Purchasing Office
P.O. Box 40197 • Lafayette, LA 70504-0197
Office: (337) 482-5396
Fax: (337) 482-5059

October 19, 2023

ADDENDUM NO. 1

PROPOSAL FOR FURNISHING A GRID TESTING FACILITY (GTF) FOR PURPOSES OF TESTING AND TRAINING THIS PROJECT WILL INCLUDE THE PARTIAL DEMOLITION OF EXISTING EQUIPMENT, INSTALLATION OF NEW EQUIPMENT, AND THE INTEGRATION OF EXISTING AND NEW EQUIPMENT IN THE BID SPECIFICATIONS.

Due Tuesday, October 31, 2023 2:00PM Solicitation No. 24012

The following clauses/alterations shall be made part of the original specifications as though issued at the same time and shall be incorporated integrally therewith.

Item No. 1 – Responses to vendor questions:

Vendor question:	Department response:
(1) Our company is interested in exploring the invitation to bid. We were wondering if you already had a contact at ETAP you were working with to develop the scope of work/design the project or if there is anyone else ULL is working with that we would need to consult before preparing a bid. Please advise.	We spoke with the ETAP contact below about this project, but he did not help design the microgrid, develop the specs, or create the scope of work. The ETAP contact is below: ETAP R&D - Dr. Ahmed Y. Saber, SMIEEE (VP Optimization and AI) ahmed.saber@etap.com (949) 900-1079 direct (949) 900-1000 main Please note that you are not required to consult with ETAP prior to preparing a bid. Also, remember that changes to specifications must be in writing in the form of an addendum.

Item No. 2 – Design drawings from the electrical contractor bid package, as part of this bid package so that the microgrid controller contractor will understand the design of the microgrid that they will be controlling with the equipment procured under this bid package.

Please see attached.

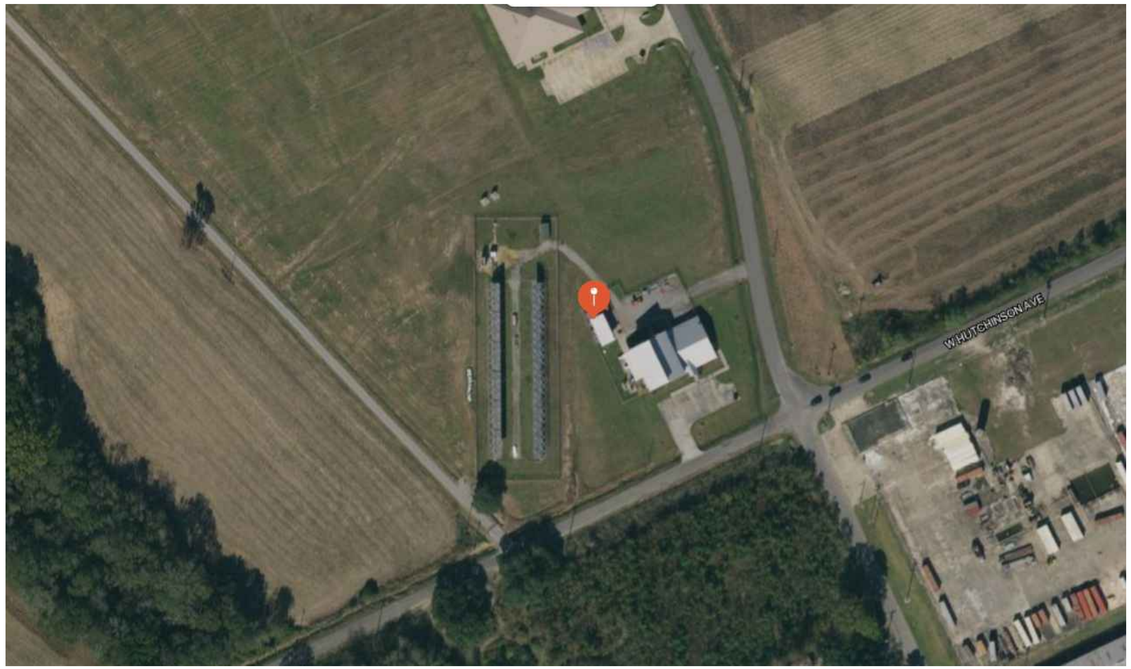
For questions related to bidding these projects, please contact the UL Lafayette Purchasing Department at martina.howard@louisiana.edu or 337.482.1079.
Business hours are: Mon-Thu 7:30am – 5:00pm CST (lunch 11:45-12:30); Fri 7:30am -12:30pm.

ACKNOWLEDGEMENT: *If you have already submitted your bid, and this Addendum creates a need to revise your bid, you must indicate any change(s) below, identify your business name and sign where shown. Revisions shall be submitted/delivered PRIOR to bid due date and time, by email. Bid revisions received after bid due date and time cannot be considered, whereupon the bidder must either honor or withdraw its original bid. If you have already submitted your bid and this addendum does not cause you to revise your bid, acknowledge receipt of this addendum by signing below and returning it to the Purchasing Department prior to bid due date.*

Marie C. Frank, MPA, CPPB
Assistant Vice President for Administration & Finance
University of Louisiana at Lafayette
Department of Purchasing

Firm Name: _____ **Signature:** _____

Overhead View



UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO ALTERNATIVE ENERGY CENTER

ISLANDING MICROGRID SYSTEM

2008 HUTCHINSON AVE.
CROWLEY, LA 70526

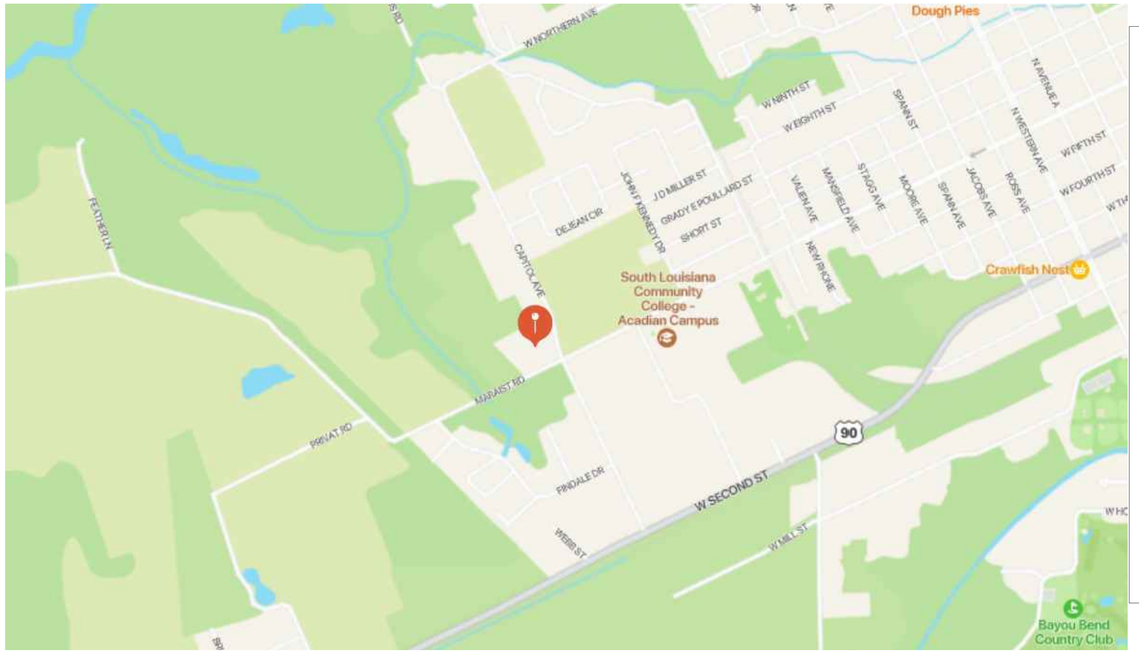
PV System Size:	50 kWDC
Module Manufacturer:	First Solar
Module Model:	FS–6380A
Module Quantity:	132
String Quantity:	22
Inverter Manufacturer:	DynaPower
Inverter (Qty) Model:	(1) MPS–125 EHV 480V 3P
Battery Manufacturer:	Blue Planet Energy
Battery System:	128 kWh Battery
Electric Vehicle Service Equipment [EVSE]	ChargePoint CPE100 Series 24kW

Scope of Work Summary

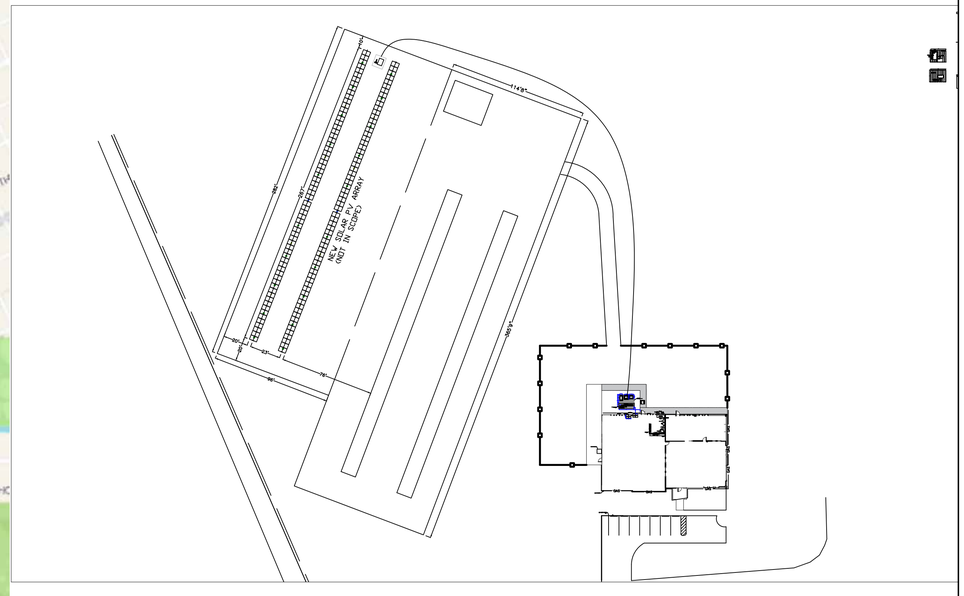
Partial demolition of existing equipment and installation of new equipment
Integration of existing generation sources and loads into AC bus
Microgrid upgrade including:

- 50kW Ground–Mounted PV Array Installation
- Energy Storage System – Battery and DC/AC Inverter
- AC Source Bus
- AC Test Load
- Facility Grid Contactor
- Microgrid Controller

Location Map



System Plan



SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By	Andrea Lee, Nick Boyd
Date	09/15/2022
Scale	N/A
Sheet	PV–1.0

Cover Page

Electrical Notes

The contractor shall obtain all necessary certifications for work installed, pay all related fees and charges, and deliver all certificates and inspection approvals to the owner before his work will be considered complete.

All work shall be in accordance with the National Electrical Code (NEC) and all materials shall be OSHA Nationally Recognized Testing Laboratory (NRTL) or Underwriters Laboratories (UL) labeled.

All new equipment shall have an interrupt rating (kAIC) greater than or equal to the existing equipment.

All inverters shall be IEEE 929 compliant and be inspected by the local utility before commissioning, testing, and operation.

Installation

Installer/subcontractor shall have a NABCEP PV Technician certification or equivalent, and should have successfully completed at least two other nonresidential solar PV projects of equal or greater size and complexity.
All work shall be installed in a first class and neat manner by those skilled in the trade involved. All details of the installation shall be electrically and mechanically correct.

Torque and mark all racking and mechanical lugs.

Conductor Installation

PV system conductors shall be identified per NEC 690.31(B).

THHN/THWN-2 insulation is acceptable for aluminum MC Cable. For aluminum conductors XHHW-2 shall be used.

Compression lugs shall be used on all aluminum cable terminations. Mechanical lugs may only be used for copper cable terminations.

Noalox to be used with all aluminum lugs.

Install wire and cable in accordance with the NEC, the National Electrical Contractors Association's (NECA) "Standard of Installation", and the Manufacturer's installation instructions. The installation shall be in accordance with recognized industry practices and the local authority having jurisdiction.

String wiring and homeruns shall be secured to the underside of the modules and racking using Sunbundler-type PVC coated stainless ties outdoor rated for UV. Outside of array, transition to EMT conduit.

The use of wire splices is prohibited (except in order to relocate LP-1).

Wire lube is required for wire pulls through conduit runs of 20' or longer, or with bends in 180° or more. Wire lube is required even when using self lubricating cables.

Raceways and Conduit

Raceway sizes shall be no less than 3/4" in diameter.

PVC conduits shall be schedule 80.

Conduit shall be EMT where not subject to physical damage. Conduits shall be IMC or RMC where subject to physical damage. PVC conduits are only permitted in below grade duct banks. Rooftop locations are considered subject to physical damage.

All rooftop conduit shall be marked per local fire codes.

All penetrations shall be sealed to maintain the existing fire rating.

EMT conduit shall use properly installed, factory-stamped raintight compression connectors.

Drawings show raceway locations, but contractor may adjust to suit field locations.

Conduit elbows shall be of the same make, quality, and finish as the conduit used.

Apply two protective coats of asphaltum compound for any galvanized steel conduits directly buried in earth.

Provide expansion fittings with bonding jumpers for every 100' of straight conduit run. Conduit expansion and deflection fittings with bonding jumpers shall be used whenever crossing building expansions.

Leave wire sufficiently long to permit making final connections.

Conduit over 10' in length shall be provided with synthetic pulling rope.

A bucket 15" wide or less shall be used for trenching.

All conduit trenches must be minimum of 18" or as required by code, and use detectable underground warning tape.

Repair surfaces damaged by trenching to match previously existing conditions.

Phase Relationship

Connect feeders to preserve phase relationship throughout the system. Phase legs of feeders shall match bus or cable arrangements for all connected equipment. Color coding shall be as follows:

-600 VAC, 1000 VDC, 1500 VDC
-Ungrounded Positive Conductor: Red
-Ungrounded Negative Conductor: Black
-AC and DC Systems:
-Grounded Conductor: White
-Ground: Green

-208/120 VAC
-A Phase: Black, B Phase: Red, C Phase: Blue

-277/480 VAC
-A Phase: Brown, B Phase: Orange, C Phase: Yellow

Color coding must be used consistently for the entire project. Where color coded cable is not used, tape conductor with overlapping colored tape.

Enclosures

Outdoor electrical enclosures shall be rated NEMA 3R, 4, Or 4X. Indoor enclosures shall be rated NEMA 1. All electrical equipment shall be listed or labeled by a recognized testing agency.

Panelboard doors shall be quarter turn latches or external handle with internal latches only.

Penetrations or cable entries in the top of outdoor enclosures are not permitted. Enter outdoor enclosures from the bottom or side.

Conduit terminating in outdoor enclosures shall use Myers-type hubs including a ground screw. Use raintight fittings for all cable entries.

Arc flash hazard warning labels shall be mounted on every combiner box, terminal box, inverter, AC and DC switch, transformer, and switchgear.

Handholes, pull boxes, or conduit bodies shall be installed when the raceway has more than 360° of bends, or as necessary to not exceed manufacturer's maximum cable pulling tension.

Grounding

The contractor shall furnish and install grounding in accordance with the National Electrical Code.

Tests

Final tests shall be held in the presence of owner's representatives and to their satisfaction.

Megger all string wiring, combiner box output feeders, and AC feeders to ensure quality installation and submit results to owner for review.

General Notes

The general notes apply to all solar-related "PV" numbered drawings under the contract. Refer to individual drawings for any additional notes.

The drawings indicate general arrangement of systems and work. Follow drawings in laying out work and verify space conditions. Maintain headroom, working conditions, and required clearances.

The PV system contractor shall coordinate all work with the engineer, the construction manager, and any other contractors to ensure that the PV system is installed as specified in these drawings.

Personal Protective Equipment (PPE) shall be used in accordance with NFPA 70E and OSHA requirements.

Unforeseen obstructions may require a change to the array layout. Changes to the array layout should be made as to not change the number of modules on a inverter.

Legend - Symbols


Solar Module

Junction Box


Panel Board

Circuit Breaker


DC/AC Inverter


Transformer


Current Transducer


Disconnect Switch


Fused Disconnect Switch


Fuse


Earth Ground

Adopted Codes

Adopted National Electrical Code Version:	2020
Adopted International Building Code Version:	2021
Adopted International Fire Code Version:	2015
Adopted International Mechanical Code Version:	2021
Adopted International Residential Code Version:	2021

ASCE/ANSI 7-10 Minimum Design Loads for Buildings and Other Structures

Authority Having Jurisdiction:	City of Crowley
Utility:	Cleco Power

Have a single labeled manual disconnect for the entire renewable facility at a service, approved by the utility on the outside (available to Cleco 24 hours a day with no notice).

Be able to synchronize with the utility and stay synchronized .

Have safety measures that prevent the generator from feeding electricity to the utility when the line is non-energized, or in an abnormal voltage or frequency situation or cause a degradation of the safety or quality of power on the electrical grid (i.e. UL1741 listed inverter).

Obtain all permits required by local authorities.

Abbreviations

Diameter or Phase	Ø
Amperes	A
Arc Fault Circuit Interrupter	AFCI
Amps Interrupting Capacity	AIC
Automatic Transfer Switch	ATS
American Wire Gauge	AWG
Circuit Breaker	BKR
Conduit	C
Combiner Box	CB
Current Transducer	CT
Circuit Breaker	CKT
Control Panel	CP
Copper	CU
Disconnect	DISCO
Equipment Grounding Conductor	EGC
Electric, Electrical	ELEC
Emergency	EMERG
Electrical Metallic Tubing	EMT
Equipment	EQUIP
Existing	EXIST
Ground	G, GND
Grounding Electrode Conductor	GEC
Ground-Fault Circuit Interrupter	GFCI
Ground-Fault Protection of Equipment	GFPE
High-Intensity Discharge (Lightning)	HID
Hertz	Hz
Intermediate Metallic Conduit	IMC
1000 Amps Interrupt Capacity	kAIC
1000 Circular Mils	kCMIL
Kilo-Volt Ampere	kVA
Kilowatt	kW
Lightning and Surge Arrestor	LA
Lightning	LTG
Long, Short, Instantaneous, and Ground Fault	LSIG
Maximum	MAX
Main Control Panel	MCP
Manufacturer	MFG
Main Lugs Only	MLO
Minimum	MIN
National Electrical Manufacturers Association	NEMA
Not To Scale	NTS
Pole	P
Power Factor	pf
Programmable Logic Controller	PLC
Primary	PRI
Polyvinyl Chloride	PVC
Power	PWR
Receptacle	RCPT
Rigid Galvanized Steel Conduit	RGS
Rigid Metal Conduit	RMC
Secondary	SEC
Short-Circuit Current Rating	SCCR
Surge Protection Device	SPD
Supply Side Bonding Jumper	SSBG
Switch	SW
To Be Determined	TBD
Typical	TYP
Volt	V
Volt-Ampere	VA
Watt	W
Weatherproof	WP
Transformer	XFMR

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

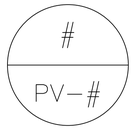
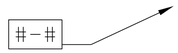
UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-1.1
Date: 09/15/2022	
Scale:	

LEGEND - GENERAL

———	LIGHT LINES INDICATE EXISTING OR BEYOND THE PROJECT SCOPE
———	DARK LINES INDICATE NEW OR WITHIN THE PROJECT SCOPE
- - - - - - - - - -	DASHED LINES INDICATE EQUIPMENT INSTALLED AT A LATER DATE
TEXT	LIGHT TEXT INDICATES EXISTING OR BEYOND THE PROJECT SCOPE
TEXT	DARK TEXT INDICATES NEW OR WITHIN THE PROJECT SCOPE

LEGEND - SYMBOLS/ANNOTATIONS

	REFERENCE NUMBER OR COUNT REFERENCE DRAWING OR PAGE
	ARRAY SECTION – STRING NUMBER
	STRING
	REFERENCED DRAWING OR SECTION
	REVISION CLOUD OR PENDING MORE INFORMATION
	NORTH INDICATOR

