIT	CONDUCTOR LENGTH	V/DROP %
20	480V 3PH	(2)SETS 3#500kcmil+1#2N+1#2G	CU.	3"	1500'	1.50
21	480V 3PH	(4)SETS 3#500kcmil+1#1/0N+1#1/0G	AL.	3"	1500'	1.89
22	480V 3PH	(2)SETS 3#350kcmil+1#2N+1#2G	CU.	3"	1000'	1.40
23	480V 3PH	(3)SETS 3#500kcmil+1#1/0N+1#1/0G	AL.	3"	1000'	1.60
24	480V 3PH	(3)SETS 3#250+1#2/0N+1#2/0G	CU.	3"	25'	.09
25	480V 3PH	(3)SETS 3#500kcmil+1#4/0N+1#4/0G	AL.	3-1/2"*	25'	.09
26	480V 3PH	(3)SETS 3#250+1#2/0N+1#2/0G	CU.	3"	10'	.03
27	480V 3PH	(3)SETS 3#500kcmil+1#4/0N+1#4/0G	AL.	3-1/2"	10'	.04

PV DESIGN CONSULTANT
D.R. ENERGY
PROJECT DEVELOPER
ENERGY Renewable Energy Solutions
PROFESSIONAL ENGINEER
William Li, P.E.
East West Engineering, Inc.
Bear Delaware 19701
N.J. License No.
#GE43820
ENGINEER SEAL
STATE PROJECT #
4350-030-17-1000
DRAWING ISSUE
Preliminary
Construction
Cust. Approval
As-built
Permitting
Other
REVISIONS

DRW	BY	DESCRIPTION	DATE
1	DRS	CUSTOMER APPROVAL	9/1/17
2	DRS	STRING MODIFY-18	9/1/17
3	DRS	PERMIT	9/6/17

HOLLANDBROOK ELEMENTARY PHOTOVOLTAIC SYSTEM
52 READINGTON ROAD
WHITEHOUSE STATION, N.J. 08889
SHEET NAME
ONE-LINE DIAGRAM
Project ID: READ HOLL
Scale: AS SHOWN
SHEET #
E1.0

2158806-1

EXHIBIT B

PRELIMINARY DESCRIPTION OF FACILITIES

Name: Facility 2:Readington Middle School

Address: 52 Readington Road, Readington, NJ 08889

The final Facilities Description shall be the final As-Built drawings to be provided after Commercial Operation Date. The information below is preliminary and subject to change.

General Facilities Description (rooftop):

3.	Facilities Size DC:	163.8 kW_DC at STC capacity
4.	Facilities Size AC:	126 kW_AC

General Facilities Description (ground mount):

5.	Facilities Size DC:	132.3 kW_DC at STC capacity
6.	Facilities Size AC:	110 kW_AC

(For the purpose of the Guaranteed kWh, the rooftop and the ground mount will be deemed one facility).

Solar PV Panels (rooftop):

8.	Manufacturer:	Hyundai
9.	Model Number:	HiS – S350RI
10.	Module Wattage:	350W
11.	Panel Count:	468
12.	Type:	Monocrystalline 72-cell Modules
13.	Array tilt:	5 degrees
14.	Warranty Information:	Free from defects in materials and workmanship for 10 years, 97.5% minimum production on year 1, and 25 year linear power output with 80% minimum production at year 25.

Solar PV Panels (ground mount):

15.	Manufacturer:	Hyundai
16.	Model Number:	HiS – S350RI

17. Module Wattage:	350W
18. Panel Count:	378
19. Type:	Monocrystalline 72-cell Modules
20. Array tilt:	25 degrees
21. Warranty Information:	Free from defects in materials and workmanship for 10 years, 97.5% minimum production on year 1, and 25 year linear power output with 80% minimum production at year 25.

Inverters (rooftop):

6. Manufacturer:	Yaskawa Solectria
7. Model Number:	PVI-36TL-480, PVI-60TL-480
8. Number and size to be installed:	(2) 36 kW inverters and (1) 60 kW inverter
9. String size and Quantity:	18 and Quantity 26
10. Warranty Information:	10 Year standard warranty

Inverters (ground mount):

11. Manufacturer:	Yaskawa Solectria
12. Model Number:	PVI 50-TL, PVI 60-TL
13. Number and size to be installed:	(1) 50 kW inverter and (1) 60 kW inverters
14. String size and Quantity:	18 and Quantity 21
15. Warranty Information:	10 Year standard warranty

Mounting Facilities (rooftop):

4. Manufacturer:	Genmount
5. Model Number:	Genmounts LT
6. Type:	Ballasted Solar Racking

Mounting Facilities (ground mount):

7. Manufacturer:	Patriot
8. Model Number:	ATLAS-1-HIGH-SPEC-5
9. Type:	Ground Mounted- Pole Driven

Data Acquisition Facilities (DAS):