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

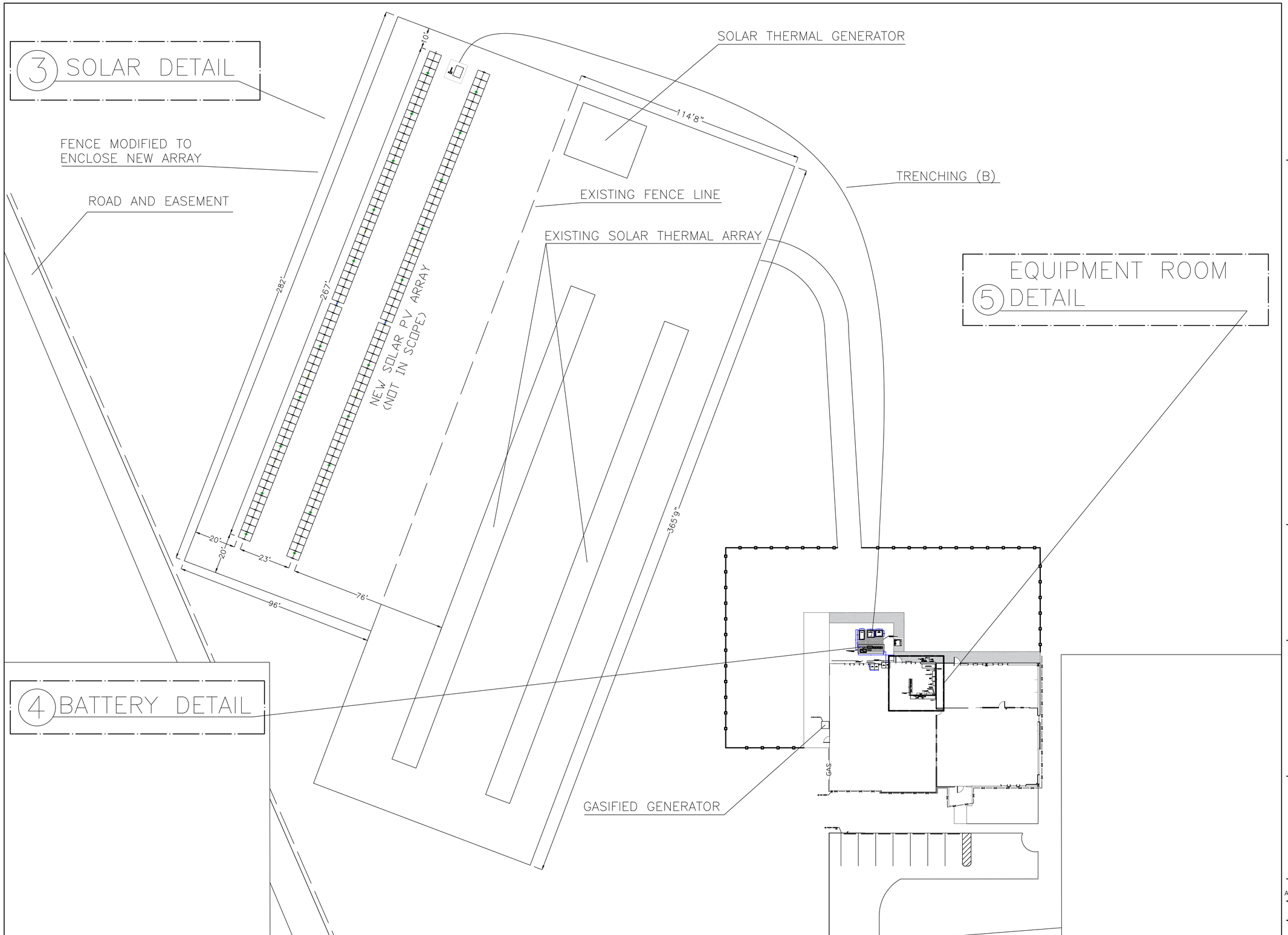
Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By Andrea Lee, Nick Boyd	Sheet PV–1.2
Date 09/15/2022	
Scale	

Reference



Site Plan

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

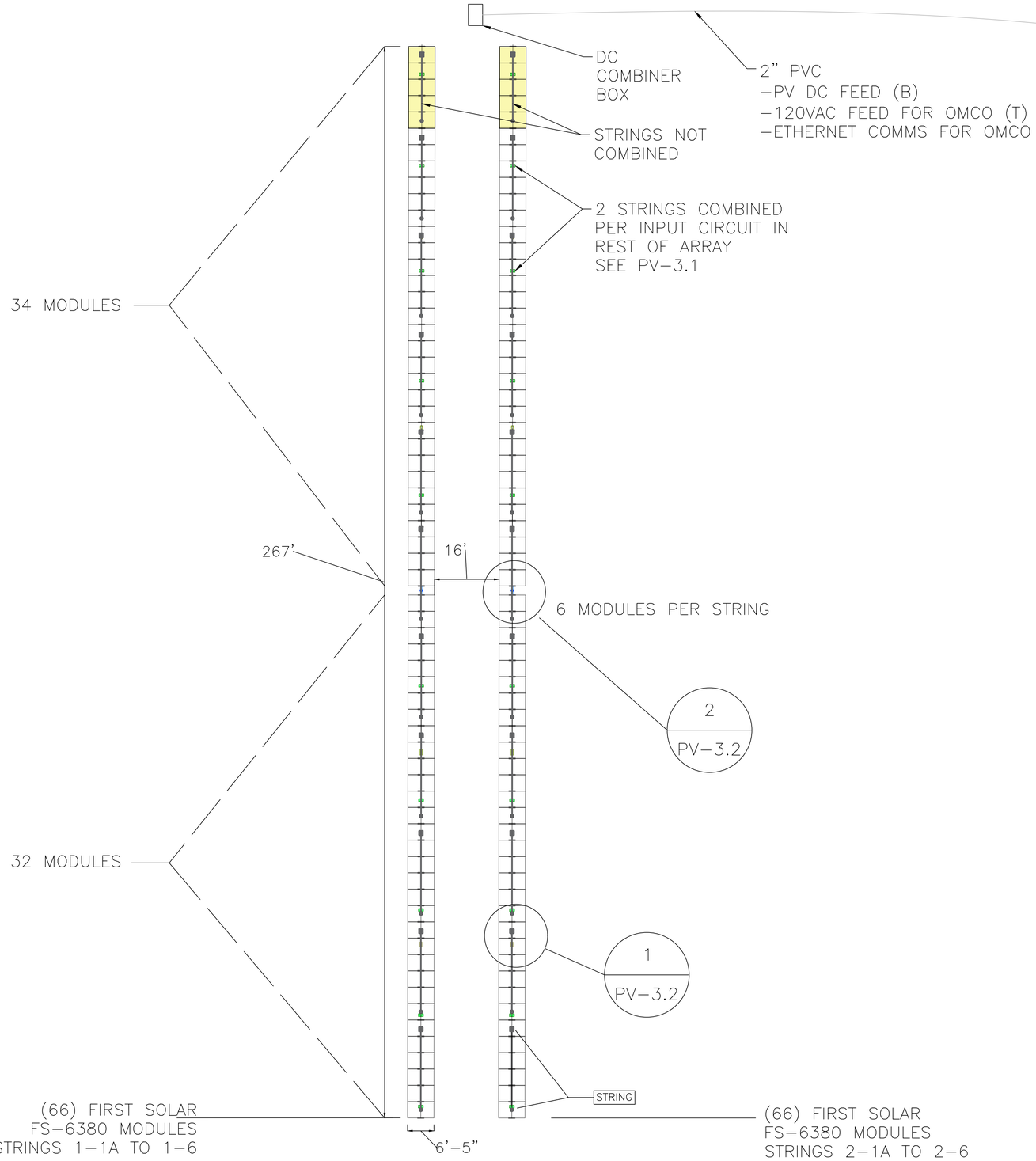
PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

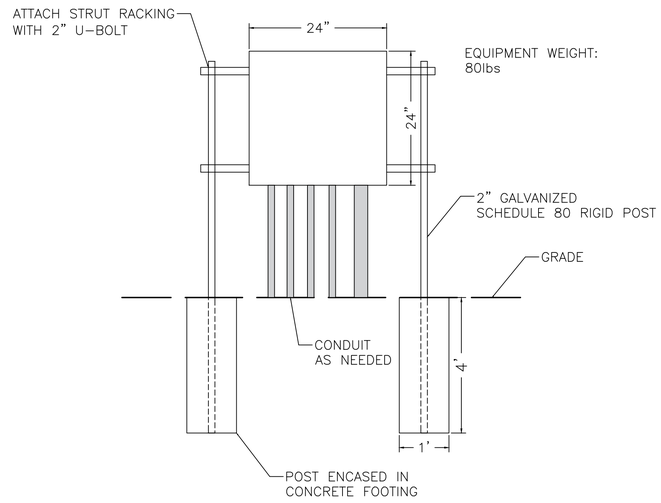
Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd
Date: 09/15/2022
Scale: N/A
Sheet: PV–2.0



1 DC COMBINER BOX RACK DETAIL



NOTE:

1. INSTALLATION OF RACKING AND MODULES BY OTHER CONTRACTOR (NOT IN SCOPE)
2. DRIVE AND PILE LOCATIONS ARE PER MANUFACTURERS INSTRUCTION
3. TWO HORIZONTAL SINGLE–AXIS TRACKERS
4. 66 PV MODULES AND 11 POSTS PER TRACKER
5. RANGE OF MOTION – 120°
6. ONE BRUSHED 24VDC MOTOR PER TRACKER

Solar Detail

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

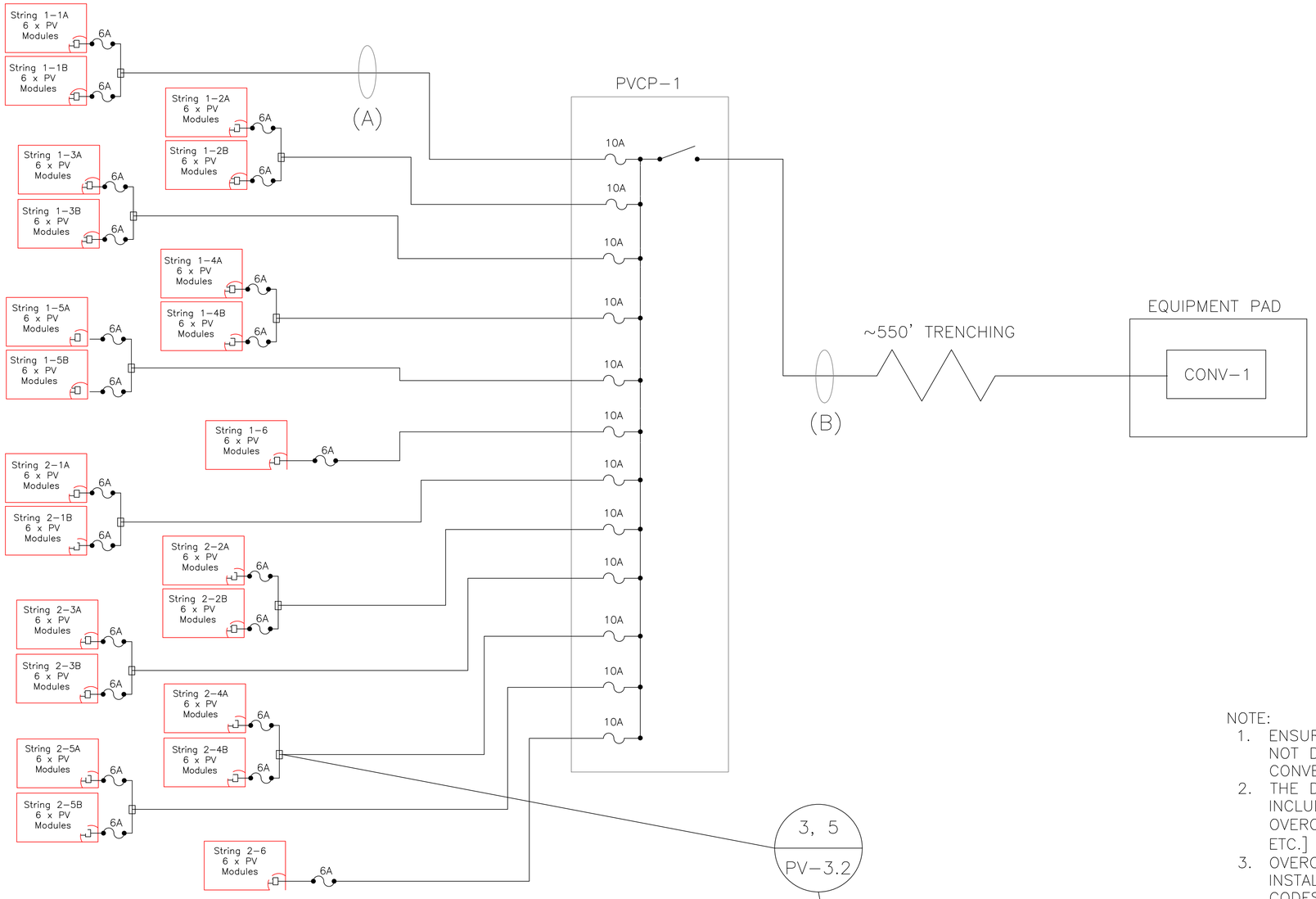
PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

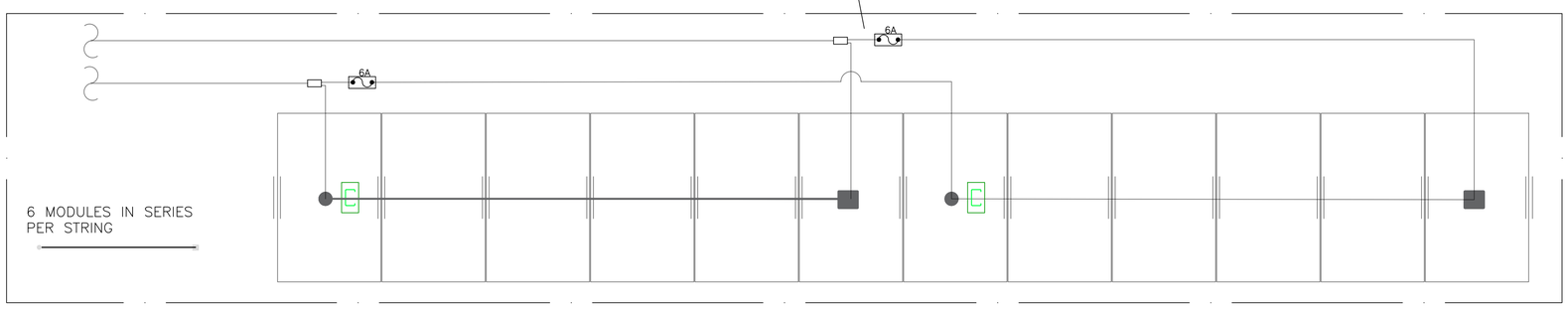
Drawn By: Andrea Lee, Nick Boyd	Sheet: PV–3.0
Date: 09/15/2022	
Scale: N/A	



NOTE:

1. ENSURE LARGE INRUSH CURRENTS ARE NOT DRAWN FROM THE DC–DC CONVERTER.
2. THE DC–DC CONVERTER DOES NOT INCLUDE ANY FUSING OR OTHER FORM OF OVERCURRENT PROTECTION [DISCONNECTS, ETC.]
3. OVERCURRENT PROTECTION MUST BE INSTALLED IN ACCORDANCE TO LOCAL CODES

TYPICAL STRING WIRING



String Plan

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

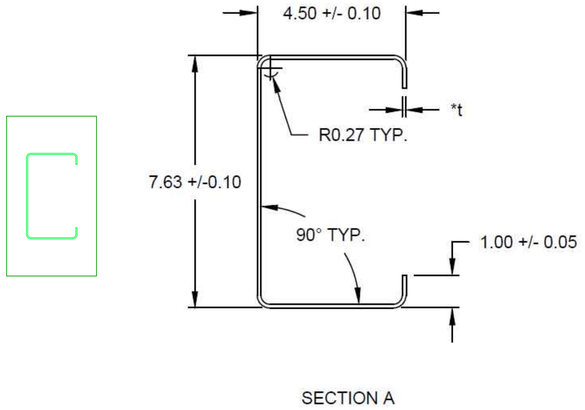
Drawn By
Andrea Lee, Nick Boyd

Date
09/15/2022

Scale
N/A

Sheet
PV–3.1

DRIVE POST



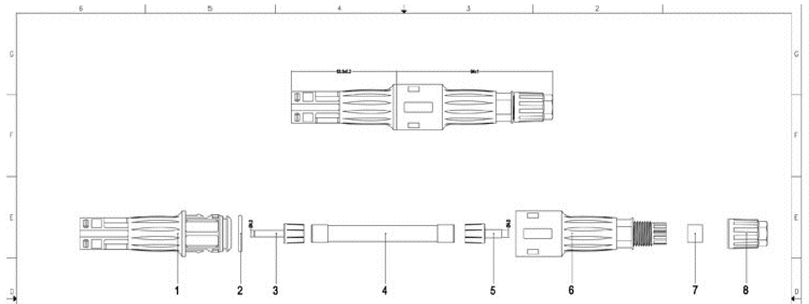
SECTION A

NOTES. GR50–MIN
GR235 GALVANIZED
DEPTH PER MANUFACTURER

1

IN–LINE PV FUSE

5



No.	Product No.	Product Name	Q'TY	Colour	Material
8	SY-TC4A-P01-00	Ø15 Turncap	1	Black	PPO
7	SY-TC4B-S01-00	Ø10.5*7.0 Waterproof Ring(For 4–6MM^2 Cable)	1	Black	Silicone
6	SY-CF0-15-P03	Ø4.0 Cable Male Connector Housing	1	Black	PPO
5	SY-CF3-15-M01	Ø4 Cable Terminal	1	White	Copper
4	SY-CF0-15-M01	FUSE 15A(Ø10x85mm)	1	White	Ceramic
3	SY-CF0-15-M01	Ø4 Male Terminal	1	White	Copper
2	SY-CF0-15-S01	Ø22*2*O* Ring	1	Red	Silicone
1	SY-CF0-15-P01	Ø4.0 Male Connector Housing	1	Black	PPO

Dimension	Tolerance
30.00–60.00	±0.05
60.00–90.00	±0.05
90.00–120.00	±0.05
120.00~	±0.05
Angle	
0~60°	±0.05
60°~	±0.05

LEADER TECHNOLOGY (SHENZHEN) CO.,LIMITED

APVD:

CHK:

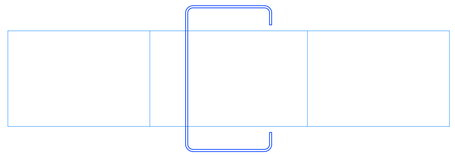
DWN:

NAME: 1500V MC4 Fuse Connector

PRODUCT NUMBER: SY-CF3-15

Units: Size: MM A4 | SCALE: | SHEET SLATT: 1 OF 1 | REV: A

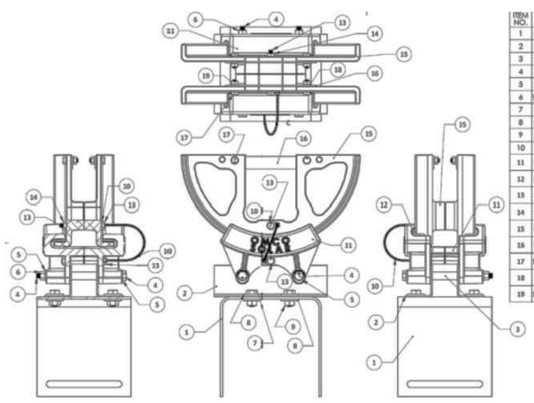
BEARING AND POST



NOTES. GR50–MIN
GR235 GALVANIZED
UL 3703

2

BEARING ASSEMBLY

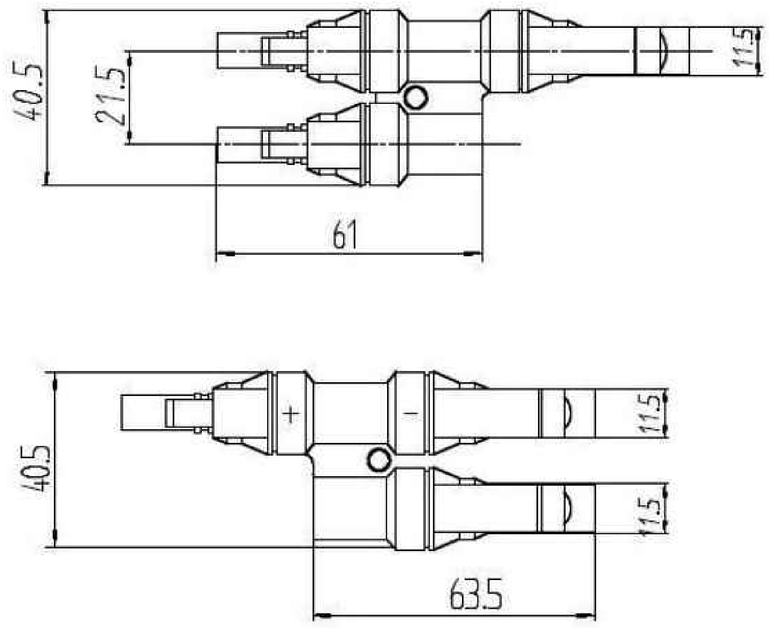


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	PCO-1000	POST CAP OPTIMIZED	1
2	LB-1000	L-BRACKET	2
3	S-1000	SLEEVE, MASTER	2
4	SIN/181230	M10 X 180 HEX HEAD BOLT	2
5	SIN/162726	M10 WASHER	4
6	SIN/131952	M10 HEX NUT	2
7	SIN/162696	M12 X 25 HEX HEAD BOLT	4
8	SIN/153859	1/2" USS WASHER	8
9	SIN/131959	M12 HEX NUT	4
10	19-166-00	GROUNDING JUMPER	1
11	BS-1000	BEARING SADDLE	2
12	BI-1000	BEARING INSERT	2
13	SIN/162703	M8 X 90 HEX HEAD BOLT	2
14	SIN/153963	M8 HEX NUT	2
15	BR-1000	BEARING RIM	2
16	HDS-1000	HOLD DOWN STRAP	2
17	SIN/181234	M8 X 30 HEX HEAD BOLT	4
18	SIN162731	M8 WASHER	8
19	SIN/153963	M8 HEX NUT	4