3. Manufacturer: Draker Energy
4. Model: Draker PV 250 Base Station or equivalent

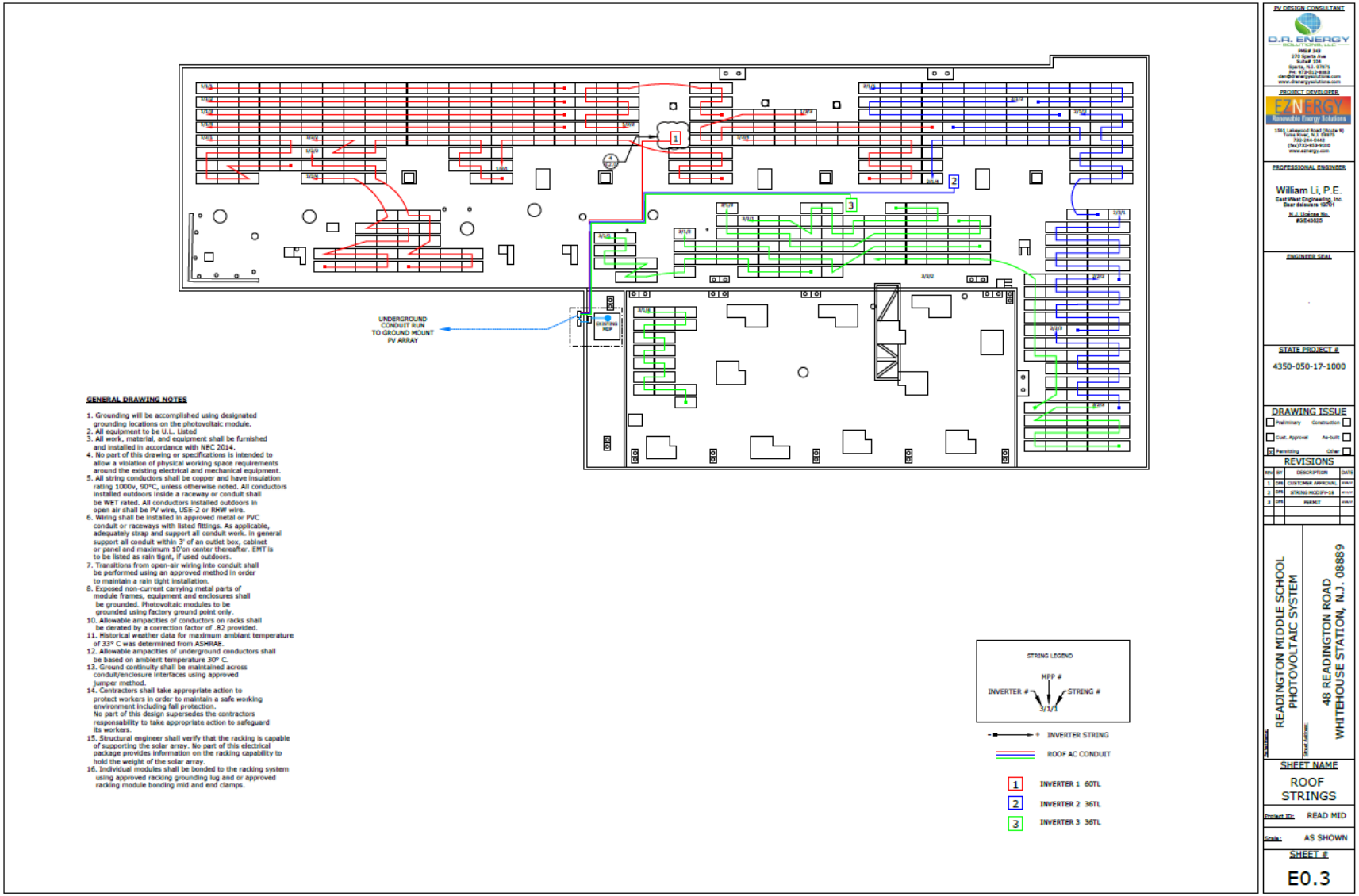
Landscaping:

A landscaping layout will be developed for the Readington Middle School that will allocate a portion of the $10,000 landscaping budget to screen the ground array in the front of the school where the buses currently park, by planting on the East along the driveway and the South along Readington Road, as portrayed in the orange boxes on the Conceptual Layout in Exhibit D. The landscaping will include a diverse mixture of plantings and will not consist of a monotype of a single species of plant.

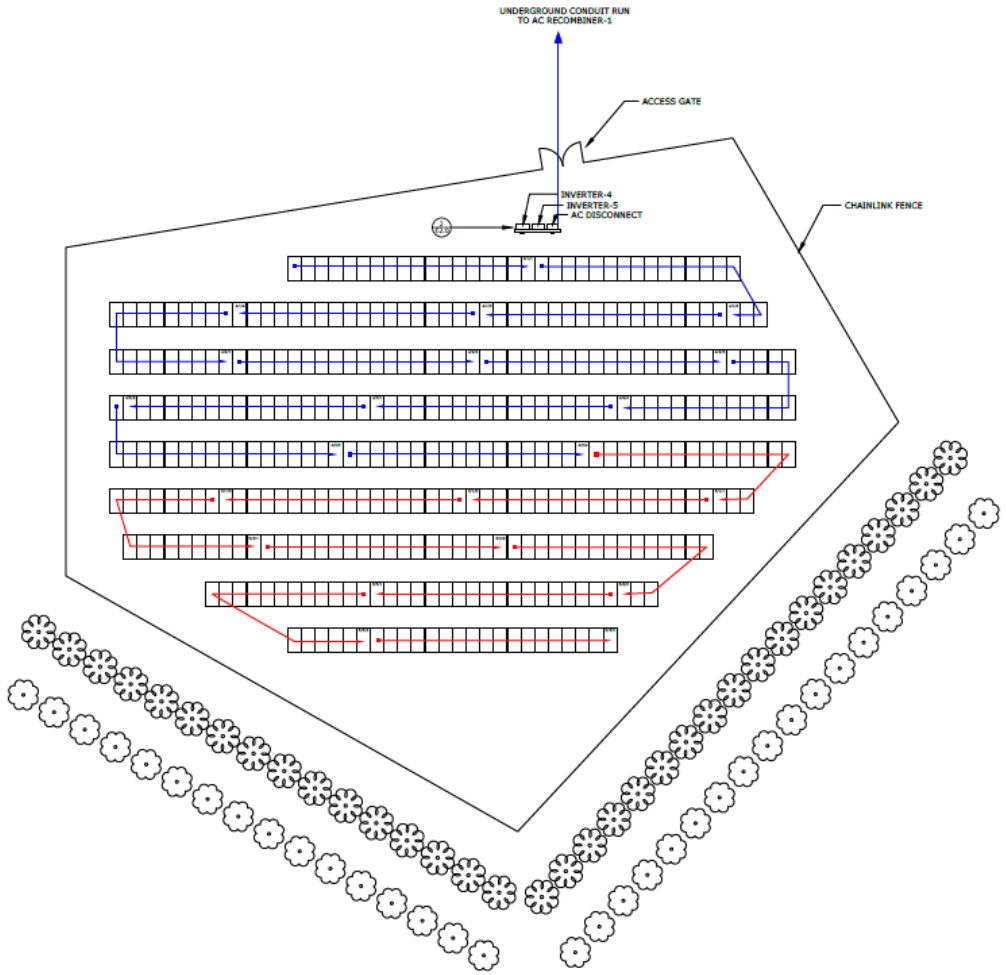
The $10,000 budget includes both Readington Middle School and Holland Brook School. If the Buyer requests landscaping in excess of the landscaping that can be supported by the Developer's $10,000 budget, the Developer shall be entitled to increase the Electricity Price for each $10,000 of additional costs in accordance with the following:

For each increase in landscaping costs of $10,000 in excess of the Developer's $10,000 landscaping budget	Electricity Price Change
For each $10,000 increment	$0.0005/kWh

Solar PV Facilities Layout (Rooftop):



Solar Facilities Layout (Ground mount):