4

SEE "PV–10 EQUIPMENT SPECIFICATION"
FOR ADDITIONAL DETAILS

SOLAR BRANCH CONNECTORS



NOTES. PPO INSULATED
COPPER PLATED
20–50A, 1500VDC

3

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

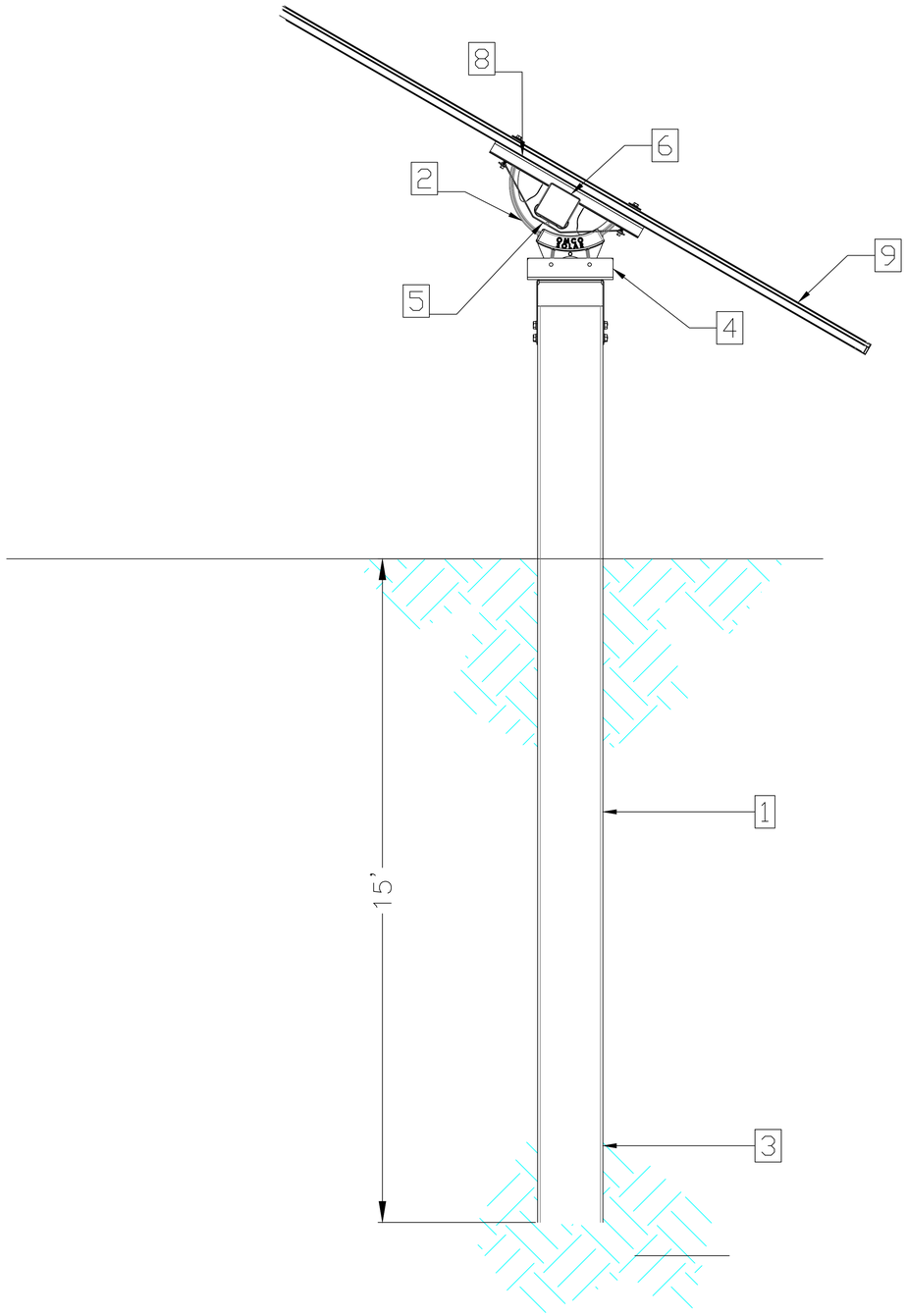
Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV–3.2
Date: 09/15/2022	
Scale: N/A	

FINAL ASSEMBLY



Item	Component	Purpose	Quantity Per Tracker
1	Drive Post	Mounts the Slew Drive and journal assemblies	1
2	Slew Drive and Motor	Rotates the tracker	1
3	Bearing Post	Mounts the bearing assemblies	Varies
4	Bearing Assembly	Allows the rotation of the torque tube	Varies
5	Journal Assembly	Connects the drive unit to torque tubes	2
6	Torque Tube	Connects all the module mounts together	Varies
7	Tracker Controller Unit	Provides power to motor / slew drive unit	1
8	Module Mount	Supports the PV modules	Varies
9	PV Modules	Generate power	Varies
10	Splice	Connects adjacent torque tubes	Varies
11	Damper and Damper Mount	Helps control tracker motion during high wind	Varies

Solar Components – OMCO SINGLE-AXIS TRACKER

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

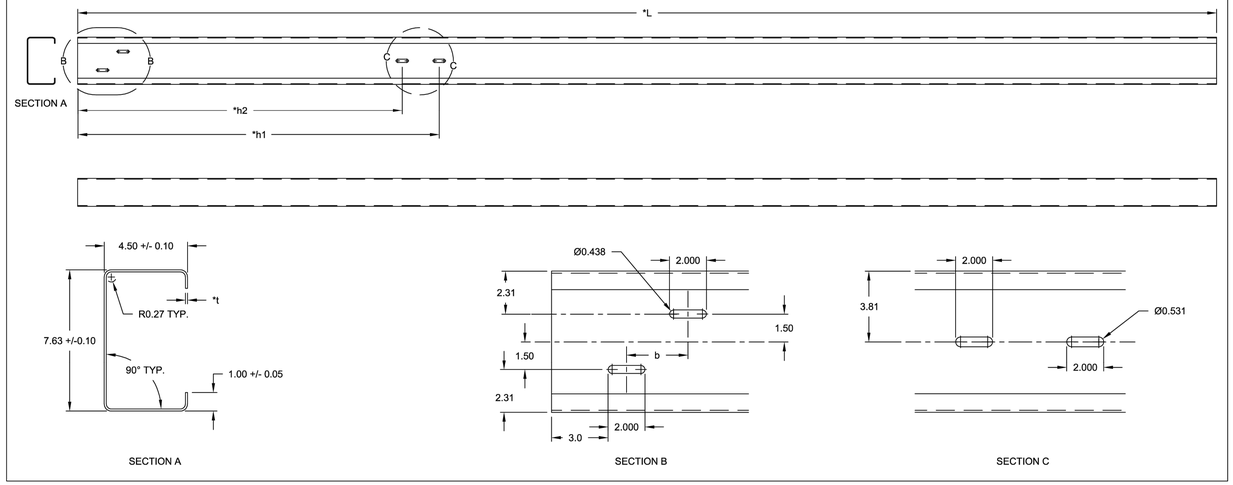
Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

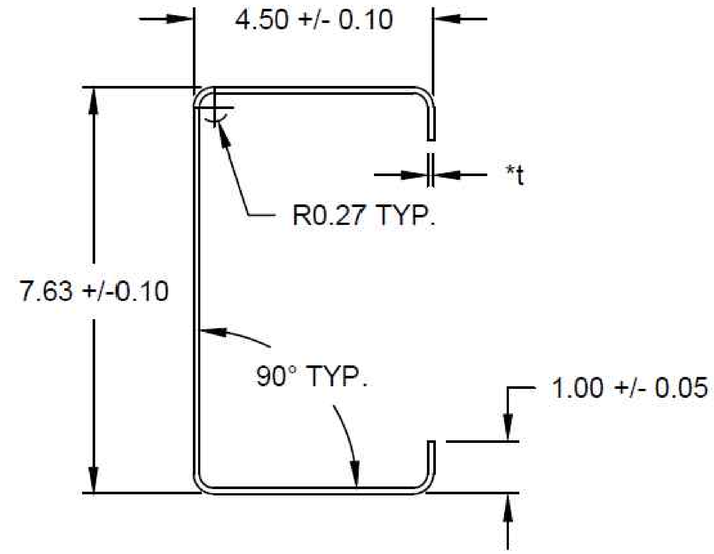
UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-3.3
Date: 09/15/2022	
Scale: N/A	

COMPLEXITY CHART							
PART NUMBER	THICKNESS (t)	SOUTH DIAG (h1)	NORTH DIAG (h2)	TILT SPACING (b)	LENGTH (L)	GALVANIZATION	MIN Fy / Fu (KSI)
P100-00	0.145	46.61	40.61	3.32	184.61	G235	57/70



NOTE:
FINAL LOAD TEST FOR FS SERIES 6 PV MODULES WILL DETERMINE THE OPTIMIZED 400MM SPACED BOLTING LOCATION PER MANUFACTURER



SECTION A

1 OMCO SINGLE-AXIS TRACKER – DETAIL

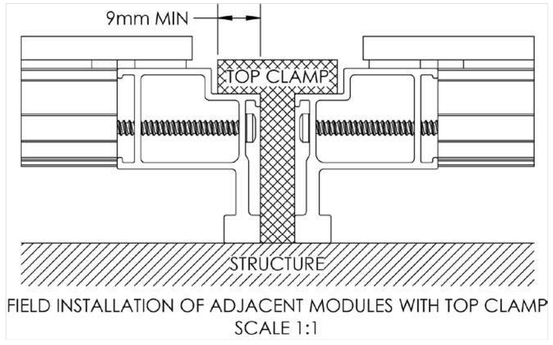


Figure 6: Shared Top Clamp Detail on Series 6 Modules

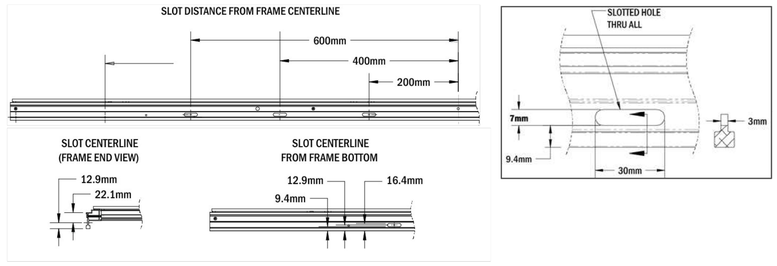


Figure 7: SpeedSlot Detail on Series 6 Module Long Edge Frame

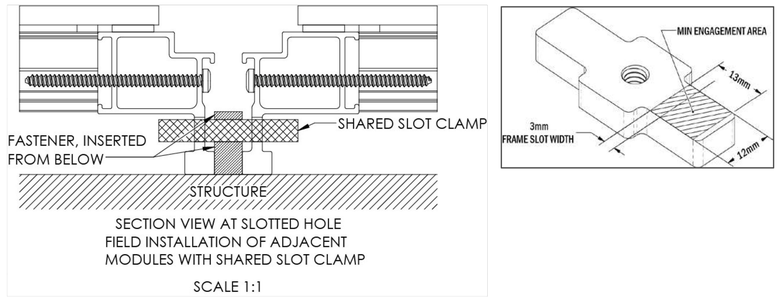


Figure 8: Shared SpeedSlot Clamp Detail on Series 6 Modules

2 PV MODULE TOP MOUNT – DETAIL

3 PV MODULE SPEEDSLOT MOUNT – DETAIL

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

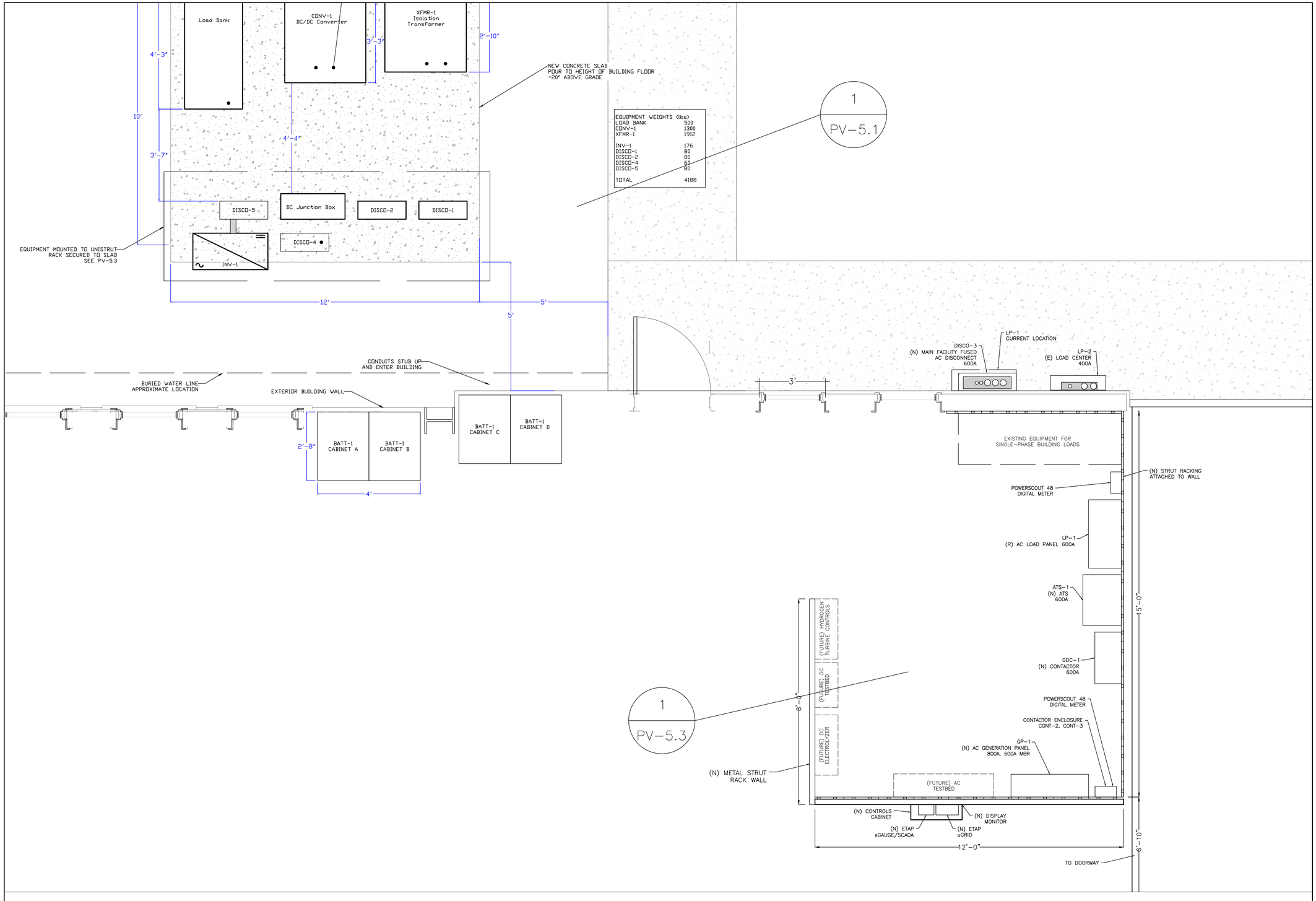
PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV–3.4
Date: 09/15/2022	
Scale: N/A	



Equipment Plan

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-5.0
Date: 09/15/2022	
Scale: N/A	

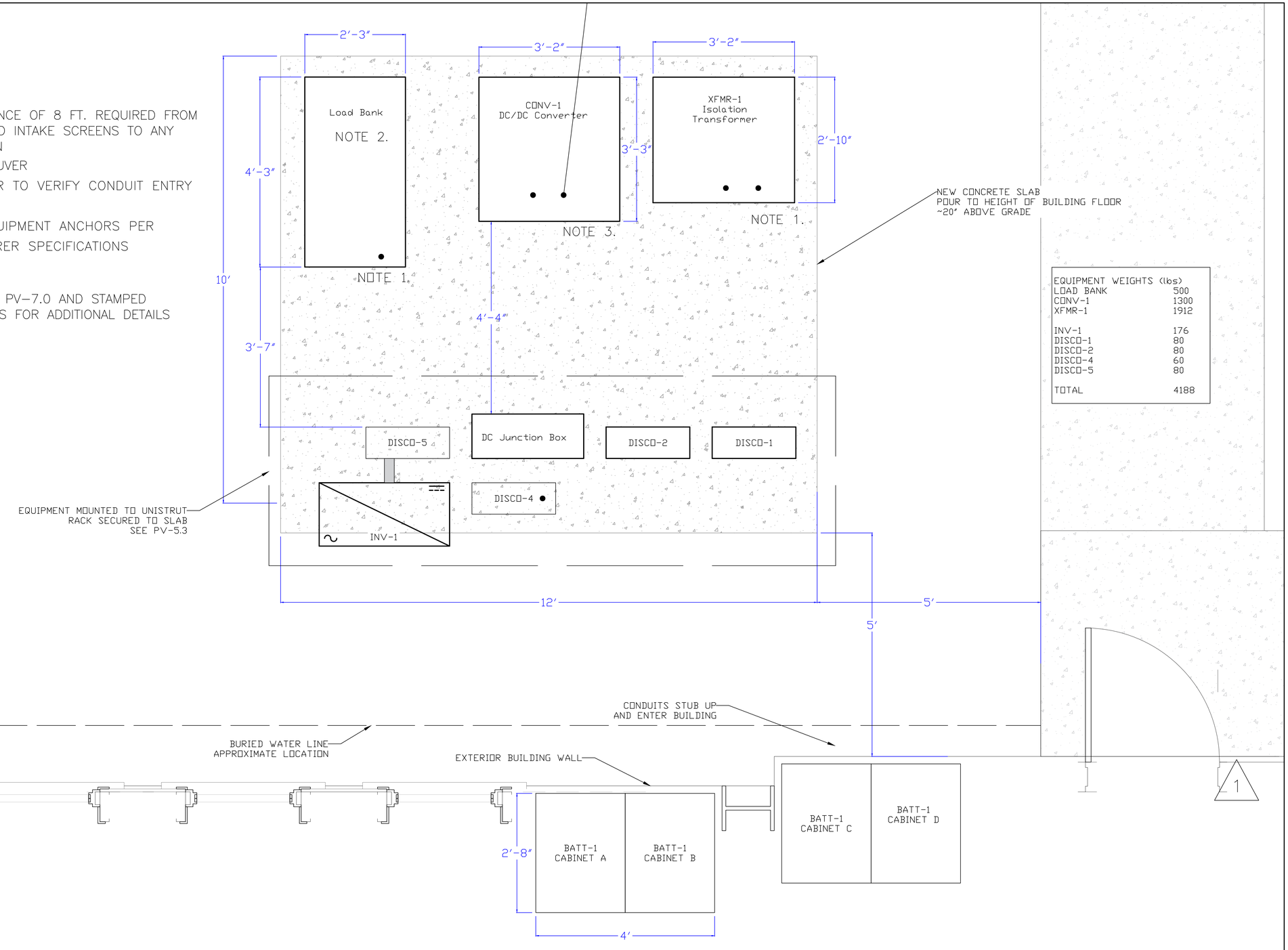
NOTE 1. MIN. CLEARANCE OF 8 FT. REQUIRED FROM EXHAUST AND INTAKE SCREENS TO ANY OBSTRUCTION

NOTE 2. EXHAUST LOUVER

NOTE 3. CONTRACTOR TO VERIFY CONDUIT ENTRY WINDOWS

NOTE 4. INSTALL EQUIPMENT ANCHORS PER MANUFACTURER SPECIFICATIONS

SEE PV-5.2, PV-5.3, PV-7.0 AND STAMPED STRUCTURAL PLANS FOR ADDITIONAL DETAILS



EQUIPMENT WEIGHTS (lbs)	
LOAD BANK	500
CONV-1	1300
XFMR-1	1912
INV-1	176
DISCO-1	80
DISCO-2	80
DISCO-4	60
DISCO-5	80
TOTAL	4188

Pad Layout

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

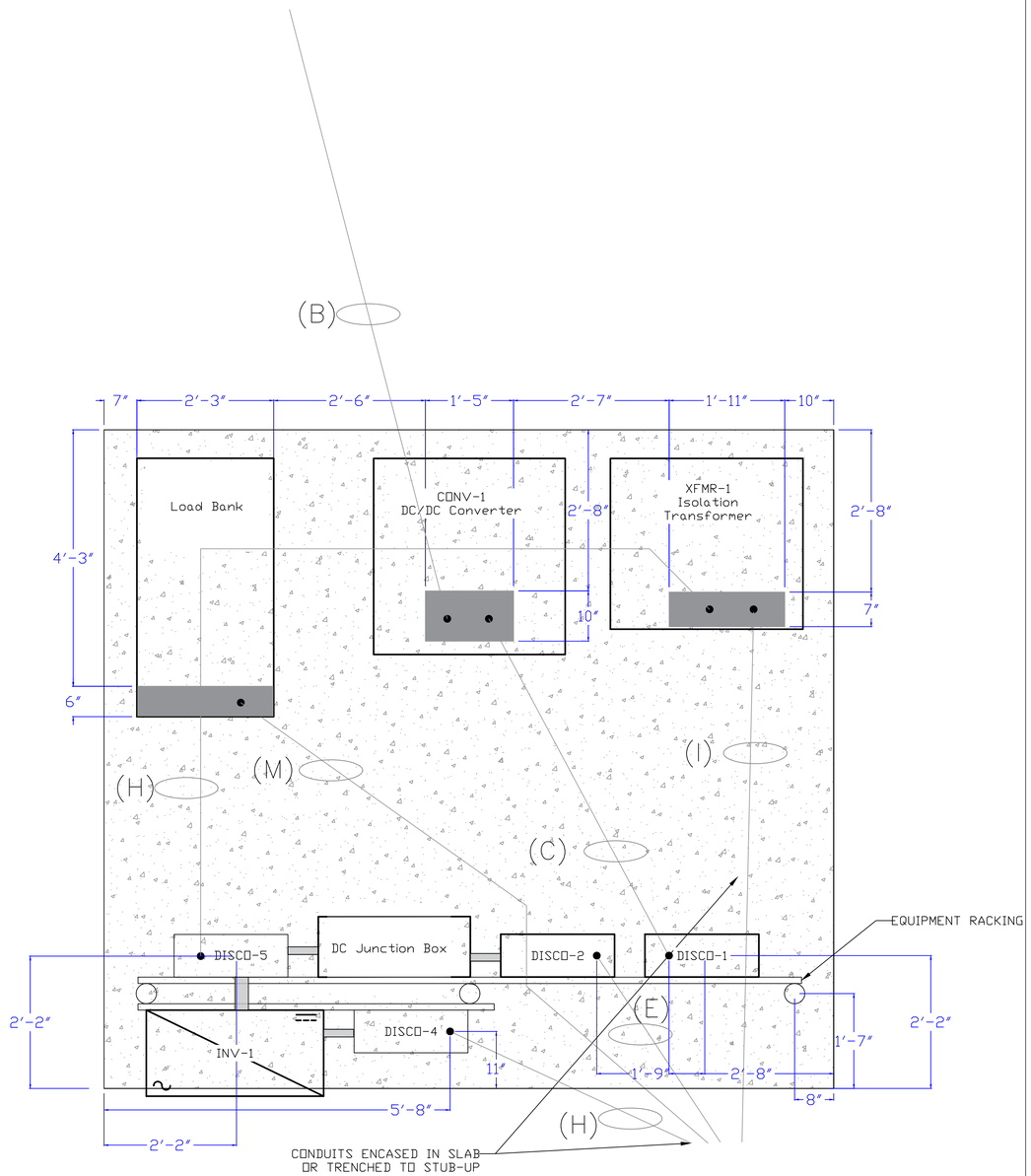
Drawn By
Andrea Lee, Nick Boyd

Date
09/15/2022

Scale
N/A

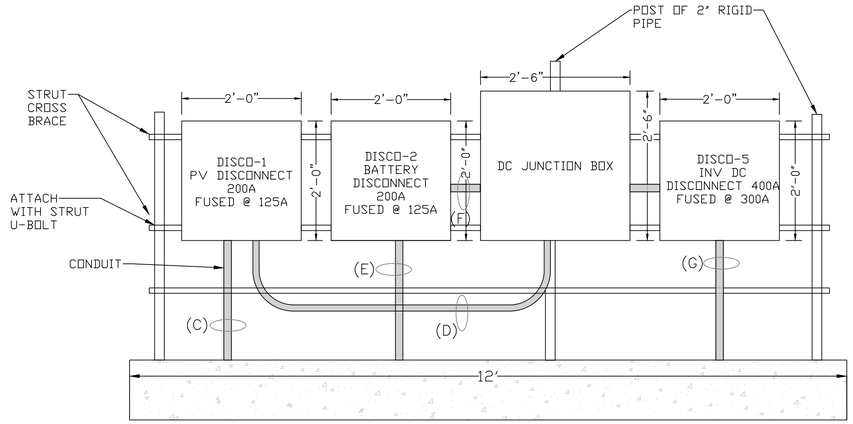
Sheet
PV-5.1

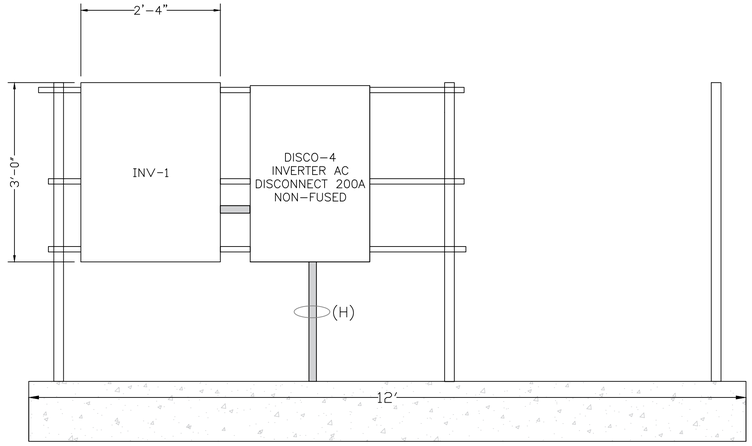
CONDUIT PLAN



SEE PV-5.1, PV-5.3, PV-7.0 AND STAMPED
STRUCTURAL PLANS FOR ADDITIONAL DETAIL

EQUIPMENT RACK ELEVATION





SEE PV-5.1, PV-5.3, PV-7.0 AND STAMPED
STRUCTURAL PLANS FOR ADDITIONAL DETAIL

PAD DETAILS

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

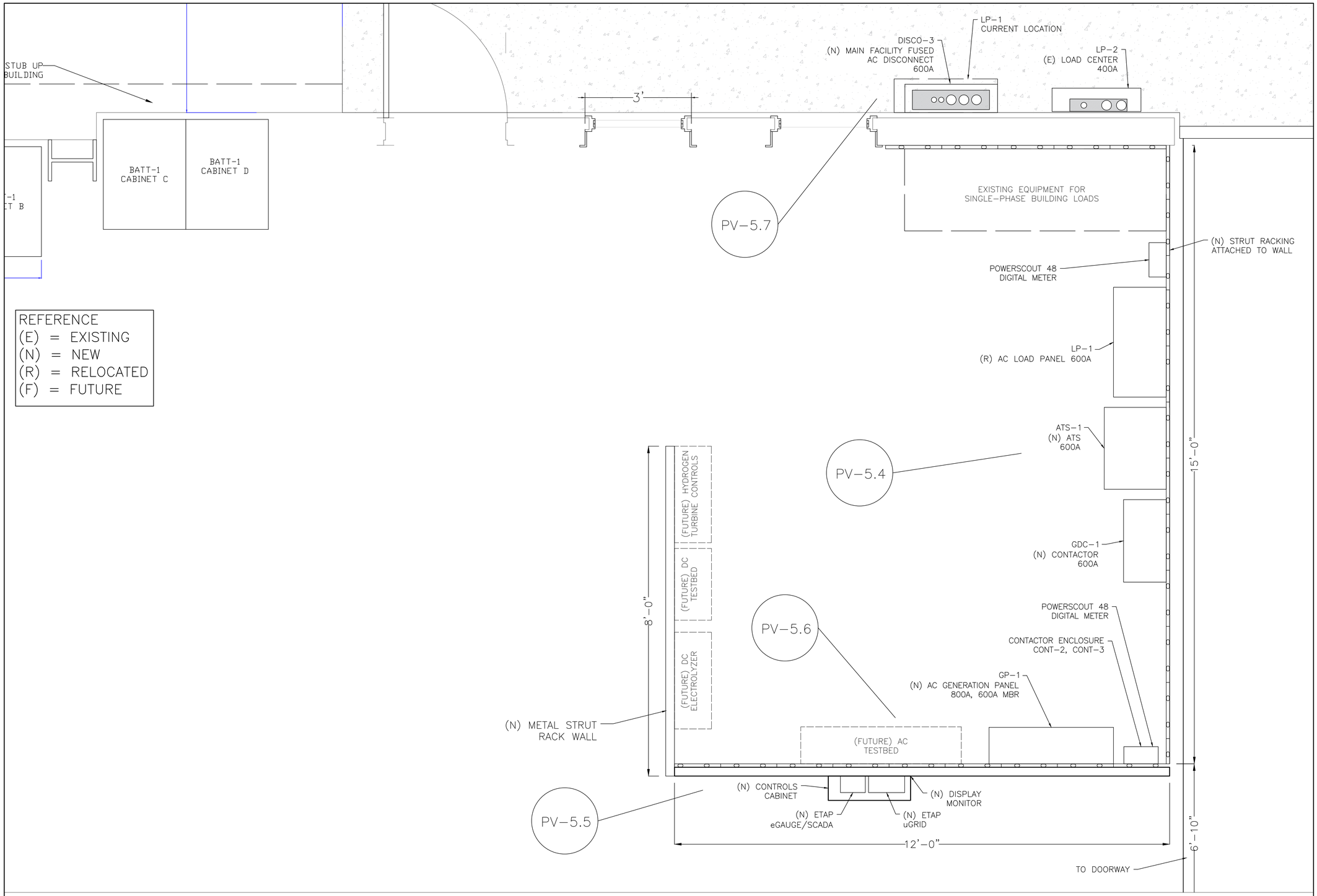
PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-5.2
Date: 09/15/2022	
Scale: N/A	



REFERENCE
(E) = EXISTING
(N) = NEW
(R) = RELOCATED
(F) = FUTURE

Equipment Room Detail

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

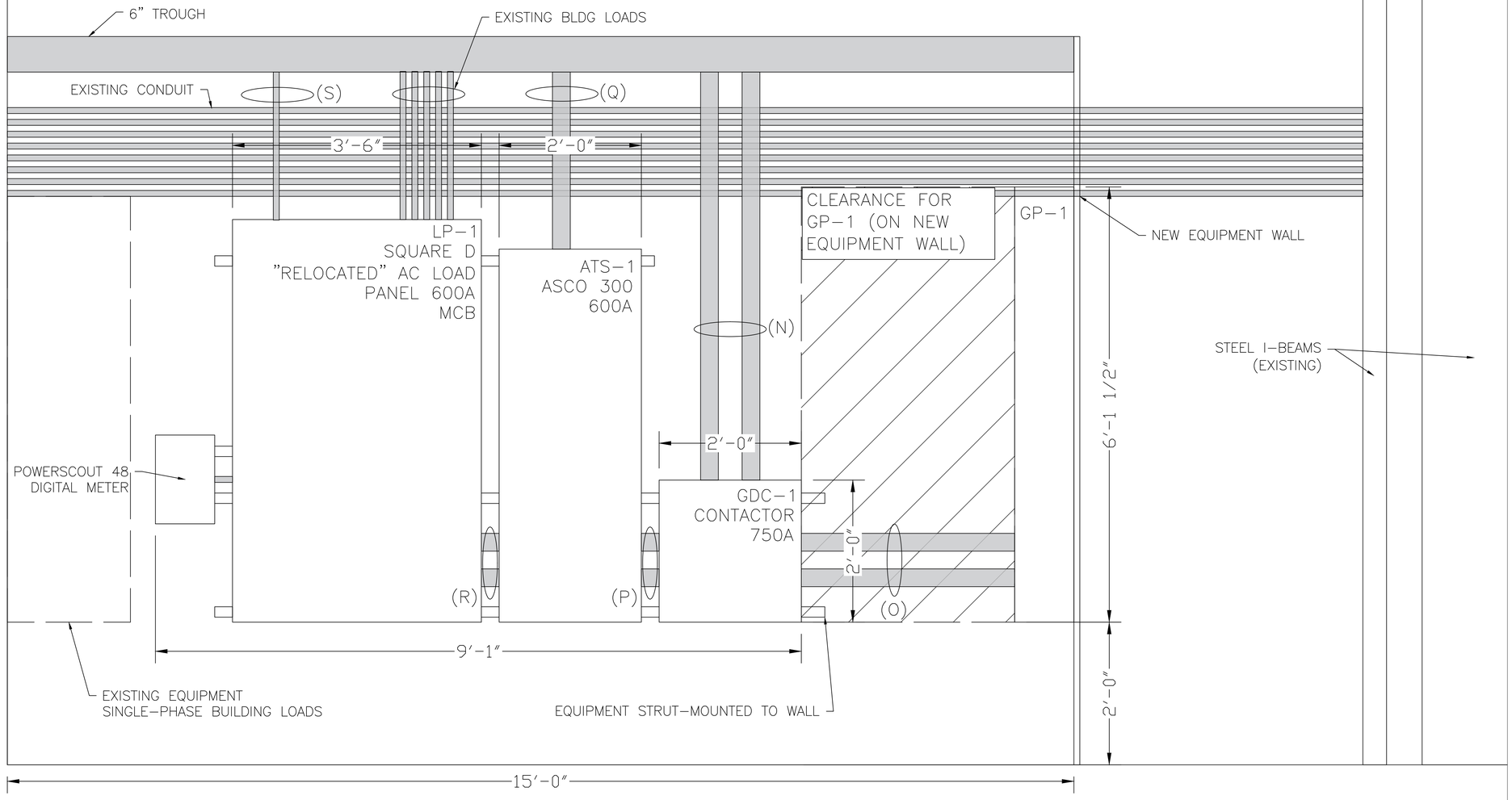
Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-5.3
Date: 09/15/2022	
Scale: N/A	

EAST WALL



Equipment Room Elevation

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

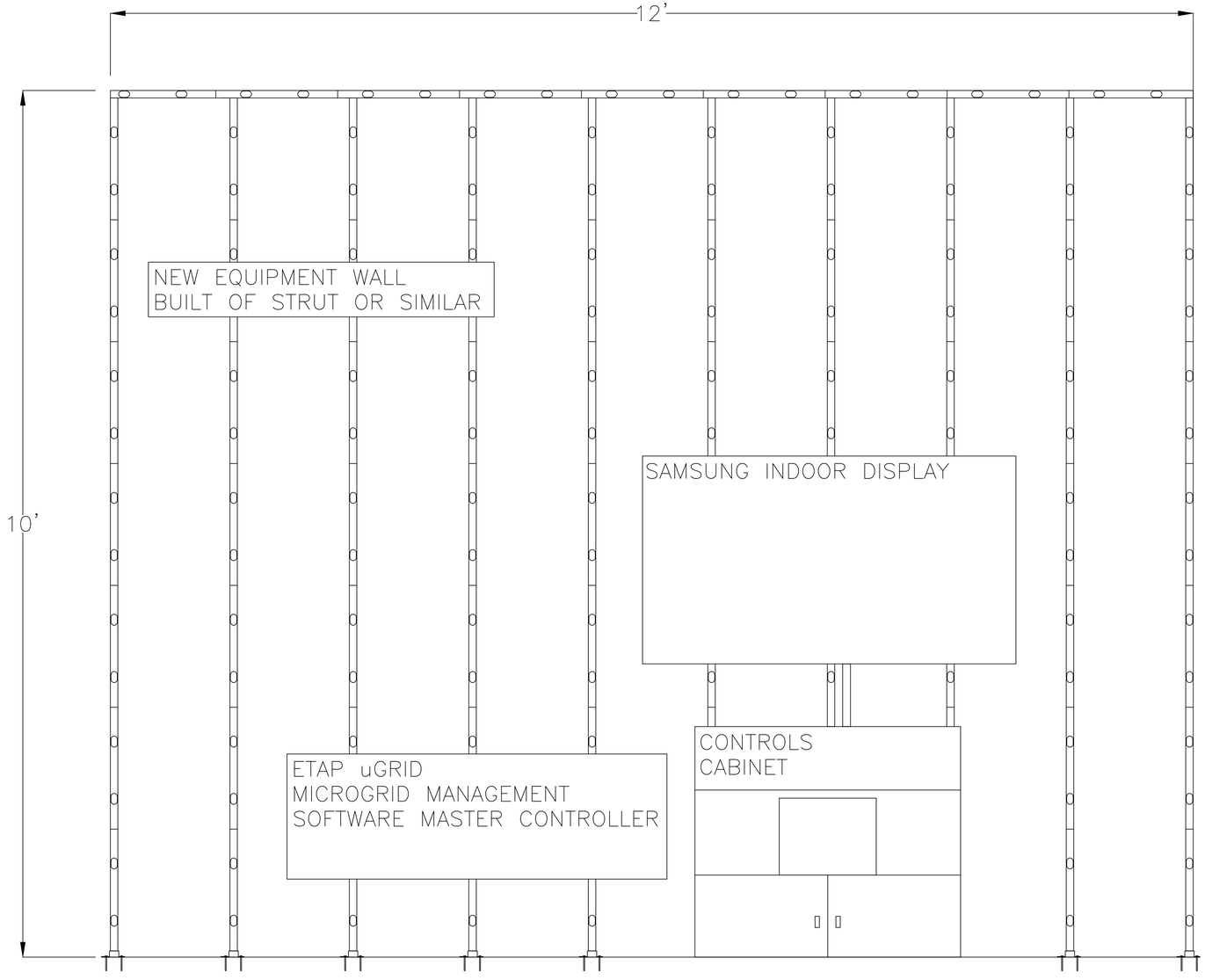
Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-5.4
Date: 09/15/2022	
Scale: N/A	

NEW EQUIPMENT WALL (SOUTH SIDE)



Equipment Room Elevation

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

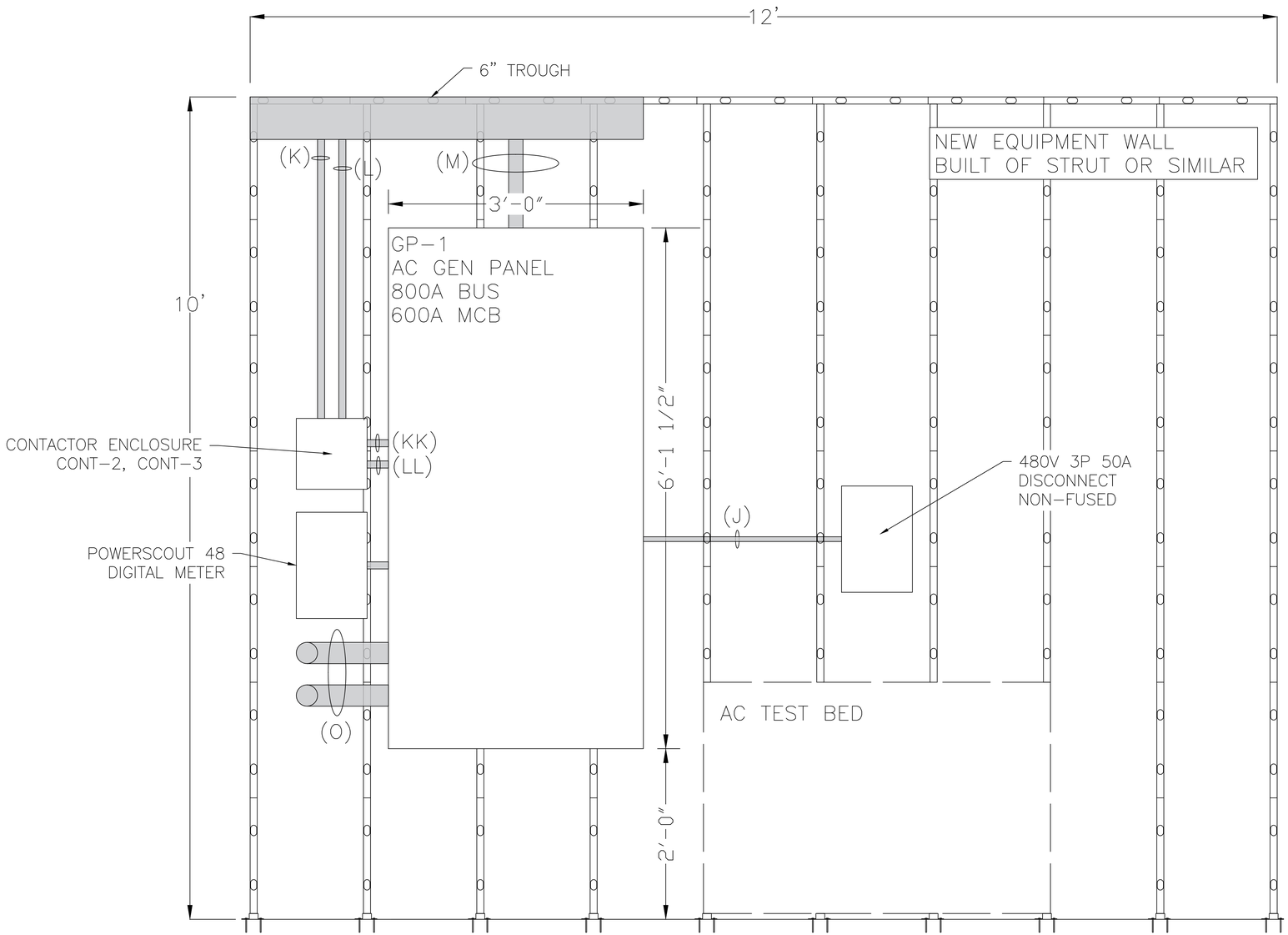
Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By	Sheet
Andrea Lee, Nick Boyd	PV-5.5
Date 09/15/2022	
Scale N/A	

NEW EQUIPMENT WALL (NORTH SIDE)