STRING LEGEND

MPP #
INVERTER # — STRING #
3/1/1

INVERTER STRING

4 INVERTER 4 60TL

5 INVERTER 5 50TL

GENERAL DRAWING NOTES

1. Grounding will be accomplished using designated grounding locations on the photovoltaic module.
2. All equipment to be U.L. Listed
3. All work, material, and equipment shall be furnished and installed in accordance with NEC 2014.
4. No part of this drawing or specifications is intended to allow a violation of physical working space requirements around the existing electrical and mechanical equipment.
5. All string conductors shall be copper and have insulation rating 1000v, 90°C, unless otherwise noted. All conductors installed outdoors inside a raceway or conduit shall be WET rated. All conductors installed outdoors in open air shall be PV wire, USE-2 or RHW wire.
6. Wiring shall be installed in approved metal or PVC conduit or raceways with listed fittings. As applicable, adequately strap and support all conduit work. In general support all conduit within 3' of an outlet box, cabinet or panel and maximum 10'on center thereafter. EMT is to be listed as rain tight, if used outdoors.
7. Transitions from open-air wiring into conduit shall be performed using an approved method in order to maintain a rain tight installation.
8. Exposed non-current carrying metal parts of module frames, equipment and enclosures shall be grounded. Photovoltaic modules to be grounded using factory ground point only.
10. Allowable ampacities of conductors on racks shall be derated by a correction factor of .82 provided.
11. Historical weather data for maximum ambient temperature of 33° C was determined from ASHRAE.
12. Allowable ampacities of underground conductors shall be based on ambient temperature 30° C.
13. Ground continuity shall be maintained across conduit/enclosure interfaces using approved jumper method.
14. Contractors shall take appropriate action to protect workers in order to maintain a safe working environment including fall protection. No part of this design supersedes the contractors responsability to take appropriate action to safeguard its workers.
15. Structural engineer shall verify that the racking is capable of supporting the solar array. No part of this electrical package provides information on the racking capability to hold the weight of the solar array.
16. Individual modules shall be bonded to the racking system using approved racking grounding lug and or approved racking module bonding mid and end clamps.

PV DESIGN CONSULTANT
D.R. ENERGY SOLUTIONS, LLC
PMB# 342
170 Scotts Ave
Suite# 104
Sparta, N.J. 07871
Fax: 973-512-8882
dan@drenergysolutions.com
www.drenergysolutions.com

PROJECT DEVELOPER
EZ ENERGY
Renewable Energy Solutions
1361 Lakewood Road (Route 9)
Toms River, N.J. 08755
732-244-0462
(fax)732-953-9100
www.ezenergy.com

PROFESSIONAL ENGINEER
William Li, P.E.
East West Engineering, Inc.
Bear Delaware 19701
N.J. License No.
#GE45820

ENGINEER SEAL

STATE PROJECT #
4350-050-17-1000

DRAWING ISSUE
☐ Preliminary ☐ Construction
☐ Cust. Approval ☐ As-built
☒ Permitting ☐ Other

REVISIONS

NO.	BY	DESCRIPTION	DATE
1	DPR	CUSTOMER APPROVAL	
2	DPR	STRING MODIFY-SR	
3	DPR	PERMIT	

READINGTON MIDDLE SCHOOL
PHOTOVOLTAIC SYSTEM

48 READINGTON ROAD
WHITEHOUSE STATION, N.J. 08889

SHEET NAME
GROUND STRINGS

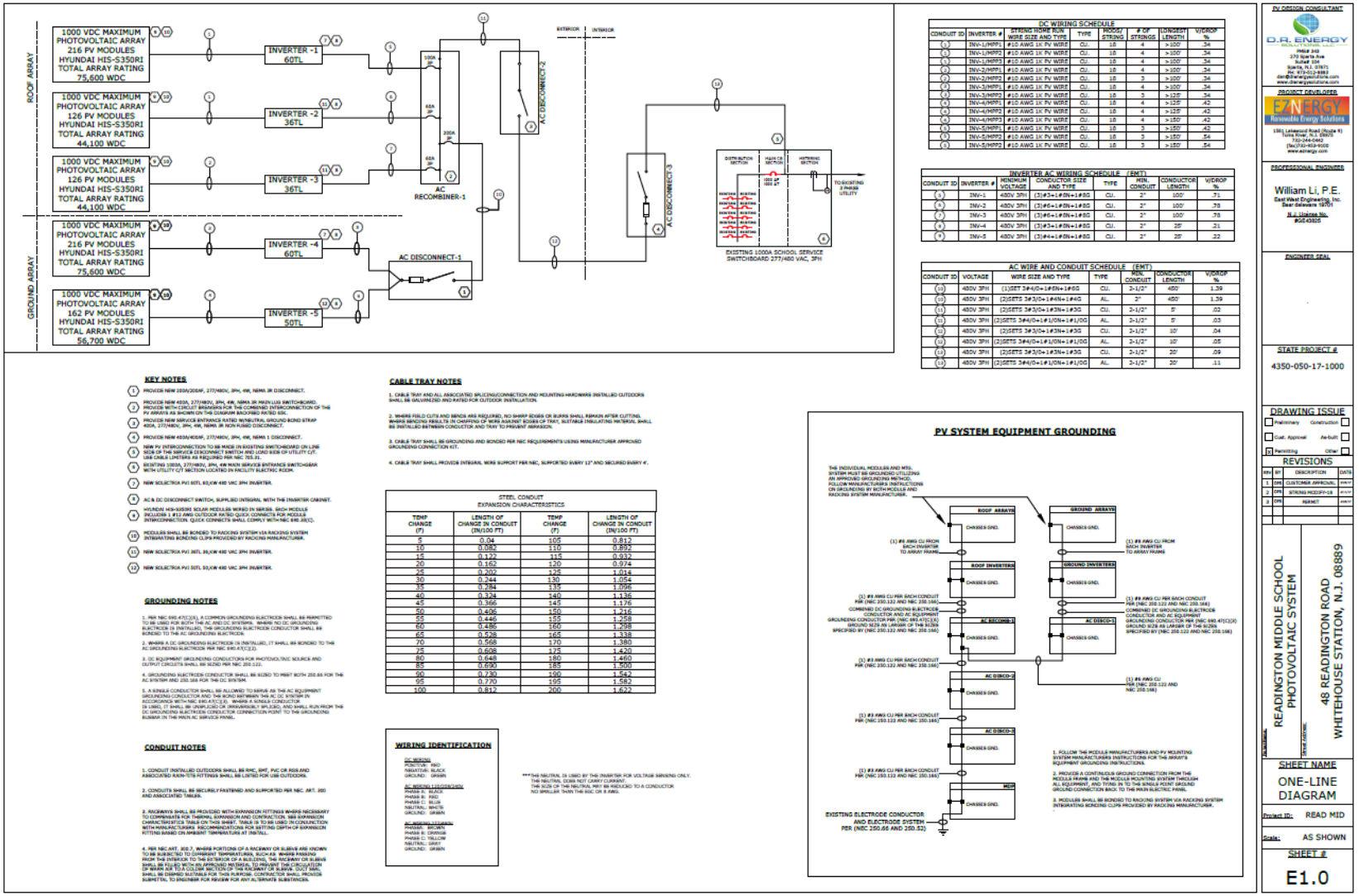
Project ID: READ MID

Scale: AS SHOWN

SHEET #
E0.4

2158806-1

Electrical Facilities Layout:



DC WIRING SCHEDULE

CONDUIT ID	INVERTER #	STRING HOME RUN WIRE SIZE AND TYPE	TYPE	MODS/ STRING	# OF STRINGS	LONGEST LENGTH	V/DROP %
1	INV-1/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>100'	.34
2	INV-1/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>100'	.34
3	INV-1/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>100'	.34
2	INV-2/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>100'	.34
2	INV-2/MPP2	#10 AWG 1K PV WIRE	CU.	18	3	>100'	.34
3	INV-3/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>100'	.34
3	INV-3/MPP2	#10 AWG 1K PV WIRE	CU.	18	3	>125'	.34
4	INV-4/MPP1	#10 AWG 1K PV WIRE	CU.	18	4	>125'	.42
4	INV-4/MPP2	#10 AWG 1K PV WIRE	CU.	18	4	>125'	.42
4	INV-4/MPP3	#10 AWG 1K PV WIRE	CU.	18	4	>150'	.42
5	INV-5/MPP1	#10 AWG 1K PV WIRE	CU.	18	3	>150'	.42
5	INV-5/MPP2	#10 AWG 1K PV WIRE	CU.	18	3	>150'	.54
5	INV-5/MPP3	#10 AWG 1K PV WIRE	CU.	18	3	>150'	.54

INVERTER AC WIRING SCHEDULE (EMT)

CONDUIT ID	INVERTER #	MINIMUM VOLTAGE	CONDUCTOR SIZE AND TYPE	TYPE	MIN. CONDUIT	CONDUCTOR LENGTH	V/DROP %
6	INV-1	480V 3PH	(3)#6+1#8N+1#8G	CU.	2"	100'	.71
6	INV-2	480V 3PH	(3)#6+1#8N+1#8G	CU.	2"	100'	.78
7	INV-3	480V 3PH	(3)#6+1#8N+1#8G	CU.	2"	100'	.78
8	INV-4	480V 3PH	(3)#3+1#8N+1#8G	CU.	3"	25'	.21
9	INV-5	480V 3PH	(3)#4+1#8N+1#8G	CU.	2"	25'	.22

AC WIRE AND CONDUIT SCHEDULE (EMT)

CONDUIT ID	VOLTAGE	WIRE SIZE AND TYPE	TYPE	MIN. CONDUIT	CONDUCTOR LENGTH	V/DROP %
10	480V 3PH	(1)SET 3#4/0+1#6N+1#6G	CU.	2-1/2"	450'	1.39
10	480V 3PH	(2)SETS 3#3/0+1#4N+1#4G	AL.	2"	450'	1.39
11	480V 3PH	(2)SETS 3#3/0+1#3N+1#3G	CU.	2-1/2"	5'	.02
11	480V 3PH	(2)SETS 3#4/0+1#1/0N+1#1/0G	AL.	2-1/2"	5'	.03
12	480V 3PH	(2)SETS 3#3/0+1#3N+1#3G	CU.	2-1/2"	10'	.04
12	480V 3PH	(2)SETS 3#4/0+1#1/0N+1#1/0G	AL.	2-1/2"	10'	.05
13	480V 3PH	(2)SETS 3#3/0+1#3N+1#3G	CU.	2-1/2"	20'	.09
13	480V 3PH	(3)SETS 3#4/0+1#1/0N+1#1/0G	AL.	2-1/2"	20'	.11

KEY NOTES

1. PROVIDE NEW 1000A/208AF, 277/480V, 3PH, 4W, NEMA 3R DISCONNECT.
2. PROVIDE NEW 400A, 277/480V, 3PH, 4W, NEMA 3R MAIN LUG SWITCHBOARD. PROVIDE WITH CIRCUIT BREAKERS FOR THE COMBINED INTERCONNECTION OF THE PV ARRAYS AS SHOWN ON THE DIAGRAM BACKFEED RATED 60A.
3. PROVIDE NEW SERVICE ENTRANCE RATED W/NEUTRAL GROUND BOND STRAP 400A, 277/480V, 3PH, 4W, NEMA 3R NON FUSED DISCONNECT.
4. PROVIDE NEW 400A/400AF, 277/480V, 3PH, 4W, NEMA 1 DISCONNECT.
5. NEW PV INTERCONNECTION TO BE MADE ON EXISTING SWITCHBOARD ON LINE SIDE OF THE SERVICE DISCONNECT SWITCH AND LOAD SIDE OF UTILITY CT. USE CABLE LIMITERS AS REQUIRED PER NEC 705.31.
6. EXISTING 1000A, 277/480V, 3PH, 4W MAIN SERVICE ENTRANCE SWITCHGEAR WITH UTILITY CT SECTION LOCATED IN FACILITY ELECTRIC ROOM.
7. NEW SOLECTRIA PVI 60TL 83/69 480 VAC 3PH INVERTER.
8. AC & DC DISCONNECT SWITCH, SUPPLIED INTEGRAL WITH THE INVERTER CABINET.
9. HYUNDAI HIS-S350RI SOLAR MODULES WIRED IN SERIES. EACH MODULE INCLUDES 1 #12 AWG OUTDOOR RATED QUICK CONNECTS FOR MODULE INTERCONNECTION. QUICK CONNECTS SHALL COMPLY WITH NEC 690.33(C).
10. MODULES SHALL BE BONDED TO RACKING SYSTEM VIA RACKING SYSTEM INTEGRATING BONDING CLIPS PROVIDED BY RACKING MANUFACTURER.
11. NEW SOLECTRIA PVI 36TL 83/69 480 VAC 3PH INVERTER.
12. NEW SOLECTRIA PVI 50TL 83/69 480 VAC 3PH INVERTER.

GROUNDING NOTES

1. PER NEC 690.47(C)(3), A COMMON GROUNDING ELECTRODE SHALL BE PERMITTED TO BE USED FOR BOTH THE AC AND DC SYSTEMS. WHERE NO DC GROUNDING ELECTRODE IS INSTALLED, THE GROUNDING ELECTRODE CONDUCTOR SHALL BE BONDED TO THE AC GROUNDING ELECTRODE.
2. WHERE A DC GROUNDING ELECTRODE IS INSTALLED, IT SHALL BE BONDED TO THE AC GROUNDING ELECTRODE PER NEC 690.47(C)(3).
3. DC EQUIPMENT GROUNDING CONDUCTORS FOR PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUITS SHALL BE SIZED PER NEC 250.122.
4. GROUNDING ELECTRODE CONDUCTOR SHALL BE SIZED TO MEET BOTH 250.66 FOR THE AC SYSTEM AND 250.166 FOR THE DC SYSTEM.
5. A SINGLE CONDUCTOR SHALL BE ALLOWED TO SERVE AS THE AC EQUIPMENT GROUNDING CONDUCTOR FOR ALL INVERTERS AND SHALL BE SIZED TO THE AC SYSTEM IN ACCORDANCE WITH NEC 690.47(C)(3). WHERE A SINGLE CONDUCTOR IS USED, IT SHALL BE UNSPLICED OR IRREVERSIBLY SPLICED, AND SHALL RUN FROM THE DC GROUNDING ELECTRODE CONDUCTOR CONNECTION POINT TO THE GROUNDING BUSBAR IN THE MAIN AC SERVICE PANEL.