Equipment Room Elevation

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

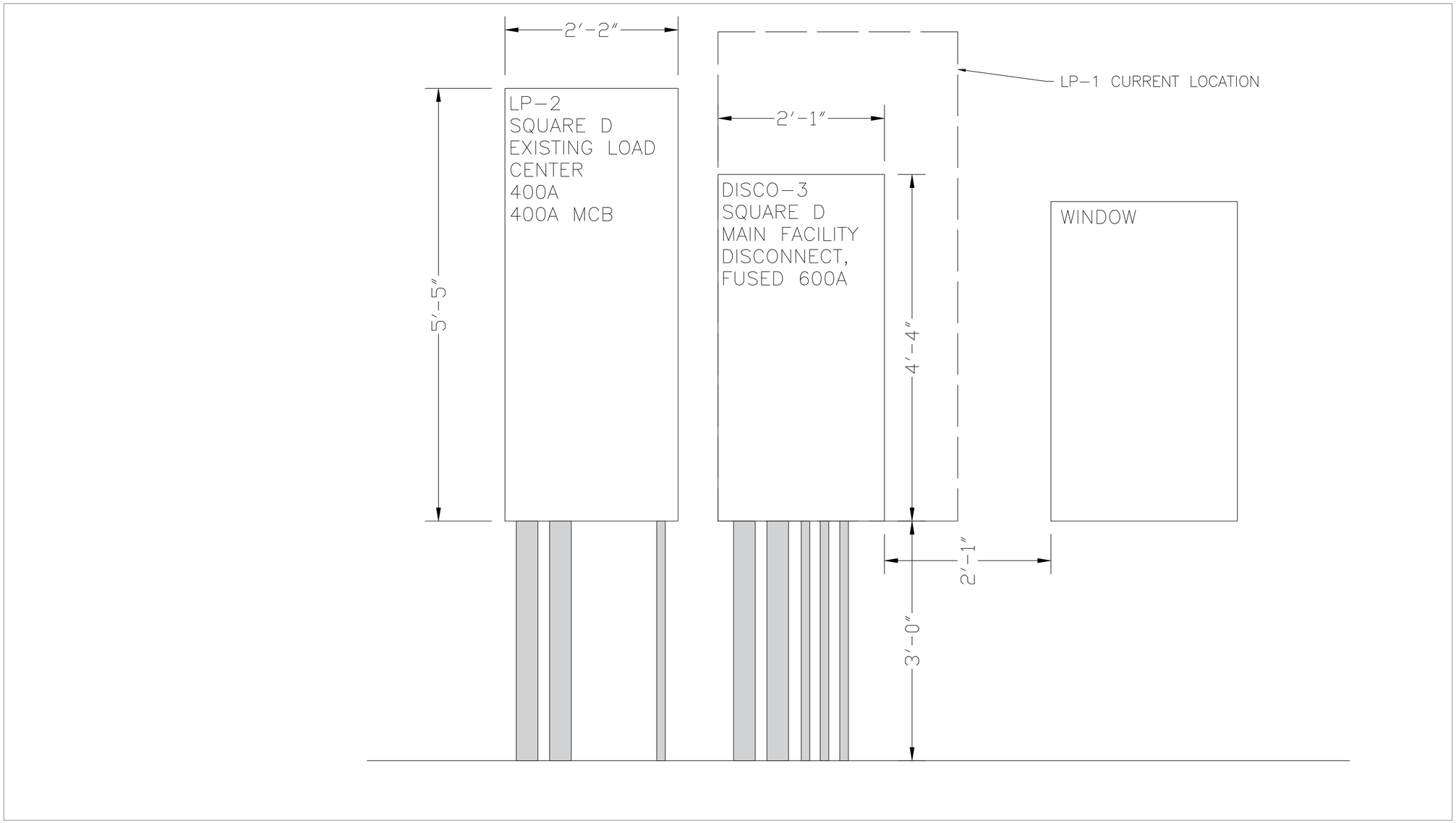
Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-5.6
Date: 09/15/2022	
Scale: N/A	

OUTDOOR WALL



Equipment Room Elevation

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

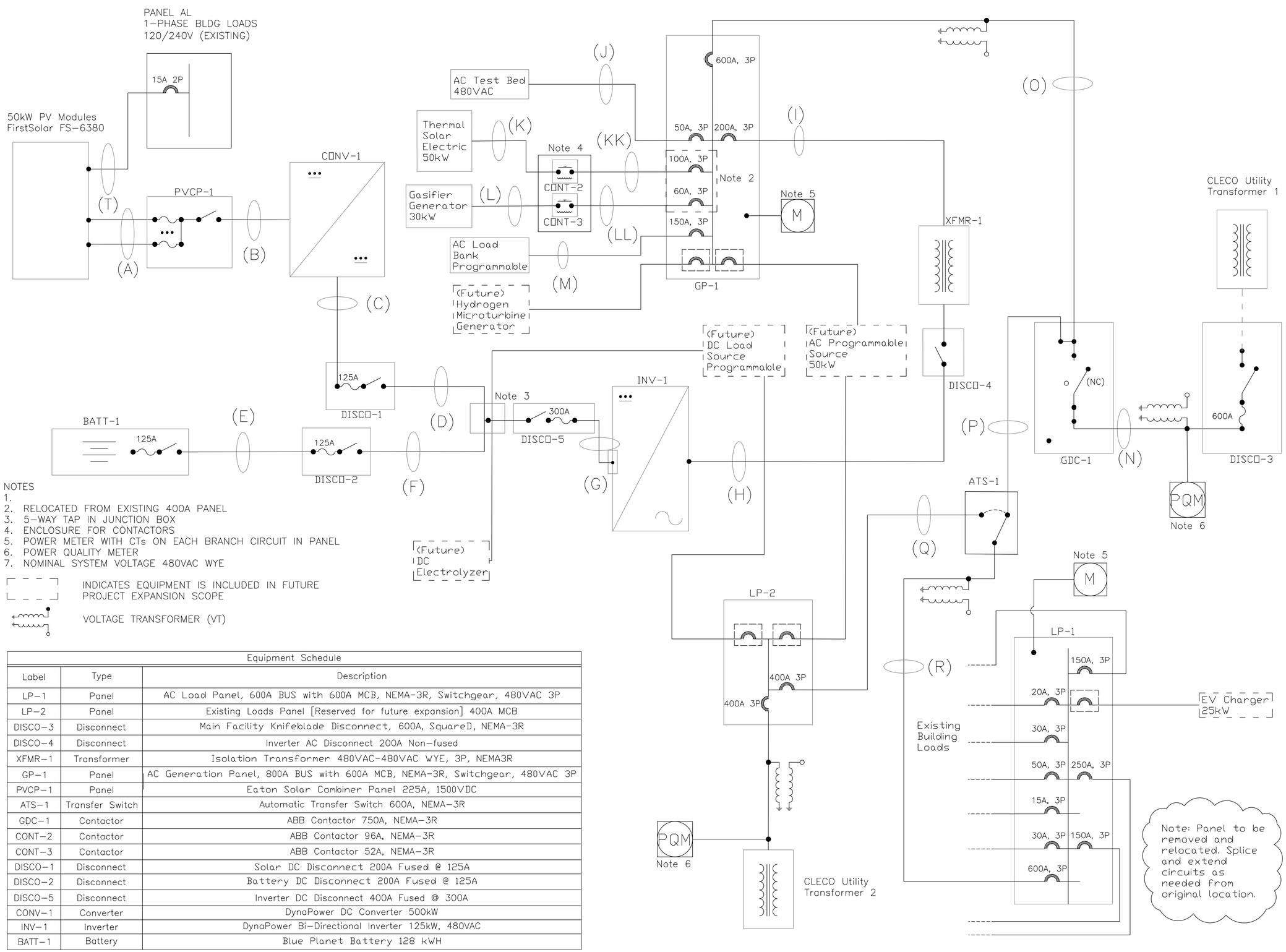
PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-5.7
Date: 09/15/2022	
Scale: N/A	



NOTES
1.
2. RELOCATED FROM EXISTING 400A PANEL
3. 5-WAY TAP IN JUNCTION BOX
4. ENCLOSURE FOR CONTACTORS
5. POWER METER WITH CTs ON EACH BRANCH CIRCUIT IN PANEL
6. POWER QUALITY METER
7. NOMINAL SYSTEM VOLTAGE 480VAC WYE

INDICATES EQUIPMENT IS INCLUDED IN FUTURE PROJECT EXPANSION SCOPE

VOLTAGE TRANSFORMER (VT)

Equipment Schedule		
Label	Type	Description
LP-1	Panel	AC Load Panel, 600A BUS with 600A MCB, NEMA-3R, Switchgear, 480VAC 3P
LP-2	Panel	Existing Loads Panel [Reserved for future expansion] 400A MCB
DISCO-3	Disconnect	Main Facility Knifeblade Disconnect, 600A, SquareD, NEMA-3R
DISCO-4	Disconnect	Inverter AC Disconnect 200A Non-fused
XFMR-1	Transformer	Isolation Transformer 480VAC-480VAC WYE, 3P, NEMA3R
GP-1	Panel	AC Generation Panel, 800A BUS with 600A MCB, NEMA-3R, Switchgear, 480VAC 3P
PVCP-1	Panel	Eaton Solar Combiner Panel 225A, 1500VDC
ATS-1	Transfer Switch	Automatic Transfer Switch 600A, NEMA-3R
GDC-1	Contactor	ABB Contactor 750A, NEMA-3R
CONT-2	Contactor	ABB Contactor 96A, NEMA-3R
CONT-3	Contactor	ABB Contactor 52A, NEMA-3R
DISCO-1	Disconnect	Solar DC Disconnect 200A Fused @ 125A
DISCO-2	Disconnect	Battery DC Disconnect 200A Fused @ 125A
DISCO-5	Disconnect	Inverter DC Disconnect 400A Fused @ 300A
CONV-1	Converter	DynaPower DC Converter 500kW
INV-1	Inverter	DynaPower Bi-Directional Inverter 125kW, 480VAC
BATT-1	Battery	Blue Planet Battery 128 kWH

Electrical Diagram

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-6.0
Date: 09/15/2022	
Scale: N/A	

Module Specifications: First Solar FS-6380A	
Nominal Power	380 W
TEMP CoEFF (VOC)	-0.35 %/°C
VMP	171.6 V
IMP	2.21 A
VOC	213.8 V
ISC	2.48 A
Height	79"
Width	49"
Depth	2"
Max Series Fuse	6 A
Max System Volt	1500 V

Inverter Specifications:	Dynapower MPS-125
Max DC Input Power	125 kW
Max DC Input Current	171 A
Max AC Output Power	125 kW
AC Output Current	80 A
Max DC Voltage	1500 V
DC Operating Voltage	740-1500 V
AC Nominal Voltage	480 VAC 3-Ph

String Max Voltage Calculation:

Voc temperature adjustment at -4°C =
1 - [βVoc * ΔT]/100
1 - [-0.35 %/°C * (25°C-(-4°C))]/100
1.0928

Voc @ -4°C =
Voc @ 25°C * temp adjustment factor
213.8 V * 1.0928
233.6406 V

Max String Length =
Max Voltage / Temp adjusted Voc
1500 V / 233.64 V
6.4 Modules = 6 Modules

Wire Schedule

Tag	Set	Qty	FLA	OCPD (A)	Size	Type	Ground	V	Length (ft)	Voltage Drop (%)	Conduit	Notes
A	21	22	7	10	CU #12	PV Wire	CU #12	1500	25-300	1.11	Free air	
B	1	2	93		CU 2/0	XHHW-2	CU #8	1500	550	0.59	2" PVC	
C	1	2	85	90	CU #2	XHHW-2	CU #8	1000	15		1" EMT	
D	1	2	85	90	CU #2	XHHW-2	CU #8	1000	15		1" EMT	
E	1	2	150	125	CU #1	XHHW-2	CU #6	1000	30		1-1/4" EMT	
F	1	2	125	125	CU #1	XHHW-2	CU #6	1000	30		1-1/4" EMT	
G	1	2	215	225	CU 4/0	XHHW-2	CU #4	1000	10		2" EMT	
H	1	3	200	200	CU 2/0	THHN	CU #6	480	30		2" EMT	
I	1	3	200	200	CU 2/0	THHN	CU #6	480	100		2" EMT	
J	1	4	50	50	CU #8	THHN	CU #10	480	50		3/4" EMT	
K	1	4	100	100	CU #2	THHN	CU #8	480	300		1" EMT	Note 1
KK	1	4	100	100	CU #2	THHN	CU #8	480	5		1" EMT	
L	1	4	60	60	CU #6	THHN	CU #10	480	200		1" EMT	Note 1
LL	1	4	60	60	CU #6	THHN	CU #10	480	5		1" EMT	
M	1	4	150	150	CU 2/0	THHN	CU #6	480	100		2" EMT	
N	3	4	600	600	CU 3/0	THHN	CU #1	480	10		(2) 3" EMT	
O	3	4	600	600	CU 3/0	THHN	CU #1	480	40		(2) 3" EMT	
P	3	4	600	600	CU 3/0	THHN	CU #1	480	15		(2) 3" EMT	
Q	2	4	400	400	CU 3/0	THHN	CU #2	480	40		3" EMT	
R	3	4	600	600	CU 3/0	THHN	CU #1	480	20		(2) 3" EMT	
T	1	3	7	15	CU #8	THHN	CU #12	240	550	2.57	2" PVC	

Notes
1. EXISTING CONDUCTORS. EXTEND FEEDERS TO RELOCATE BREAKERS TO NEW PANEL. MATCH NEW CONDUCTORS & CONDUIT TO EXISTING

Electrical Calculations

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

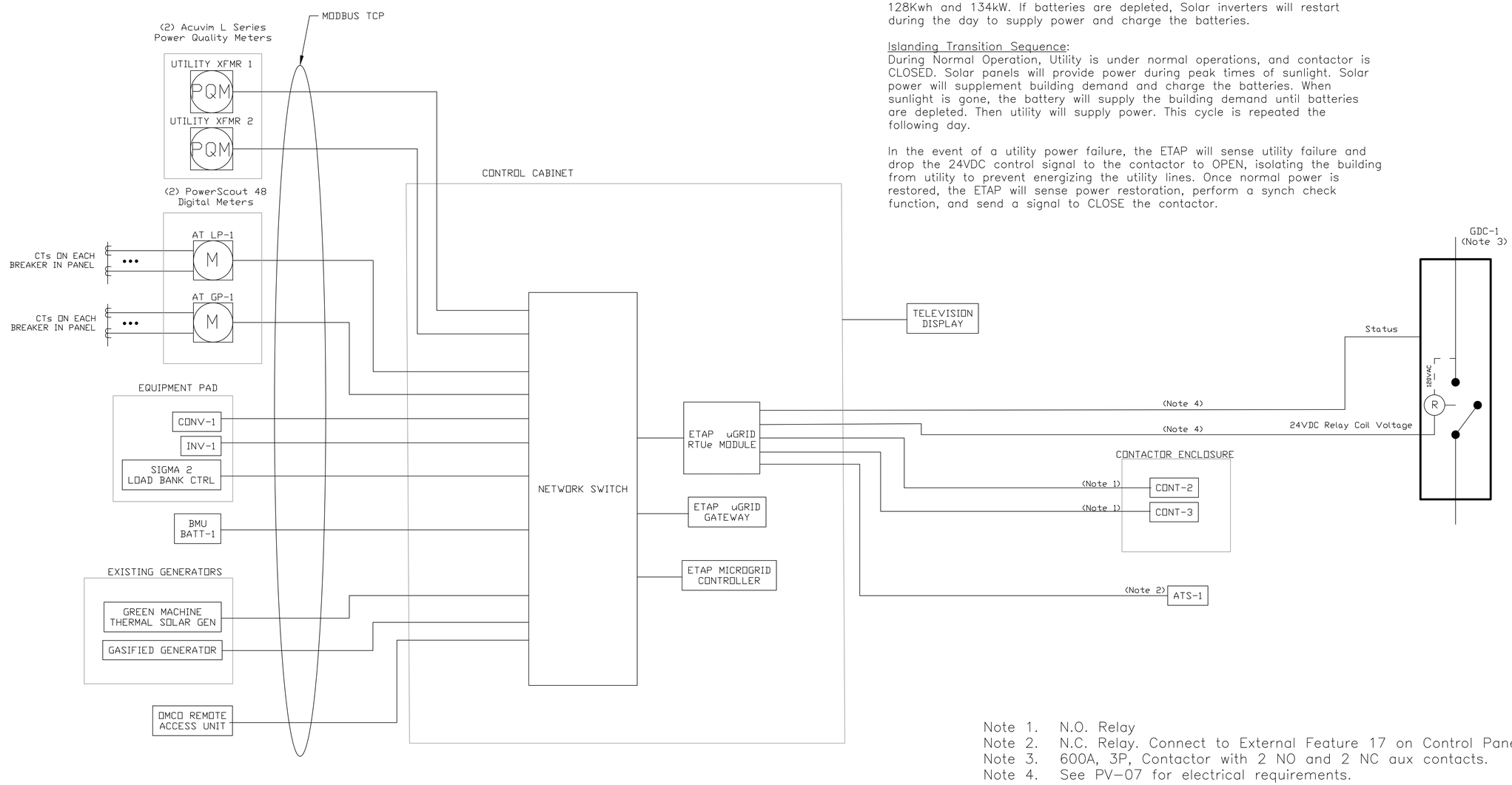
PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd
Date: 09/15/2022
Scale: N/A
Sheet: PV-7.0



On Grid Operation: During the daytime, the Solar power will supplement utility power to feed the building demand. Batteries will be tied to the system for charging during daytime hours. When Solar power is unavailable, stored battery power will supplement building demand. Once battery power is depleted, utility power will supply the building demand load. Cycle is repeated when sun rises the following day. In this operation, a 24VDC signal will hold the contactor in the CLOSED position.

Off Grid Operation: In the event of utility failure, the ETAP will sense utility failure and will drop the 24VDC signal and OPEN the contactor preventing utility back feed. The building will be supplied from solar inverters and the batteries until and unless batteries are depleted. Batteries are rated for 128Kwh and 134kW. If batteries are depleted, Solar inverters will restart during the day to supply power and charge the batteries.

Islanding Transition Sequence:
During Normal Operation, Utility is under normal operations, and contactor is CLOSED. Solar panels will provide power during peak times of sunlight. Solar power will supplement building demand and charge the batteries. When sunlight is gone, the battery will supply the building demand until batteries are depleted. Then utility will supply power. This cycle is repeated the following day.

In the event of a utility power failure, the ETAP will sense utility failure and drop the 24VDC control signal to the contactor to OPEN, isolating the building from utility to prevent energizing the utility lines. Once normal power is restored, the ETAP will sense power restoration, perform a synch check function, and send a signal to CLOSE the contactor.

Note 1. N.O. Relay
Note 2. N.C. Relay. Connect to External Feature 17 on Control Panel
Note 3. 600A, 3P, Contactor with 2 NO and 2 NC aux contacts.
Note 4. See PV-07 for electrical requirements.

Communications Diagram

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

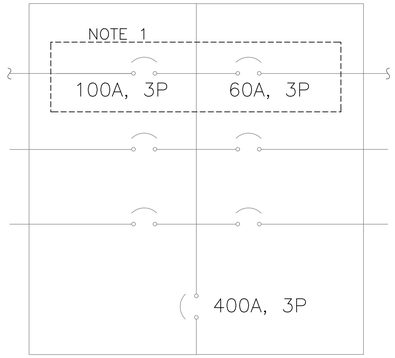
Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV-8.0
Date: 09/15/2022	
Scale: N/A	

EXISTING

LP–2
EXISTING OUTPUT SERVICE PANEL
480V, 3P, 4W
400A MCB

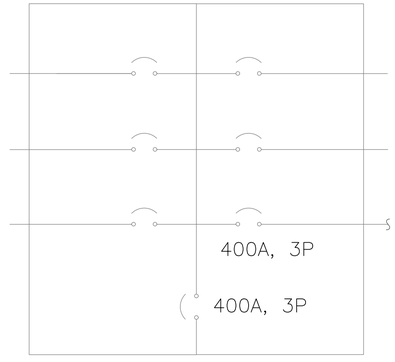


LP–2 Existing Output Service Panel Schedule												
Panel Voltage	480		Fed From	Secondary Transformer [500kVA, 3P]				Manufacturer/Model	Square D / I–Line HCN14654M			
Panel Phase/Wire	3P/4W		Panel Type	MCB				Note: Panel to be abandoned with all circuits removed.				
Amp Rating	400		Location /Mounting	Outside/Surface								
CCT No.	Load Type	OCPD	Wire	Conduit	Phase A	Phase B	Phase C	Conduit	Wire	OCPD	Load Type	CCT No.
1	ORC Generator	100	(3) #3 W/G	1'–1/4"	X			1"	(3) #6 W/G	60	Gas Generator	2
3												4
5												6

NOTES
1. CIRCUITS RELOCATED TO GP–1

PLANNED

LP–2
EXISTING OUTPUT SERVICE PANEL
480V, 3P, 4W
400A MCB



LP–2 Existing Output Service Panel Schedule												
Panel Voltage	480		Fed From	Secondary Transformer [500kVA, 3P]				Manufacturer/Model	Square D / I–Line HCN14654M			
Panel Phase/Wire	3P/4W		Panel Type	MCB				Note: Panel to be abandoned with all circuits removed.				
Amp Rating	400		Location /Mounting	Outside/Surface								
CCT No.	Load Type	OCPD	Wire	Conduit	Phase A	Phase B	Phase C	Conduit	Wire	OCPD	Load Type	CCT No.
1												2
3												4
5								3"	(8) #2 W/G	400	Secondary Service	6