CONDUIT NOTES

1. CONDUIT INSTALLED OUTDOORS SHALL BE RMC, IMC, PVC OR RGS AND ASSOCIATED RAIN-TITE FITTINGS SHALL BE LISTED FOR USE OUTDOORS.
2. CONDUITS SHALL BE SECURELY FASTENED AND SUPPORTED PER NEC. ART. 300 AND ASSOCIATED TABLES.
3. RACEWAYS SHALL BE PROVIDED WITH EXPANSION FITTINGS WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION. SEE EXPANSION CHARACTERISTICS TABLE ON THIS SHEET. TABLE IS TO BE USED IN CONJUNCTION WITH MANUFACTURERS RECOMMENDATIONS FOR SETTING DEPTH OF EXPANSION FITTING BASED ON AMBIENT TEMPERATURE AT INSTALL.
4. PER NEC ART. 300.7, WHERE PORTIONS OF A RACEWAY OR SLEEVE ARE KNOWN TO BE SUBJECTED TO CURRENT TEMPERATURES, SUCH AS WHERE PASSING FROM THE INTERIOR TO THE EXTERIOR OF A BUILDING, THE RACEWAY OR SLEEVE SHALL BE FILLED WITH AN APPROVED MATERIAL TO PREVENT THE CIRCULATION OF WARM, MOIST AIR FROM THE WARMER SIDE TO THE COLDER SIDE. CONTRACTOR SHALL BE EXPIRED SUITABLE FOR THIS PURPOSE. CONTRACTOR SHALL PROVIDE SUBMITTAL TO ENGINEER FOR REVIEW FOR ANY ALTERNATE SUBSTANCES.

CABLE TRAY NOTES

1. CABLE TRAY AND ALL ASSOCIATED SPLICING/CONNECTION AND MOUNTING HARDWARE INSTALLED OUTDOORS SHALL BE GALVANIZED AND RATED FOR OUTDOOR INSTALLATION.
2. WHERE FIELD CUTS AND BENDS ARE REQUIRED, NO SHARP EDGES OR BURRS SHALL REMAIN AFTER CUTTING. WHERE BENDING RESULTS IN CHAFING OF WIRE AGAINST EDGES OF TRAY, SUITABLE INSULATING MATERIAL SHALL BE INSTALLED BETWEEN CONDUCTOR AND TRAY TO PREVENT ABRASION.
3. CABLE TRAY SHALL BE GROUNDING AND BONDED PER NEC REQUIREMENTS USING MANUFACTURER APPROVED GROUNDING CONNECTION KIT.
4. CABLE TRAY SHALL PROVIDE INTEGRAL WIRE SUPPORT PER NEC, SUPPORTED EVERY 12" AND SECURED EVERY 4'.

STEEL CONDUIT EXPANSION CHARACTERISTICS

TEMP CHANGE (F)	LENGTH OF CHANGE IN CONDUIT (IN/100 FT)	TEMP CHANGE (F)	LENGTH OF CHANGE IN CONDUIT (IN/100 FT)
5	0.04	105	0.812
10	0.082	110	0.892
15	0.122	115	0.932
20	0.162	120	0.974
25	0.202	125	1.014
30	0.244	130	1.054
35	0.284	135	1.096
40	0.324	140	1.136
45	0.366	145	1.176
50	0.406	150	1.216
55	0.446	155	1.258
60	0.486	160	1.298
65	0.528	165	1.338
70	0.568	170	1.380
75	0.608	175	1.420
80	0.648	180	1.460
85	0.690	185	1.500
90	0.730	190	1.542
95	0.770	195	1.582
100	0.812	200	1.622

WIRING IDENTIFICATION

DC WIRING
POSITIVE: RED
NEGATIVE: BLACK
GROUND: GREEN

AC WIRING (1ΦSYSTEM)
PHASE A: BLACK
PHASE B: RED
PHASE C: BLUE
NEUTRAL: WHITE
GROUND: GREEN

AC WIRING (3ΦSYSTEM)
PHASE: BROWN
PHASE B: ORANGE
PHASE C: YELLOW
NEUTRAL: GREY
GROUND: GREEN

***THIS NEUTRAL IS USED BY THIS INVERTER FOR VOLTAGE SENSING ONLY. THIS NEUTRAL DOES NOT CARRY CURRENT. THIS SIZE OF THE NEUTRAL MAY BE REDUCED TO A CONDUCTOR NO SMALLER THAN THE EGC OR 8 AWG.

PV SYSTEM EQUIPMENT GROUNDING

PV DESIGN CONSULTANT
D.R. ENERGY SOLUTIONS, LLC
Initial 243
370 Sparta Ave
Sussex 104
Sparta, N.J. 07871
Ph: 973-512-8882
dan@drenergysolutions.com
www.drenergysolutions.com

PROJECT DEVELOPER
EZNERGY Renewable Energy Solutions
1941 Lakewood Road (Route 9)
Toms River, N.J. 08755
732-244-0462
(fax)732-602-9100
www.eznergy.com

PROFESSIONAL ENGINEER
William Li, P.E.
East West Engineering, Inc.
Bear delaware 19701
N.J. License No.
#GE-03505

ENGINEER SEAL

STATE PROJECT #
4350-050-17-1000

DRAWING ISSUE
Preliminary
Construction
Cust. Approval
As-built
Permitting
Other

REVISIONS

REV.	BY	DESCRIPTION	DATE
1	DM	CUSTOMER APPROVAL	9/9/17
2	DM	STRING MODIFY-16	9/19/17
3	DM	REMOVE	10/6/17

READINGTON MIDDLE SCHOOL PHOTOVOLTAIC SYSTEM
48 READINGTON ROAD WHITEHOUSE STATION, N.J. 08889

SHEET NAME
ONE-LINE DIAGRAM

Project ID: READ MID
Scale: AS SHOWN
SHEET #
E1.0

EXHIBIT B

PRELIMINARY DESCRIPTION OF FACILITIES

Name: Three Bridges Elementary School

Address: 480 Main Street, Readington, NJ 08887

The final Facilities Description shall be the final As-Built drawings to be provided after Commercial Operation Date. The information below is preliminary and subject to change.