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By
Andrea Lee, Nick Boyd

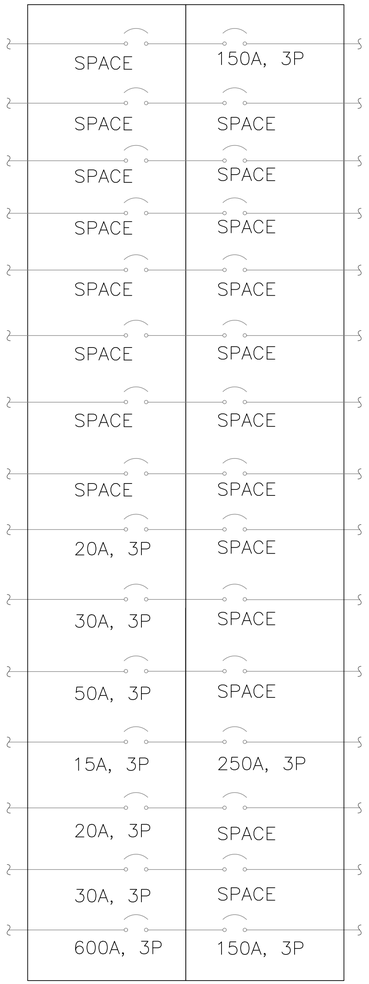
Date
09/15/2022

Scale
N/A

Sheet
PV–9.0

EXISTING

LP–1
EXISTING LOAD PANEL, RELOCATED
480V, 3P, 4W 600A MCB



M

Panel Voltage	480		Fed From	Secondary Transformer [500kVA, 3P]				Manufacturer/Model		Square D / I–Line HCP 11253		
Panel Phase/Wire	3P/4W		Panel Type	MCB				Note: Panel to be disconnected carefully and relocated into the building, hung on adjacent wall, and labeled "AC Load Panel"				
Amp Rating	600		Location /Mounting	Outside/Surface								
CCT No.	Load Type	OCPD	Wire	Conduit	Phase A	Phase B	Phase C	Conduit	Wire	OCPD	Load Type	CCT No.
1	Space				X			1'–1/4"	(3) #2 W/G	150	Transformer (75kVA, 120/208)	2
3	"					X					"	4
5	"						X				"	6
7	Space				X						Space	8
9	"					X					"	10
11	"						X				"	12
13	Space				X						Space	14
15	"					X					"	16
17	"						X				"	18
19	Lab AH	20	(3) #12 W/G	1/2"	X						Space	20
21	"					X					"	22
23	"						X				"	24
25	Office AH	30	(3) #10 W/G	3/4"	X						Space	26
27	"					X					"	28
29	"						X				"	30
31	Lab AH – Hood Unit	50	(3) #8 W/G	3/4"	X						Space	32
33	"					X					"	34
35	"						X				"	36
37	Compressor	15	(3) #12 W/G	1/2"	X			2'–1/4"	(4) 250 MCM W/G	250	Panel "AH"	38
39	"					X					"	40
41	"						X				"	42
43	Compressor	20	(3) #12 W/G	1/2"	X						Space	44
45	"					X					"	46
47	"						X				"	48
49	Compressor	30	(3) #10 W/G	1/2"	X						Space	50
51	"					X					"	52
53	"						X				"	54
55	Main	600	(4) #3 W/G	3/4"	X			1'–1/4"	(3) #2 W/G	150	unknown	56
57	"					X					"	58
59	"						X				"	60

Panelboards

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

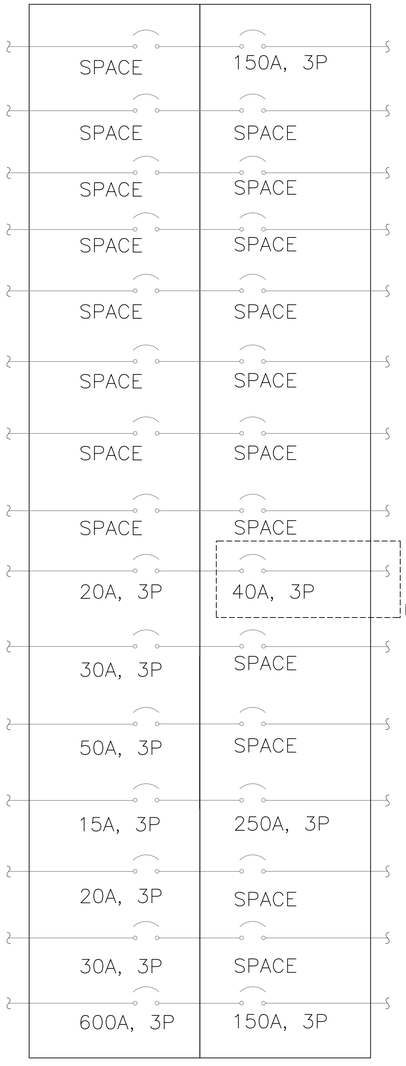
Project Name and Address

UNIVERSITY OF LOUISIANA AT
LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd
Date: 09/15/2022
Scale: N/A
Sheet: PV–9.1

PLANNED

LP–1
EXISTING LOAD PANEL, RELOCATED
480V, 3P, 4W 600A MCB



New AC Load Panel "LP–600" Schedule

Panel Voltage	480		Fed From	Secondary Transformer [500kVA, 3P]				Manufacturer/Model		Square D / I–Line HCP 11253		
Panel Phase/Wire	3P/4W		Panel Type	MCB				Note: Former "Input Service" Panel.				
Amp Rating	600		Location /Mounting	Inside/Surface								
CCT No.	Load Type	OCPD	Wire	Conduit	Phase A	Phase B	Phase C	Conduit	Wire	OCPD	Load Type	CCT No.
1	Space				X			1'–1/4"	(3) #2 W/G	150	Transformer (75kVA, 120/208)	2
3	"					X					"	4
5	"						X				"	6
7	Space				X						Space	8
9	"					X					"	10
11	"						X				"	12
13	Space				X						Space	14
15	"					X					"	16
17	"						X				"	18
19	Lab AH	20	(3) #12 W/G	1/2"	X						Space	20
21	"					X					"	22
23	"						X				"	24
25	Office AH	30	(3) #10 W/G	3/4"	X			3/4"	(4) #8 W/G	40	EV Charger	26
27	"					X					"	28
29	"						X				"	30
31	Lab AH – Hood Unit	50	(3) #8 W/G	3/4"	X						Space	32
33	"					X					"	34
35	"						X				"	36
37	Compressor	15	(3) #12 W/G	1/2"	X			2'–1/4"	(4) 250 MCM W/G	250	Panel "AH"	38
39	"					X					"	40
41	"						X				"	42
43	Compressor	20	(3) #12 W/G	1/2"	X						Space	44
45	"					X					"	46
47	"						X				"	48
49	Compressor	30	(3) #10 W/G	1/2"	X						Space	50
51	"					X					"	52
53	"						X				"	54
55	Main	600	(4) #3 W/G	3/4"	X			1'–1/4"	(3) #2 W/G	150	unknown	56
57	"					X					"	58
59	"						X				"	60

NOTES
1. CIRCUIT ADDED

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

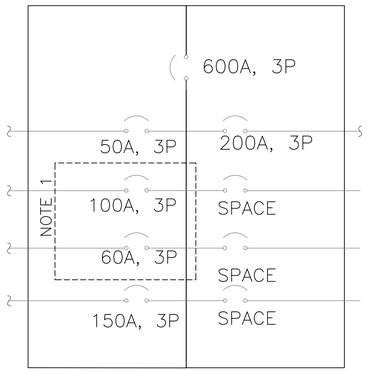
Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd
Date: 09/15/2022
Scale: N/A
Sheet: PV–9.2

PLANNED

GP–1
NEW AC GENERATION PANEL
480V, 3P, 4W
600A MCB, 800A BUS



NOTES
1. CIRCUITS RELOCATED FROM LP–2

New AC Generation Panel "GP–600" Schedule

Panel Voltage	480		Fed From	Secondary Transformer [500kVA, 3P]				Manufacturer/Model	Square D / I–Line HCN14654M			
Panel Phase/Wire	3P/4W		Panel Type	MCB				Note: 600A MCB. New loads and existing loads relocated from Panel "AH".				
Amp Rating	800		Location /Mounting	Inside/Surface								
CCT No.	Load Type	OCPD	Wire	Conduit	Phase A	Phase B	Phase C	Conduit	Wire	OCPD	Load Type	CCT No.
1	AC Test Bed	50	(4) #8 W/G	3/4"	X			2"	(3) 2/0 W/G	200	DynaPower Inverter	2
3	"					X					"	4
5	"						X				"	6
7	ORC Generator	100	(4) #2 W/G	1"	X						Space	8
9	"					X					"	10
11	"						X				"	12
13	Gas Generator	60	(4) #6 W/G	1"	X						Space	14
15	"					X					"	16
17	"						X				"	18
19	AC Load Bank	150	(4) 2/0 W/G	2"	X						Space	20
21	"										"	22
23	"										"	24

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV–9.3
Date: 09/15/2022	
Scale: N/A	

Table 3: Series 6 Module Mechanical Specifications

DIMENSION	SPECIFICATION	MODEL TYPE	DETAILS
A	Length	FS-6XXX / FS-6XXXA	2009 mm +3/-1 mm (79.1 +0.11 / -0.04 in)
		FS-6XXX-P / FS-6XXX-P FS-6XXX-P-I / FS-6XXXA-P-I	2024 mm +3/-1 mm (79.7 +0.11/-0.04 in)
B	Width	FS-6XXX / FS-6XXXA	1232 mm ± 2 mm (48.5 ± 0.08 in)
		FS-6XXX-P / FS-6XXXA-P FS-6XXX-P-I / FS-6XXXA-P-I	1245 mm ± 2 mm (49.0 ± 0.08 in)
C	Height	FS-6XXX / FS-6XXXA FS-6XXX-P / FS-6XXXA-P	49 mm ± 1 mm (1.9 ± 0.04 in)
		FS-6XXX-P-I / FS-6XXXA-P-I	45.5 mm ± 1 mm (1.8 ± 0.04 in)
D	Junction Box Lead Wire[4]	FS-6XXX / FS-6XXXA	2.5 mm² (14 AWG) 720 mm (28.35 in) (+) & Bulkhead (-)
		FS-6XXX-P / FS-6XXX-P FS-6XXX-P-I / FS-6XXXA-P-I	2.5 mm² (14 AWG) 733 mm (28.86 in) (+) & Bulkhead (-)
Total Area		FS-6XXX / FS-6XXXA	2.47 m² (26.5 ft²)
		FS-6XXX-P / FS-6XXXA-P FS-6XXX-P-I / FS-6XXXA-P-I	2.52 m² (27.1 ft²)
Module Weight[5]		FS-6XXX / FS-6XXXA	34.5 ± 1 kg (76 ± 2.2 lbs)
		FS-6XXX-P / FS-6XXXA-P	34.9 ± 1 kg (76.9 ± 2.2 lbs)
		FS-6XXX-P-I / FS-6XXXA-P-I	34.2 ± 1 kg (75.4 ± 2.2 lbs)
Fire Performance[6]		FS-6XXX / FS-6XXXA FS-6XXX-P / FS-6XXXA-P FS-6XXX-P-I / FS-6XXXA-P-I	Type 19: Class A Spread of Flame / Class C Burning Brand

6 MECHANICAL SPECIFICATIONS

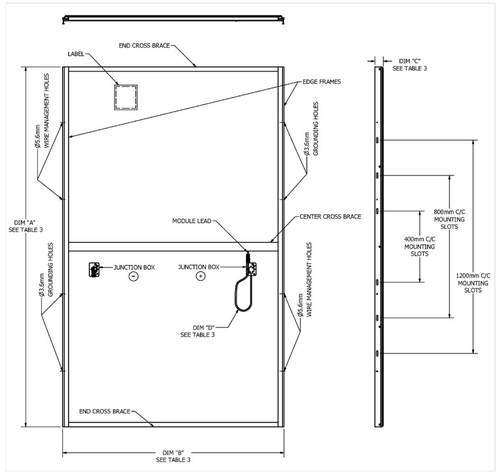


Figure 2: Series 6 Module Mechanical Drawing

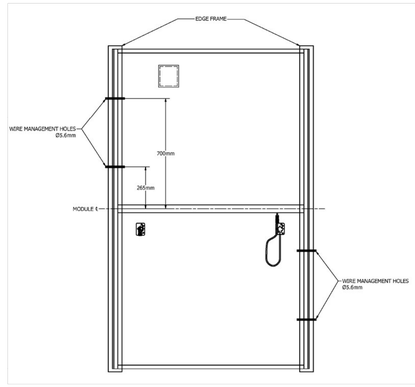


Figure 10: The above-ground DC cabling (typically a bundle of Harnesses and PV array cables) may be supported by the wire management holes located on the Series 6 Module Edge Frames.

- Holes located 265mm (10.4 in) from the center of the Edge Frame:
  - Support DC wiring bundle on Single-Torque Tube Tracker Systems
  - Support Harness end/connector (as it is being routed to the junction box)
- Holes located 700mm (27.6in) from the center of the Edge Frame:
  - Support DC wiring bundle on Two-Girder Tracker and Fixed-Tilt Systems
  - Support DC wiring bundle on Single-Torque Tube Tracker Systems with moving components that extend beyond 350mm (13.8 in) from the center of the structure.

Typically, the lead wire connection does not require wire retention or securement due to the proximity of the junction boxes on adjacent modules.

OMCO Origin™
MONOFACIAL TRACKER

Technical Specifications

Tracking technology:	Single-row, horizontal, balanced, single-axis	
Tracking range:	120°	
Modules and configurations:	Framed silicon modules - Up to 120 Series 6 modules - Up to 96 1-in-portrait	
Dimensions:	Height - Modules at 60° - 2.4 m (7.8 feet) Width - Modules horizontal - 2.0 m (6.5 feet) Length - Up to 122 m (400 feet)	
Foundations:	Driven C posts Driven I or W posts	
Structural materials:	Galvanized steel per ASTM A653	
Drive:	1 slew drive per tracker 20 drives per MW (typical)	
Motor:	1 24-volt dc brushed motor per tracker 20 motors per MW (typical)	
Control system:	1 tracker control unit mounted to each tracker with internal inclinometer DC with 30- or 60-watt module and onboard battery AC up to 264 vac input 1 network controller per 150 trackers (wireless) 1 or more meteorological stations per site 1 remote access unit per site – datalogger and modem – if needed	
Communication:	Network controller to tracker controllers: MODBUS over Zigbee wireless Network controller to SCADA: MODBUS TCP/IP over ethernet Cloud app available for remote monitoring and predictive maintenance	
Step size:	1°	
Tracking algorithm:	Based on United States Naval Observatory Solar Position Algorithm Tracking accuracy ±2°	
Backtracking:	Optional – Optimized for each tracker based on topography	
Night stow:	Yes	
Wind stow:	Yes	
Snow stow:	Yes	
Snow sensor:	Optional	
Bearings:	Self-lubricating acetal wear surfaces Adjustable in multiple dimensions to take up post misalignment Delivered fully assembled from the factory	
North-South slope:	Up to 15%	
Installation:	No welding or cutting in the field	
Compliance:	UL3703, ASCE7-10	
Warranty:	Structural Control system Drive Motor Dampers	10 years 5 years standard, 10 years optional 5 years 5 years 4 years

4550 W. Watkins St., Suite 100
Phoenix, AZ 85043
Tel: 602-352-2700 • Fax: 602-352-2701
info@omcosolar.com

OMCO SOLAR

OMCO Solar Quotation Package

Scope of Work

Solar Alternatives
Project Information: ULL Cleco

OMCO ORIGIN Product & Quote Specifications	
Structural Components	• Pre-galvanized drive & bearing posts • Slew drives with motors, bearing assembly, journal assembly • Torque tubes to connect module mounts, and splice connectors • Module mounts • PV Modules • Tracker control units, network control units, remote sensing units • Misc Joystick components- Kobalt 24V Charger & 24V 2.0AH Batter (to be supplied by customer) • Standard Anemometers • 1 Brushed 24 VDC motor per tracker • 4 Dampers per tracker • All necessary hardware required for assembly
Documentation & Support	• Installation manual • Full bill of materials • Marking labels - UL 969 • Stamped Issued for Construction drawings to included: *Structural Calculations* *Foundation Drawings* *Site specific array layout drawings and part drawings* • On-site support as required
Warranty	• 10 year warranty on OMCO racking components. • Warranty on motors, drives, bearing components, and control units as determined by Manufacturer
Logistics	• On site deliveries for the project will begin subject to finalized contracts • Components may ship from multiple locations • Site-specific components shipping BOM provided at time of shipment
Notes, Assumptions, Clarifications and Exclusions	• Quote assumes design loads in accordance with information provided by the customer • Qpsf ground snow load | 120 mph wind speed per ASCE7-10 • Assumes 15 ft pile embedment for quotation • Excludes costs associated with remediation of pile refusals • UL 3703 compliant (UL Certification) • Topography is assumed to conform within row design capabilities • Modules are not interchangeable; redesign may be required at additional cost • Clearing of snow and/or mud is excluded • OMCO estimated layout shown in this quote is based on site boundaries and overall project size provided by customer. Locations of other site equipment, access aisles, and setbacks require layout confirmation with customer. Final pricing may vary pending layout coordination with customer specifications. • No information has been provided that identifies the site contours or topography. Pricing assumes that the site is flat. Final quote requires a CAD file with final surfaces of the grade after any grading is completed.

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By Andrea Lee, Nick Boyd	Sheet PV-10.1
Date 09/15/2022	
Scale	

Equipment Data Sheets

AVTRON POWER SOLUTIONS

4000 SERIES Data Sheet

Model 4100

The Avtron Model 4100 are resistive, AC load banks designed for outdoor installation when up to 150 kW of resistive load is required.

LOAD BANK RATINGS

Standard capacity ratings of:

- 50 kW
- 75 kW
- 100 kW
- 125 kW
- 150 kW

Standard load step resolution of 5 kW.

Select from standard three phase voltage ratings of:

- 208-60Hz
- 240-60Hz
- 480-60Hz
- 240/480-60Hz
- 400-50Hz
- 600-60Hz

Single phase 240 voltage is also available.

Please consult factory for non-standard ratings.

Blower Motor Control

The blower motor is factory wired to the main load bus. If external blower connection is required, the factory installed wired must be removed. Refer to the load bank schematic for specific details.

An external 120V, 1 Phase, 60 Hz supply is required for control circuit operation.

An optional step-down transformer is available to provide the required control power. The transformer receives its power from the blower motor circuit described above.

Cooling System

Approximately 5,000 CFM cooling is provided by integral TEFC or TEAO motor which is direct coupled to the cooling fan blade.

The fan motor is fully protected with fuses, motor starter contractor, and overload relay.

Operator Controls

The standard load control for the 4100 is a manual 19" rack mount panel. Controls include: Power On/Off switch, Blower Start/Stop push buttons, Master Load On/Off switch, and Individual Load Step switches. Visual indicators include: Power On, Blower On, and Blower/Air Failure.

Other control options are available, please consult factory.

Construction

The 4100 is constructed using heavy gauge aluminized steel per ASTM A463. It is designed for continuous outdoor weatherproof operation. Forklift channels are provided in the base for lifting.

All exterior fasteners are stainless steel. The main input bus, load step relays, fuses, and blower/control relays are located in the main enclosure. The 4100 load bank is listed to UL standard 508A.

Finish

The 4100 has a high quality baked polyester powder coated finish with a film thickness of 2.8 +/- 0.4 mils per coat. The standard color is gray (ANSI 61).

Two Year Warranty Included

The equipment is covered by an industry exclusive 24-month parts and labor warranty.

Model 4100 Specifications

Resistor Elements

Avtron load banks use helically wound chromium alloy Heldyne elements. Elements are fully supported across their entire length by segmented ceramic insulators on stainless steel rods. These elements are designed to operate at approximately 1/2 of their maximum continuous wire rating.

Elements are positioned within the cooling airstream for optimal performance. Changes in resistance due to temperature are minimized by maintaining conservative watt densities.

The overall load tolerance of the 4100 load bank is -0, +5%. This ensures that advertised kW is delivered at rated voltage.

The elements are continuously rated at the specific voltage. Tests at lower voltages, with a corresponding reduction in overall rating, may be carried out.

Safety Features

A differential pressure switch is interlocked with the load application controls to prevent load from being supplied if cooling air is not present.

An overtemperature switch is provide to sense the load bank exhaust. The switch is interlocked with the load application controls to disable load from being supplied if an over-temperature condition is present.

The fan motor is protected with fuses and overloads.

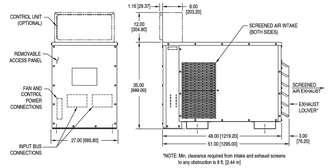
Major fault protection is provided by branch circuit fuse protection. Fuse protection is provided on all load steps.

The exterior of the load bank has appropriate warning and caution statements on access panels.

Internal access is restricted by bolt on exterior panels.

The air intake on the 4100 is designed to prevent objects greater than 0.50" diameter from being ingested into the unit.

Horizontal air discharge is provided and exhaust air is directed downward away from personnel.



All dimensions are in inches [millimeters]. Specifications subject to change without notice.

Ambient Temperature

The 4100 load bank is designed for continuous duty cycle with no limitations. The ambient temperatures range is -20°F to 120°F (-28°C to 50°C).

Mounting

The 4100 is designed for outdoor installation on a concrete pad or structural base.

Power Terminals and Cable Entry

The power terminals are located behind a removable, bolt on access panel. The 4100 has a recommended conduit entry area underneath the power terminal assembly to facilitate load cable installation.

Optional Accessories

- Control Power Transformer
- NEMA 4 Type Control Panel Enclosure
- Automatic Load Control
- Digital Metering with Data Logging
- SIGMA 2 Digital Controls
- Remote I/O Control
- Pilot Relay Control
- PLC Control
- Arctic Rating (low temperature)

Documentation - Operating Manual

A comprehensive operator's manual is supplied electronically via a USB drive.

Sections include: Safety, Installation, Operation, Maintenance, and Trouble-shooting.

Testing and Standards

Avtron load banks comply with NEMA, NEC, and ANSI standards. Quality control system is certified to ISO9001 standards.

Weight and Dimensions

Dimensions (approx. in/mm)			Weight (approx. lb/kg)
Length	Width	Height	
48/1219	27/685	35/889	500/227

Avtron Power Solutions
6255 Halle Drive, Cleveland, Ohio 44125, U.S.A.

www.avtronpower.com
LBsales@ascopower.com • 1-216-573-7600

DYNAPOWER
POWERING A CLEANER PLANET™

DPS-500 DC-DC Converter

Maximize PV generation and revenue with DC-coupled energy storage

FOR UTILITY-SCALE SOLAR PLUS STORAGE

This bi-directional 500kW DC-DC converter is designed to interface battery energy storage with new and existing 1000V and 1500V central inverter-based PV power plants.

The DPS-500 is ideal for utility-scale solar plus storage installations, offering advanced features including automated clipping recapture and low voltage harvesting that increase project revenues, while its DC-coupled architecture reduces installation and regulatory costs.

This DC-DC converter can operate in voltage, current, and power control modes, and is capable of on-the-fly switching between modes. Designed to be easily scaled, any combination of up to six units can be paralleled together to create building blocks of up to 3MW of storage power.

Key Technologies

- Clipping Recapture
- Low Voltage Harvesting
- Curtailment Recapture
- Energy Time Shifting
- Ramp Rate Control

System Advantages:

- Reduce installation and regulatory costs through DC-coupled architecture
- Scalable storage power up to 3MW with paralleled units

DPS-500 DC-DC Converter

TECHNICAL SPECIFICATIONS

Electrical

DC Input Voltage Range (Battery Port):	100-1500V_{DC}
DC Input Voltage Range (PV Port):	100-1500V_{DC}
Maximum Power Rating:	500kW (@1000V_{DC}) 600kW (@1200-1500V_{DC})
Maximum Current Rating:	+/-500A_{DC}
Maximum Efficiency:	99%
Average Efficiency:	98.2%
Aux/Controls Power:	Customer supplied 120V, 1-ph, 60Hz, 1kVA service Customer supplied 230V, 1-ph, 50Hz, 1kVA service

Environmental

Operating Temp:	-25 to +55°C
Cooling:	Forced Air Cooled
Enclosure:	UL 3R/IP 54
Max Elevation:	1000 Meters Full Power, 3000 Meters with Derating
Dimensions (L x W x H):	33.5" x 39.4" x 80.5"
Weight:	1300 lbs
Cable Connections:	Side or bottom entry

Certifications & Standards Compliance

UL 1741
CSA C22.2 #107.1
UL / IEC 62109-1
IEC / EN 61000-6-4
IEC / EN 61000-6-2
CISPR 11 / EN 55011
FCC Part 15 Class A
IEEE Std C37.90.2

Hardware Protections

DC Contactor and Precharge on Battery Port

Software Protections

DC Over-voltage and Under-voltage
DC Over-current
Over-temperature
Fuse monitoring

User Interface

Remote Communications:	Modbus TCP/IP
Local Indicators:	Lamps on front panel indicating operation mode & alarm/fault status

DYNAPOWER
85 Meadowland Drive, South Burlington, Vermont USA 05403
1.802.860.7200 | sales@dynapower.com

DYNAPOWER
POWERING A CLEANER PLANET™

MPS-125 Energy Storage Inverter

The world's most capable microgrid inverter

This parallelable 125kW energy storage inverter is transformer-less, air-cooled, and compact, and optimized for behind-the-meter energy storage applications.

Featuring a highly efficient three-level topology, the MPS-125 is easily integrated into customer supplied battery storage systems or can be supplied as part of Dynapower's fully-integrated MPS-i energy storage system. Multiple MPS-125 energy storage inverters can be paralleled together to scale to meet the needs of any behind-the-meter energy storage installation.

With all the functional capabilities of the grid-scale CPS inverter family, the MPS-125 supports frequency, voltage, and VAR support applications.

With our patented Dynamic Transfer™ feature, the MPS-125 inverter monitors grid stability and will automatically disconnect and transition to stand-alone mode if a grid disturbance is detected, ensuring consistent power to critical loads.

Key Technologies

- Islanded Operation (UF Mode)
- Dynamic Transfer
- Black Start
- Frequency Compensation Mode (F-Comp)
- Volt-Var Compensation Mode (E-Comp)

MPS-125 Energy Storage Inverter

TECHNICAL SPECIFICATIONS

Electrical

AC Input Voltage:	480V_{AC} 3 Phase
Grid Frequency:	60 Hz
Rated Output Apparent Power:	125kVA
Rated Output Real Power:	125kW
Rated Output Current:	150A_{RMS}
Overload AC Current:	180A_{RMS}
DC Voltage Range:	740-1500V_{DC}
Max DC Current:	171A_{DC}
Power Factor:	0 – 1.00 Leading or Lagging
Current Harmonics:	IEEE 1547 Compliant, <5% TDD
Maximum Efficiency:	98.7%
CEC Efficiency:	97%

Environmental & Mechanical

Operating Temp:	-25 to +50°C, De-rated from +45 to +50°C
Cooling:	Forced Air Cooled
Enclosure:	UL 3R/IP 54
Max Elevation:	1000 Meters Full Power Up to 3000 Meters with Derating
Dimensions (H x W x D):	36" x 28" x 15.25"
Weight:	176 lbs

Certifications & Standards Compliance

UL 1741 SA
IEEE 519
IEEE 1547
CSA 22.2 #107.1
NFPA 70

Hardware Protections

AC Breaker with Shunt Trip
AC Surge Protection
DC Disconnect
DC Input Fuses
DC Pre-charge (Optional)

Software Protections

Battery Voltage and Current Curtail Limits to protect battery
AC Current Limiting Pending
DC Over/Under Voltage, Over Current faults
AC Over/Under Voltage, Over/Under Frequency, Over Current faults
Anti-islanding Protection (Open Phase at inverter terminals)
Temperature Monitoring and protective power curtailment
Watchdog Timer to detect loss of communications

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1–504–267–1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV–1.0 COVER PAGE
PV–1.1 GENERAL NOTES
PV–1.2 REFERENCE
PV–2.0 SITE PLAN
PV–3.0 SOLAR PLAN
PV–3.1 STRING PLAN
PV–3.2 SOLAR COMPONENTS
PV–3.3 SOLAR COMPONENTS
PV–3.4 SOLAR COMPONENTS
PV–5.0 EQUIPMENT PLAN
PV–5.1 PAD LAYOUT
PV–5.2 PAD DETAILS
PV–5.3 EQUIPMENT ROOM DETAIL
PV–5.4 EQUIPMENT ROOM ELEVATION
PV–5.5 EQUIPMENT ROOM ELEVATION
PV–5.6 EQUIPMENT ROOM ELEVATION
PV–5.7 OUTDOOR WALL ELEVATION
PV–6.0 ELECTRICAL DIAGRAM
PV–7.0 ELECTRICAL CALCULATIONS
PV–8.0 COMMUNICATIONS DIAGRAM
PV–9.0 PANELBOARDS
PV–10.0 EQUIPMENT DATA SHEETS

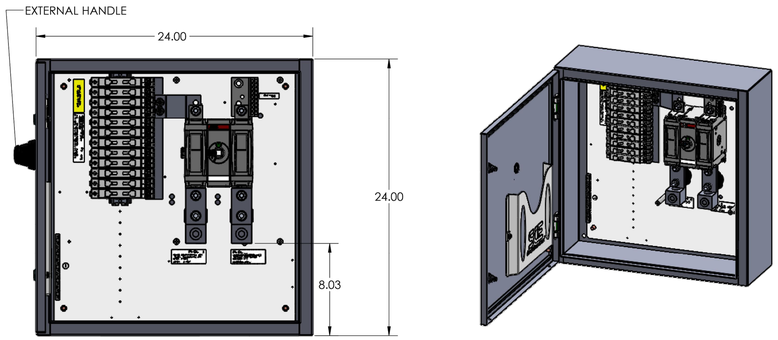
Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE–CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd	Sheet: PV–10.2
Date: 09/15/2022	
Scale:	

Equipment Data Sheets



1500 VDC Disconnect Combiner per the following specifications (listed to UL-1741):
- 24x24x8" NEMA-4 powder coated steel enclosure
- 275 Amp dual polarity load break disconnect switch with external handle (disconnects positive and negative conductors)
- 12 x 10 Amp fuses
- 12 x Positive input touch-safe fuse holders, terminals sized to accommodate #14-8 conductors
- 12 x Negative input terminals to accommodate #14-8 conductors
- 1 x Positive output terminal(s) to accommodate 1 x #2-600 MCM conductors (mechanical lugs)
- 1 x Negative output terminal(s) to accommodate 1 x #2-600 MCM conductors (mechanical lugs)
- PE Ground terminals sized for 7 x #14-6 and 4 x # 14-1/0 conductors (mechanical lug)
- 1500VDC Surge Protection Device installed by Terrasmart

terrasmart™

CUSTOMER APPROVAL

	PRINTED NAME	TITLE	SIGNATURE	APPROVAL DATE

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONALS
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ± .000
THREE PLACE DECIMAL ± .010

INTERPRET GEOMETRIC TOLERANCING PER:

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF TERRASMART. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF TERRASMART IS PROHIBITED.

	NAME	DATE
MODEL	SKYLER	7/24/2023
DRAWN	SKYLER	7/24/2023
CHECKED		
MFG APPR.		
Q.A.		
MATERIAL		WEIGHT: 80 LBS
FINISH		SCALE:

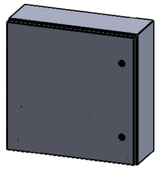
INTERNAL PART #
Q23-D05618
Solar Alternatives, Inc
CLSFT2712-1468-A1

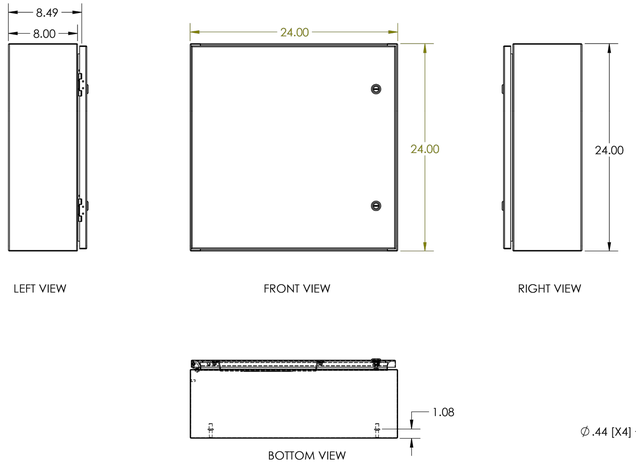
FILE: CSF275-12-10-N4-CD | SIZE **B**

DESCRIPTION: 1500VDC DISCONNECT COMBINER

MODEL #: CSF275-12-10-N4-CD | REV 0

DO NOT SCALE DRAWING | SHEET 1 OF 2


ISO VIEW



terrasmart™

CUSTOMER APPROVAL

	PRINTED NAME	TITLE	SIGNATURE	APPROVAL DATE

UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONALS
ANGULAR: MACH ± BEND ±
TWO PLACE DECIMAL ± .000
THREE PLACE DECIMAL ± .010

INTERPRET GEOMETRIC TOLERANCING PER:

PROPRIETARY AND CONFIDENTIAL

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF TERRASMART. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF TERRASMART IS PROHIBITED.

	NAME	DATE
MODEL	SKYLER	7/24/2023
DRAWN	SKYLER	7/24/2023
CHECKED		
MFG APPR.		
Q.A.		
MATERIAL		WEIGHT:
FINISH		SCALE:

INTERNAL PART #

FILE: CSF275-12-10-N4-CD | SIZE **B**

DESCRIPTION:

MODEL #: CSF275-12-10-N4-CD | REV 0

DO NOT SCALE DRAWING | SHEET 2 OF 2

Equipment Data Sheets

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions

No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd
Date: 09/15/2022
Scale: N/A
Sheet: PV-10.3

ASCO SERIES 300
Power Transfer Switches
Technical Data and Ordering Information

ascopower.com

Life Is On | Schneider Electric

ASCO SERIES 300 ORDERING INFORMATION

To order an ASCO SERIES 300 Power Transfer Switch, complete the following catalog number:

J + 03ATS + A + 3 + 0600 + N + GX + C

FRAME	TRANSITION TYPE	NEUTRAL CODE	PHASE POLES	AMPERES	VOLTAGE CODE	GROUP CODE	ENCLOSURE
Open Transition D = 30A - 230A **Open/Delayed Transition** J = 150A - 600A H = 800A - 1200A G = 1600A - 3000A	**Automatic** 03ATS Open Transition 3ADTS Delayed Transition **Non Automatic** 03NTS Open Transition 3NDTS Delayed Transition	A = Solid Neutral B = Switched Neutral	2 3	0030[1] 0070[1] 0104[1] 0150[1, 4] 0200[1, 3, 4] 0230[1, 3, 4] 0260[1, 4] 0400[1, 4] 0600[1] 0800[4] 1000[4] 1200[4, 5] 1600[4, 5] 2000[4, 5] 2600[4, 5] 3000[4, 5]	A[2] = 115 B[2] = 120 C = 208 D = 220 E = 230 F = 240 H = 380 J = 400 K = 415 L = 440 M = 460 N = 480 P = 550 Q = 575 R = 600	G0 No Optional Accessories GX Optional Accessories	0 = Open Type (zero) C = Type 1 Enclosure F = Type 3R[8,9] Enclosure G = Type 4[8] Enclosure H = Type 4X[8] Enclosure (304 Stainless Steel) L = Type 12 Enclosure M = Type 3R[8,9] Secure Double-Door Enclosure N = Type 4[8] Secure Double-Door Enclosure Q = Type 12 Secure Double-Door Enclosure R = Type 3RX[7,8,9] Secure Double-Door Enclosure (304 Stainless Steel) S = Type 3RX[7,8,9] Secure Double-Door Enclosure (316 Stainless Steel) U = Type 4X[8] Enclosure (316 Stainless Steel) V = Type 4X[8] Secure Double-Door Enclosure (316 Stainless Steel)

Notes:

1. Switch sizes 30-600 amperes supplied in non-secure enclosures as standard.
2. 115-120 volt available for 30-400 amperes only. For other voltages contact ASCO.
3. 200 and 230 amperes rated switches for use with copper cable only.
4. Switch sizes 800-3000 amperes, and 150-400 amperes 3ADTS/3NDTS provided in secure type outdoor enclosures when required.
5. Use Type 3R secure for 1200, 2000, 2600, and 3000.
6. Type 304 stainless steel is standard. Suitable for indoor or outdoor use where there may be caustic or alkali chemicals in use. To provide an improved reduction in corrosion of salt and some chemicals, optional type 316 stainless steel is recommended. This is the preferred choice for marine environments.
7. Available on switches rated 1200, 2000, 2600, and 3000 amperes.
8. When temperatures below 32°F can be experienced, special precautions should be taken, such as the inclusion of strip heaters, to prevent condensation and freezing of this condensation. This is particularly important when environmental enclosures (Type 3R, 4) are ordered for outdoor applications.
9. Type 3R enclosures are not suitable for installations subject to wind blown rain or snow. Use Type 4 enclosures where available or install supplemental shelter protection around the 3R enclosure.

SERIES 300 EXTERNAL POWER CONNECTIONS

Size UL Listed Solderless Screw-Type Terminals

SWITCH RATING (AMPERES)	RANGES OF AL-CU WIRE SIZES (UNLESS SPECIFIED COPPER ONLY)
30-230[1] ATS and NTS only	One #14 to 4/0 AWG
150[2], 260, 400	Two 1/0 AWG to 250 MCM or One #4 AWG to 600 MCM
600	Two 2/0 AWG to 600 MCM
800, 1000, 1200	Four 1/0 to 600 MCM
1600, 2000	Six 1/0 to 600 MCM
2600, 3000	Twelve 1/0 to 750 MCM

Notes:

All SERIES 300 switches are furnished with a solid neutral plate (unless switched neutral configuration is specified) and terminal lugs.
Use wire rated 75°C minimum for all power connections.

1. 200 and 230 amperes rated switches for use with copper cable only. Refer to paragraph 310.15 of the NEC for additional information.
2. 150 for DTS only.

SERIES 300 Transfer Switch Dimensions and Shipping Weights

UL Type 1 Enclosure*

SWITCH RATING AMPS	PHASE POLES	NEUTRAL CODE[1]	DIMENSIONS, IN. (MM)[2] WIDTH	HEIGHT	DEPTH	APPROX. SHIPPING WEIGHT LB. (KG)
30[3],70[3],104[3] 150[3], 200[3]	2	A	18 (457)	31 (787)	13 (330)	69 (32)
	2	B	18 (457)	31 (787)	13 (330)	72 (33)
	3	A	18 (457)	31 (787)	13 (330)	72 (33)
	3	B	18 (457)	31 (787)	13 (330)	75 (34)
230	2	A	18 (457)	48 (1219)	13 (330)	117 (53)
	2	B	18 (457)	48 (1219)	13 (330)	125 (57)
	3	A	18 (457)	48 (1219)	13 (330)	125 (57)
	3	B	18 (457)	48 (1219)	13 (330)	133 (61)
260, 400	2	A	24 (610)	56 (1422)	14 (356)	250 (113)
	2	B	24 (610)	56 (1422)	14 (356)	260 (118)
	3	A	24 (610)	56 (1422)	14 (356)	260 (118)
	3	B	24 (610)	56 (1422)	14 (356)	270 (123)
150, 200, 230 SERIES 3ADTS/3NTS only	2	A	24 (610)	56 (1422)	14 (356)	250 (113)
	2	B	24 (610)	56 (1422)	14 (356)	260 (118)
	3	A	24 (610)	56 (1422)	14 (356)	260 (118)
	3	B	24 (610)	56 (1422)	14 (356)	270 (123)
600	2	A	24 (610)	63 (1600)	17 (432)	300 (137)
	2	B	24 (610)	63 (1600)	17 (432)	320 (146)
	3	A	24 (610)	63 (1600)	17 (432)	320 (146)
	3	B	24 (610)	63 (1600)	17 (432)	320 (151)
800, 1000	2	A	34 (864)	72 (1829)	20 (508)	431 (196)
	2	B	34 (864)	72 (1829)	20 (508)	460 (209)
	3	A	34 (864)	72 (1829)	20 (508)	460 (209)
	3	B	34 (864)	72 (1829)	20 (508)	489 (222)
1200	2	A	38 (965)	87 (2210)	23 (584)	581 (264)
	2	B	38 (965)	87 (2210)	23 (584)	611 (277)
	3	A	38 (965)	87 (2210)	23 (584)	611 (277)
	3	B	38 (965)	87 (2210)	23 (584)	639 (290)
1600, 2000	3	A	38 (965)	87 (2210)	23 (584)	1160 (525)
	3	B	38 (965)	87 (2210)	23 (584)	1160 (525)
2600, 3000[4]	3	A	38 (965)	91 (2311)	72 (1829)	1430 (649)
	3	B	38 (965)	91 (2311)	72 (1829)	1495 (679)

Notes:

1. Neutral Codes: 0=None, A=Solid, B=Switched
2. Dimensional data is approximate and subject to change. Certified dimensions available upon request.
3. Dimensions for 30-200 ampere models when furnished with accessory 135L power meter are 18"W x 41"H x 13"D.
4. Enclosures for 2600, 3000 amperes are free-standing with removable top, sides and back.

* Unit is designed for top cable entry of emergency and load, and bottom entry of normal.
A cable pull box is also available for all top or bottom cable access when required (optional accessory kit #K609027).
Not required for type 3R, 4X, and 12 enclosures where available.

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS
PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

AF40 ... AF96 3-pole contactors

18.5 to 45 kW
AC / DC operated

AF40-30-00

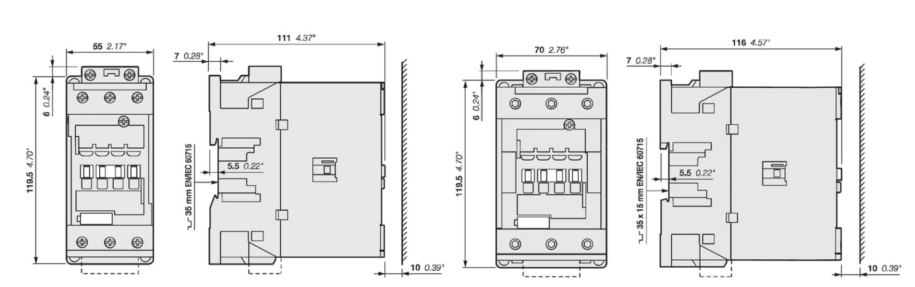
AF80-30-00

AF40 ... AF96 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC and 220 V DC. These contactors are of the block type design with 3 main poles.

- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 control voltage ranges covering 24...500 V 50/60 Hz and 20...500 V DC
  - can manage large control voltage variations
  - reduced panel energy consumption
  - very distinct closing and opening
  - can withstand short voltage dips and voltage sags (SEMI F47-0706 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for front or side mounting and a wide range of accessories.