General Facilities Description:

7. Facilities Size DC:	132.3 kW_DC at STC capacity
8. Facilities Size AC:	108 kW_AC

Solar PV Panels:

22. Manufacturer:	Hyundai
23. Model Number:	HiS – S350RI
24. Module Wattage:	350W
25. Panel Count:	378
26. Type:	Monocrystalline 72-cell Modules
27. Array tilt:	5 degrees (flat roof) and 6.5 degrees (pitched)
28. Warranty Information:	Free from defects in materials and workmanship for 10 years, 97.5% minimum production on year 1, and 25 year linear power output with 80% minimum production at year 25.

Inverters:

16. Manufacturer:	Yaskawa Solectria
17. Model Number:	PVI 36-TL
18. Number and size to be installed:	(3) PVI 36-TL
19. String size and Quantity:	18 and Quantity of 21
20. Warranty Information:	10 Year standard warranty

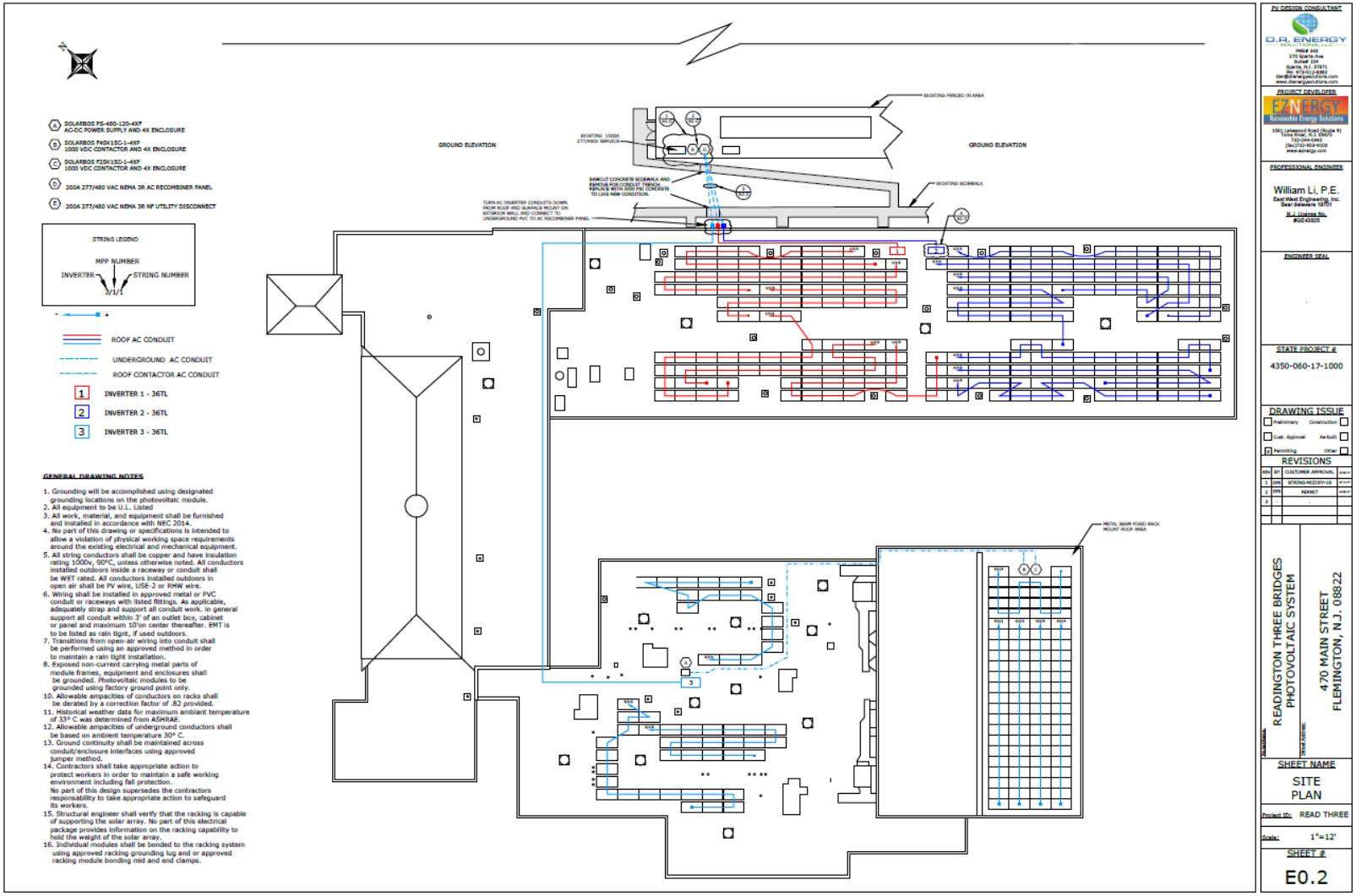
Mounting Facilities:

10. Manufacturer:	Genmounts
11. Model Number:	Gemounts LT , Genmounts FastPitch
12. Type:	Ballasted Rooftop, Pitched Rooftop

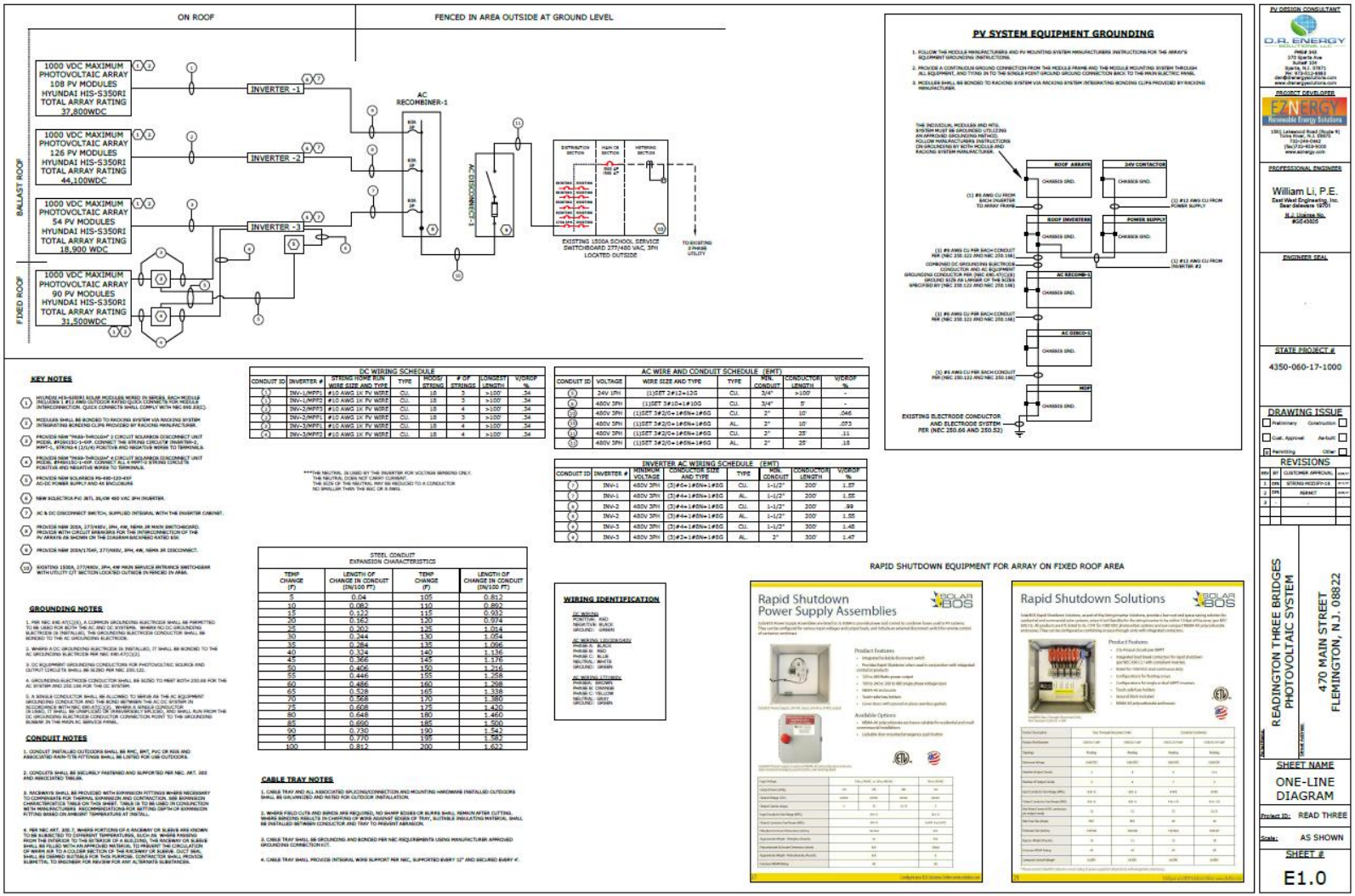
Data Acquisition Facilities (DAS):

5. Manufacturer: Draker Energy
6. Model: Draker PV 250 Base Station or equivalent

Solar PV Facilities Layout:



Electrical Facilities Layout:



CONDUIT ID	INVERTER #	STRING/HOME RUN WIRE SIZE AND TYPE	TYPE	MODS/ STRING	# OF STRINGS	LONGEST LENGTH	V/DROP %
1	INV-1/MPP1	#10 AWG 1K FV WIRE	CU.	18	3	>100'	.34
2	INV-1/MPP2	#10 AWG 1K FV WIRE	CU.	18	3	>100'	.34
3	INV-2/MPP1	#10 AWG 1K FV WIRE	CU.	18	4	>100'	.34
4	INV-2/MPP1	#10 AWG 1K FV WIRE	CU.	18	3	>100'	.34
5	INV-3/MPP1	#10 AWG 1K FV WIRE	CU.	18	4	>100'	.34
6	INV-3/MPP2	#10 AWG 1K FV WIRE	CU.	18	4	>100'	.34

CONDUIT ID	VOLTAGE	WIRE SIZE AND TYPE	TYPE	MIN. CONDUIT	CONDUCTOR LENGTH	V/DROP %
8	24V 1PH	(1)SET 2#12+12G	CU.	3/4"	>100'	-
9	480V 3PH	(1)SET 3#10+1#10G	CU.	3/4"	5'	-
10	480V 3PH	(1)SET 3#2/0+1#6N+1#6G	CU.	2"	10'	.046
11	480V 3PH	(1)SET 3#2/0+1#6N+1#6G	AL.	2"	10'	.073
12	480V 3PH	(1)SET 3#2/0+1#6N+1#6G	CU.	2"	25'	.11
13	480V 3PH	(1)SET 3#2/0+1#6N+1#6G	AL.	2"	25'	.18

CONDUIT ID	INVERTER #	MINIMUM VOLTAGE	CONDUCTOR SIZE AND TYPE	TYPE	MIN. CONDUIT	CONDUCTOR LENGTH	V/DROP %
7	INV-1	480V 3PH	(3)#6+1#8N+1#8G	CU.	1-1/2"	200'	1.37
7	INV-1	480V 3PH	(3)#4+1#8N+1#8G	AL.	1-1/2"	200'	1.55
8	INV-2	480V 3PH	(3)#4+1#8N+1#8G	CU.	1-1/2"	200'	.99
8	INV-2	480V 3PH	(3)#4+1#8N+1#8G	AL.	1-1/2"	200'	1.55
9	INV-3	480V 3PH	(3)#4+1#8N+1#8G	CU.	1-1/2"	300'	1.48
9	INV-3	480V 3PH	(3)#2+1#8N+1#8G	AL.	2"	300'	1.47

TEMP CHANGE (F)	LENGTH OF CHANGE IN CONDUIT (IN/100 FT)	TEMP CHANGE (F)	LENGTH OF CHANGE IN CONDUIT (IN/100 FT)
5	0.04	105	0.812
10	0.082	110	0.892
15	0.122	115	0.932
20	0.162	120	0.974
25	0.202	125	1.014
30	0.244	130	1.054
35	0.284	135	1.096
40	0.324	140	1.136
45	0.366	145	1.176
50	0.406	150	1.216
55	0.446	155	1.258
60	0.486	160	1.298
65	0.528	165	1.338
70	0.568	170	1.380
75	0.608	175	1.420
80	0.648	180	1.460
85	0.690	185	1.500
90	0.730	190	1.542
95	0.770	195	1.582
100	0.812	200	1.622

PV DESIGN CONSULTANT
D.R. ENERGY SOLUTIONS, LLC
PROJECT DEVELOPER
ENERGY Renewable Energy Solutions
PROFESSIONAL ENGINEER
William Li, P.E.
East West Engineering, Inc.
Dear Delaware 19970
N.J. License No. #GE45835
ENGINEER SEAL
STATE PROJECT #
4350-060-17-1000
DRAWING ISSUE
Preliminary
Construction
Cust. Approval
As-built
Permitting
Other
REVISIONS

REV	BY	CUSTOMER APPROVAL	DATE
1	DRS	STRING MOD/PP-18	4/5/17
2	DRS	PERMIT	4/6/17
3			
4			

READINGTON THREE BRIDGES PHOTOVOLTAIC SYSTEM
470 MAIN STREET FLEMINGTON, N.J. 08822
SHEET NAME
ONE-LINE DIAGRAM
Project ID: READ THREE
Scale: AS SHOWN
SHEET #
E1.0

EXHIBIT C

AGREEMENT PROVISIONS

Annual Facilities Degradation Factor	0.5%
EDC	Jersey Central Power and Light
Buyers Representative	***The Buyer's Representative shall be Gabel Associates. Developer shall direct all communications and requests for information to Buyer through the Buyer's Representative at all times until the point of Commercial Operation of all of the Facilities.***

Electricity Price

Readington Board of Education		
Electricity Price		
First Year Rate ($/kWh)	$	0.06799
Annual Rate Escalator		1.99%
Year	**Electricity Price**	
	($/kWh)	
1		0.06799
2		0.06934
3		0.07072
4		0.07213
5		0.07357
6		0.07503
7		0.07652
8		0.07805
9		0.07960
10		0.08118
11		0.08280
12		0.08445
13		0.08613
14		0.08784
15		0.08959

Guaranteed kWh: [on a per facility basis]

True Up Term Years	*Holland Brook School Guaranteed kWh*
Years 1-5	*3,821,825*
Years 6-10	*3,727,230*
Years 11-15	*3,634,977*

True Up Term Years	*Readington Middle School Guaranteed kWh*
Years 1-5	*1,639,647*
Years 6-10	*1,599,064*
Years 11-15	*1,559,485*

True Up Term Years	***Three Bridges School Guaranteed kWh***
Years 1-5	***665,646***
Years 6-10	***649,171***
Years 11-15	***633,103***

Attachment 1: Updated Construction Schedule

	Readington BOE Project Schedule - Readington Middle School, Holland Brook School, Three Bridges School				
ID	Name	Duration	Start	Finish	Status
1	Kickoff Meeting	1 Days	3-Aug-2016	4-Aug-2016	Completed
2	Preliminary Site Visits	3 Days	12-Oct-2016	14-Oct-2016	Completed
3	Structural Site Visits	1Day	27-Dec-2016	27-Dec-2016	Completed
4	Civil Site Visits	2 Days	12-Dec-2016	13-Dec-2106	Completed
5	Develop 30% Designs	6 Days	28-Dec-2016	3-Jan-2017	Completed
6	Landscaper Sent Preliminary Designs	11 Days	28-Dec-2016	8-Jan-2017	Completed
7	Ameresco Review of Preliminary Designs	3 Days	4-Jan-2017	7-Jan-2017	Completed
8	Readington Review	2 Days	7-Jan-2017	9-Jan-2017	Completed
9	Readington Planning Board Meeting Section 31 Courtesy Review	1 Days	27-Feb-2017	27-Feb-2017	Completed
10	Final Landscaping Plans	1 Days	5-May-2017	6-May-2017	
11	Dept of Education Applications	90 Days	5-May-2017	3-Aug-2017	
12	Civil Approvals	35 Days	30-Mar-2017	4-May-2017	Completed
13	Hunterdon County Soil Conservation District, Planning & Health Department Approval	130 Days	24-Apr-2017	1-Sep-2017	
14	Complete Final (Permitting Level) Designs	65 Days	24-Jan-2017	30-Mar-2017	Completed
15	Submit Interconnection Application to JCP&L	1 Days	18-Apr-2017	18-Apr-2017	Completed
16	Submit SREC applications to NJ Clean Energy	1 Days	31-Mar-2017	31-Mar-2017	Completed
17	Fire Department Design Review Meeting	1 Days	11-May-2017	11-May-2017	
18	JCP&L Review & Execute Interconnection Agreements	30 Days	18-Apr-2017	18-May-2017	15
19	Submit Building & Electrical Permitting Applications	30 Days	3-Aug-2017	2-Sep-2017	11
20	Order Modules	130 Days	5-May-2017	12-Sep-2017	
21	Order Racking, Inverters, Other Major Equipment	75 Days	20-Jun-2017	3-Sep-2017	
22	Pre-Construction Meeting with Readington	1 Days	26-Jul-2017	26-Jul-2017	
23	Installation of Rooftop Mounting System	10 Days	12-Sep-2017	22-Sep-2017	20
24	Installation of Rooftop PV Panels	20 Days	22-Sep-2017	12-Oct-2017	
25	Wiring of Rooftop PV Panels	10 Days	12-Oct-2017	22-Oct-2017	
26	Installation & Wiring of Rooftop Inverters	5 Days	22-Oct-2017	27-Oct-2017	
27	Rooftop Service Upgrade/ Tie in	2 Days	27-Oct-2017	29-Oct-2017	
28	Rooftop DAS Installation	2 Days	27-Oct-2017	29-Oct-2017	
29	Rooftop testing	2 Days	29-Oct-2017	31-Oct-2017	
30	Roof Punchlist	2 Days	31-Oct-2017	2-Nov-2017	
31	JCP&L pole removal and replacement at Readington Middle School	10 Days	10-Jul-2017	20-Jul-2017	
32	Ground Penetrating Radar	2 Days	26-Jul-2017	28-Jul-2017	
33	Ground Site Mobilization	5 Days	2-Sep-2017	7-Sep-2017	19
34	Ground Site Work & Landscaping Start	10 Days	7-Sep-2017	17-Sep-2017	
35	Racking and Other Material Deliveries	3 Days	3-Sep-2017	6-Sep-2017	21
36	Installation of Ground Mounting System	20 Days	6-Sep-2017	26-Sep-2017	35
37	Module Deliveries	1 Days	12-Sep-2017	13-Sep-2017	20
38	Installation of Ground PV Panels	25 Days	13-Sep-2017	8-Oct-2017	37
39	Wiring of Ground PV Panels	25 Days	8-Oct-2017	2-Nov-2017	
40	Installation & Wiring of Ground Inverters	12 Days	2-Nov-2017	14-Nov-2017	
41	Ground Service Upgrade/ Tie in	13 Days	14-Nov-2017	27-Nov-2017	40
42	Ground DAS Installation	4 Days	27-Nov-2017	1-Dec-2017	
43	Ground Commissioning/ testing	2 Days	1-Dec-2017	3-Dec-2017	
44	Ground Punchlist	2 Days	3-Dec-2017	5-Dec-2017	
45	Ground and Final Rooftop Inspections	15 Days	5-Dec-2017	20-Dec-2017	
46	PTO/Commercial Operation Date	1 Days	20-Dec-2017	21-Dec-2017	45
47	Dropoff Manuals & Documentation	1 Days	10-Jan-2018	11-Jan-2018	