IEC Rated operational power 400 V AC-3 kW	IEC Rated operational current θ ≤ 40 °C AC-1 A	UL / CSA 3-phase motor rating 480 V hp	UL / CSA General use rating 600 V AC A	Rated control circuit voltage Uc min. ... Uc max. V 50/60 Hz	V DC	Auxiliary contacts fitted	Type (1)	Order code	Weight Pkg (1 pce) kg
18.5	70	30	60	24...60	20...60 (1)	0 0	AF40-30-00-11	1SBL347001R1100	0.970
				48...130	48...130	0 0	AF40-30-00-12	1SBL347001R1200	0.970
				100...250	100...250	0 0	AF40-30-00-13	1SBL347001R1300	0.950
				250...500	250...500	0 0	AF40-30-00-14	1SBL347001R1400	0.950
22	100	40	80	24...60	20...60 (1)	0 0	AF52-30-00-11	1SBL367001R1100	0.970
				48...130	48...130	0 0	AF52-30-00-12	1SBL367001R1200	0.970
				100...250	100...250	0 0	AF52-30-00-13	1SBL367001R1300	0.950
				250...500	250...500	0 0	AF52-30-00-14	1SBL367001R1400	0.950
30	105	50	90	24...60	20...60 (1)	0 0	AF65-30-00-11	1SBL387001R1100	0.970
				48...130	48...130	0 0	AF65-30-00-12	1SBL387001R1200	0.970
				100...250	100...250	0 0	AF65-30-00-13	1SBL387001R1300	0.950
				250...500	250...500	0 0	AF65-30-00-14	1SBL387001R1400	0.950
37	125	60	105	24...60	20...60 (1)	0 0	AF80-30-00-11	1SBL397001R1100	1.220
				48...130	48...130	0 0	AF80-30-00-12	1SBL397001R1200	1.220
				100...250	100...250	0 0	AF80-30-00-13	1SBL397001R1300	1.170
				250...500	250...500	0 0	AF80-30-00-14	1SBL397001R1400	1.170
45/55	130	60/75	115	24...60	20...60 (1)	0 0	AF96-30-00-11	1SBL407001R1100	1.220
				48...130	48...130	0 0	AF96-30-00-12	1SBL407001R1200	1.220
				100...250	100...250	0 0	AF96-30-00-13	1SBL407001R1300	1.170
				250...500	250...500	0 0	AF96-30-00-14	1SBL407001R1400	1.170

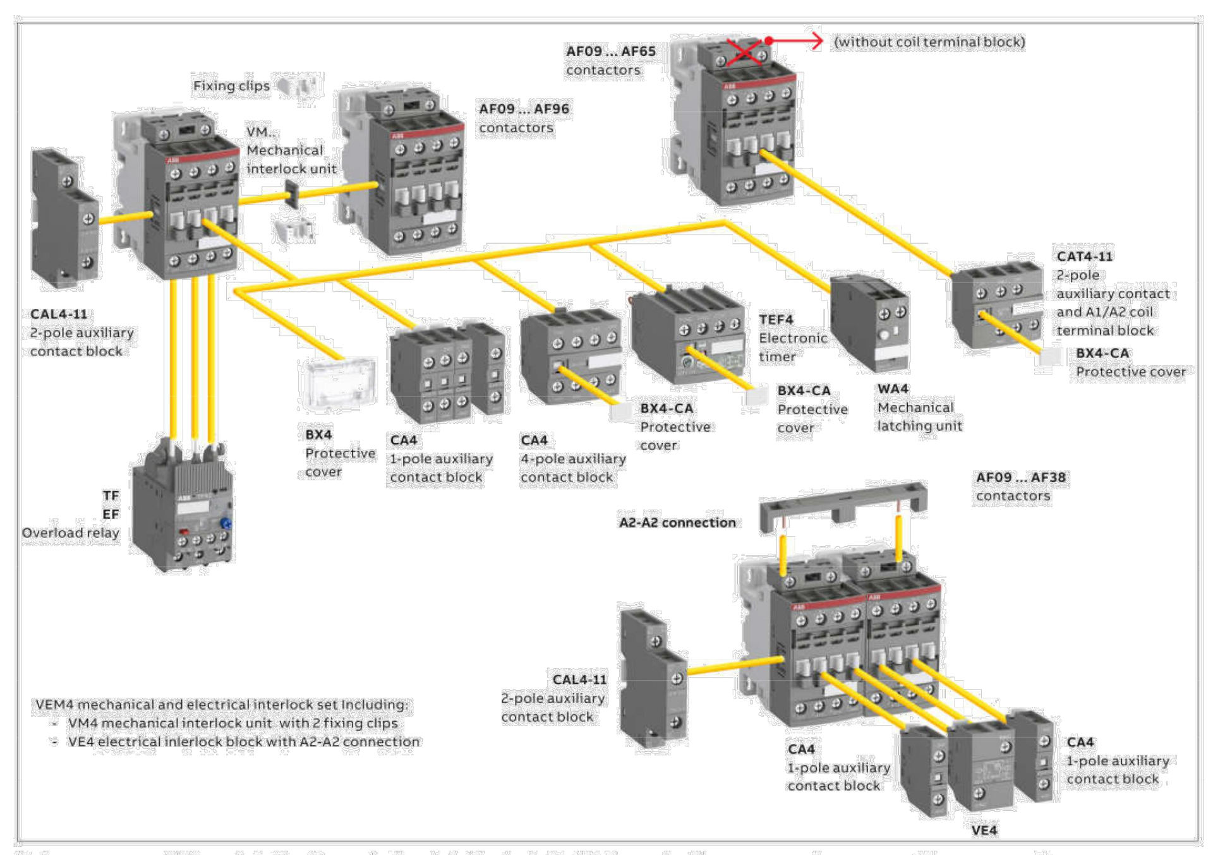
(1) For control by PLC-output, use RA4 interface relay.



AF40, AF52, AF65 — AF80, AF96

AF09 ... AF96 3-pole contactors

Contactors and main accessories



Main accessory fitting details - for ordering details, technical data and other accessories: see section accessories
Many configurations of accessories are possible depending on whether these are front-mounted or side-mounted.

Contactor types	Main poles	Built-in auxiliary contacts	Front-mounted accessories Auxiliary contact blocks 1-pole CA4	2-pole CAT4-11	4-pole CA4	Electronic timer TEF4	Mechanical latching unit WA4 (2)	Electrical and mechanical interlock set (between 2 contactors) VEM4		Side-mounted accessories Auxiliary contact blocks 2-pole CAL4-11 Left side	Right side
AF09(Z) ... AF38(Z) (1)											
AF09 ... AF16	3 0	0 1	4 max.	or 1	or 1	or 1	or 1	–	+	1	–
AF09 ... AF16	3 0	1 0	2 max.	or 1	–	or 1	or 1	–	+	1	+ 1
AF26 ... AF38	3 0	0 0	3 max.	–	–	–	–	+ 1 (3)	+	1	or 1
AF09Z ... AF38Z 24 V DC designed for PLC - coil 30 (1)											
AF09Z ... AF16Z	3 0	0 1	4 max.	–	or 1	or 1	–	– (3)	or	1	+ 1
AF09Z ... AF16Z	3 0	1 0	2 max.	–	–	or 1	–	– (3)	+	1	or 1
AF26Z ... AF38Z	3 0	0 0	–	–	–	1	–	–	+	1	+ 1
AF40 ... AF96											
AF40 ... AF65	3 0	0 0	4 max.	or 1	or 1	or 1	or 1	–	+	1	+ 1
AF80, AF96	3 0	0 0	4 max.	–	or 1	or 1	or 1	–	+	1	+ 1

(1) Including add-on and built-in contacts : 4 N.C. auxiliary contacts max on positions 1, 2, 3, 4 and 3 N.C. auxiliary contacts max. on positions 1 ±30°, 5.
(2) Use WA4 for AF09...AF65 and WA4-96 for AF80, AF96.
Accept 1-pole CA4 auxiliary contacts (1 block on each side of the mechanical latch) in respect to the total number of built-in or additional N.C. auxiliary contacts.
For WA4 accessory use with contactor coil 30, please consult your ABB local sales organization.
(3) VEM4 not suitable for AF..Z contactors with DC control voltages 12...20 V DC (coil 20) and 24 V DC (coil 30). Use VM4 side-mounted mechanical interlock unit.

Overload relays fitting details (4)

Contactor types	Thermal overload relays	Electronic overload relays
AF09 ... AF38	TF42 (0.10...38 A)	EF19 (0.10...19 A)
AF26 ... AF38	TF42 (0.10...38 A)	EF45 (9...45 A)
AF40 ... AF65	TF65 (22...67 A)	EF65 (20...70 A)
AF80, AF96	TF96 (40...96 A)	EF96 (36...100 A)

The addition of an overload relay on the contactor does not prevent fitting of many other accessories as shown above.

AF400 ... AF750 3-pole contactors

200 to 400 kW
AC / DC operated with 1 N.O. + 1 N.C. auxiliary contacts

AF460-30-11

AF750-30-11

AF400 ... AF750 contactors are mainly used for controlling 3-phase motors and power circuits up to 1000 V AC or 600 V DC (2). These contactors are of the block type design with 3 main poles.

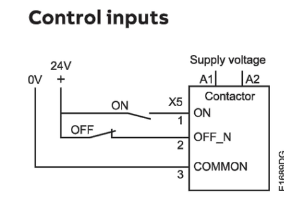
- control circuit: AC or DC operated with electronic coil interface accepting a wide control voltage range (e.g. 100...250 V AC and DC), only 4 coils to cover control voltages between 48...500 V 50/60 Hz and 24...500 V DC
  - can manage large control voltage variations
  - reduced panel energy consumption
  - very distinct closing and opening
  - can withstand short voltage dips and voltages sags (SEMI F47 conditions of use on request).
- built-in surge suppression
- add-on auxiliary contact blocks for side mounting and a wide range of accessories.

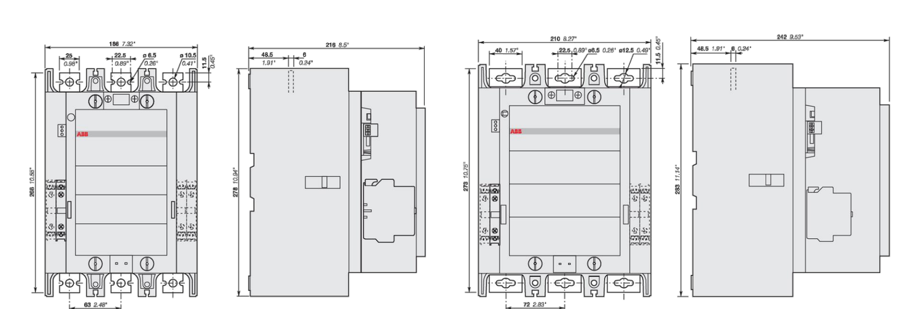
IEC Rated operational power 400 V AC-3 kW	IEC Rated operational current θ ≤ 40 °C 690 V AC-1 A	UL/CSA 3-phase motor rating 480 V hp	UL/CSA General use rating 600 V AC A	Rated control circuit voltage Uc min. ... Uc max. V 50/60 Hz	V DC	Auxiliary contacts fitted	Type	Order code	Weight Pkg (1 pce) kg
200	600	350	550	-	24...60	1 1	AF400-30-11	1SFL577001R6811 (1)	12.000
				48...130	48...130	1 1	AF400-30-11	1SFL577001R6911	12.000
				100...250	100...250	1 1	AF400-30-11	1SFL577001R7011	12.000
				250...500	250...500	1 1	AF400-30-11	1SFL577001R7111	12.000
250	700	400	650	-	24...60	1 1	AF460-30-11	1SFL597001R6811 (1)	12.000
				48...130	48...130	1 1	AF460-30-11	1SFL597001R6911	12.000
				100...250	100...250	1 1	AF460-30-11	1SFL597001R7011	12.000
				250...500	250...500	1 1	AF460-30-11	1SFL597001R7111	12.000
315	800	500	750	-	24...60	1 1	AF580-30-11	1SFL617001R6811 (1)	15.000
				48...130	48...130	1 1	AF580-30-11	1SFL617001R6911	15.000
				100...250	100...250	1 1	AF580-30-11	1SFL617001R7011	15.000
				250...500	250...500	1 1	AF580-30-11	1SFL617001R7111	15.000
400	1050	600	900	-	24...60	1 1	AF750-30-11	1SFL637001R6811 (1)	15.000
				48...130	48...130	1 1	AF750-30-11	1SFL637001R6911	15.000
				100...250	100...250	1 1	AF750-30-11	1SFL637001R7011	15.000
				250...500	250...500	1 1	AF750-30-11	1SFL637001R7111	15.000

(1) The connection polarities indicated close to the coil terminals must be respected: A1 for the positive pole and A2 for the negative pole.
(2) Up to 850 V DC for AF580, AF750.

AF400 ... AF750 are equipped with low voltage inputs for control, for example by a PLC.

Control inputs

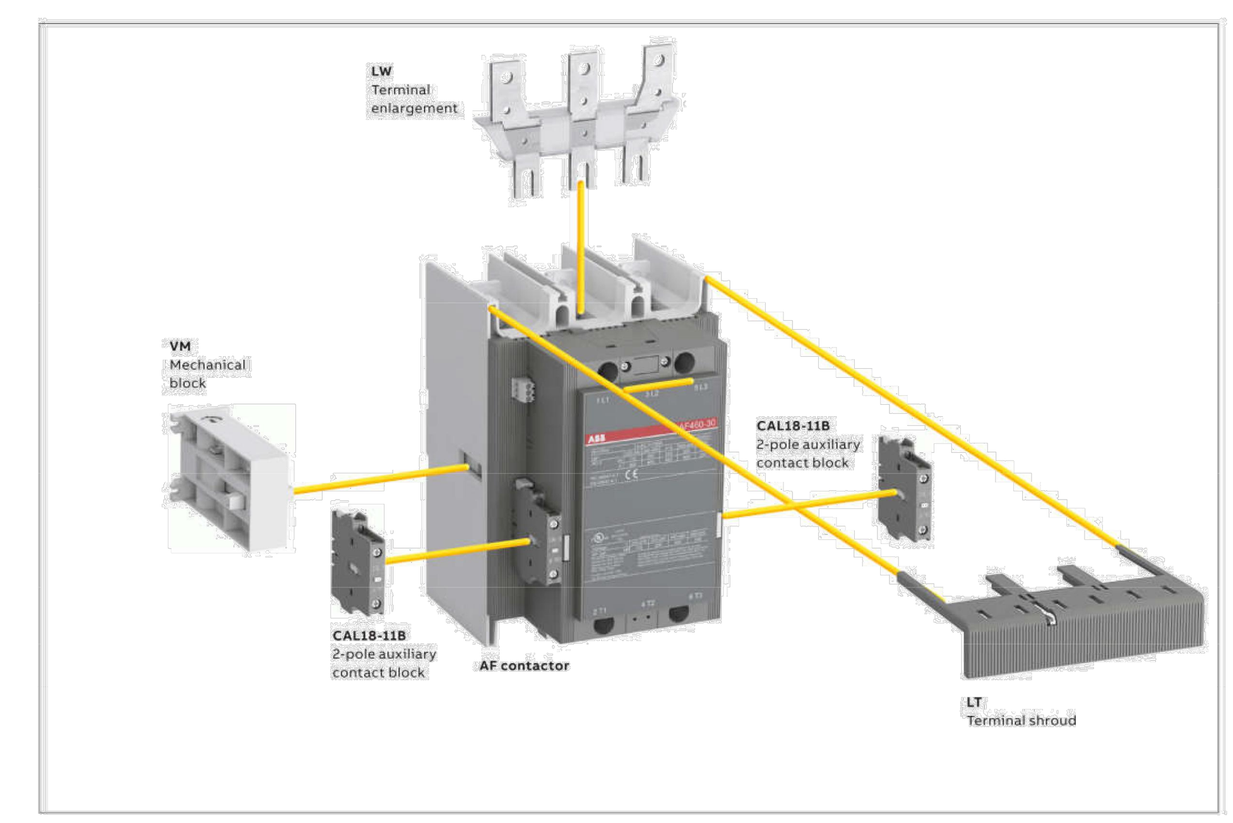




AF400 ... AF2850 3-pole contactors with 1 N.O. + 1 N.C. auxiliary contacts

Contactors and main accessories

Main accessories (other accessories available)



Main accessory fitting details - for ordering details, technical data and other accessories: see section accessories

Contactor types	Main poles	Available auxiliary contacts		Side-mounted accessories Auxiliary contact blocks CAL18-11	CAL18-11B (3)	Mechanical interlock units (between two contactors)
Contactors + auxiliary contact blocks						
AF400 ... AF2850	3 0	1 1		1 x CAL18-11	+ 2 x CAL18-11B	–
Contactors with mechanical interlocking + auxiliary contact blocks						
AF400 ... AF2850	3 0	1 1		2 x CAL18-11 (1)	+ 4 x CAL18-11B (1)	+ VM...H (2)

(1) Total number of auxiliary contact blocks for the two contactors. (2) Interlock type, according to the contactor ratings (see "Accessories").
(3) The CEL18-.. auxiliary contact blocks can replace the CAL18-11 and CAL18-11B. Though, no auxiliary contact block can be mounted outside the CEL18-..

Overload relays fitting details

Contactor types	Thermal overload relays	Electronic overload relays
AF400, AF460	–	EF460 (150...500 A) (1)
AF580, AF750	–	EF750 (250...800 A) (1)
AF1350, AF1650	–	EF1250DU (375...1250 A) (1)

The addition of a thermal or electronic overload relay on the contactor does not prevent fitting of many other accessories as shown in "Main accessory fitting details" table.
(1) Mounting kit required (see "Motor protection").

Revisions

No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd
Date: 09/15/2022
Scale: N/A
Sheet: PV-10.4

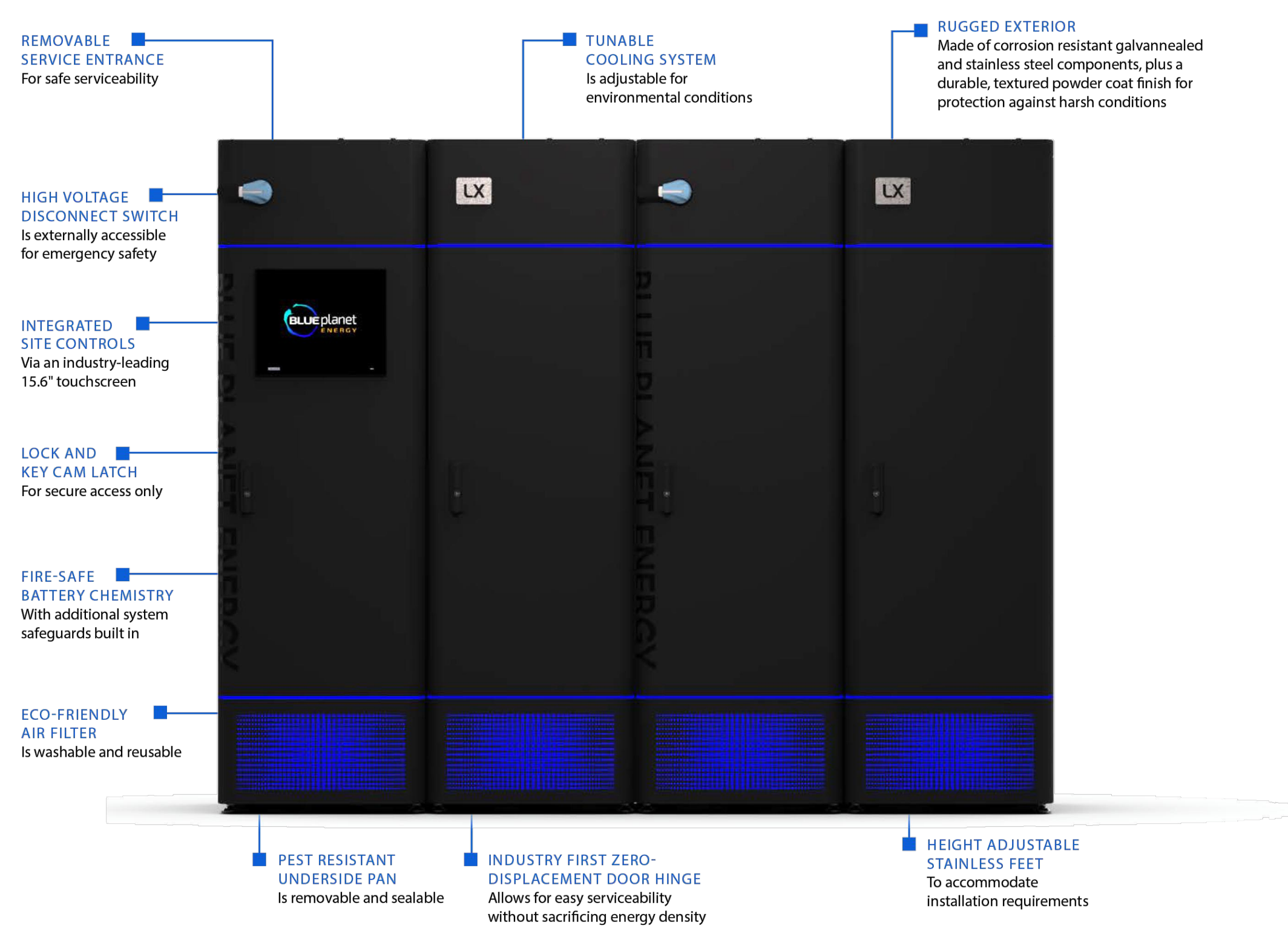
Equipment Data Sheets

Blue Ion LX

Grid Optional™ Energy Solution

Energy from renewables like solar is variable, leaving people still tethered to the utility grid with limited options to disconnect. Blue Planet Energy tames energy to make clean power work on demand and brings new options to leave the grid behind. Our Blue Ion LX is a premium Grid Optional™ energy solution that integrates the energy storage, system intelligence and site controls needed to be grid-free. Blue Ion LX is flexible and can also work in conjunction with the grid or generators in order to optimize using them, providing you the widest range of energy options. Built in the USA, the Blue Ion LX is ruggedized for use cases where energy is absolutely critical *(emergency services/healthcare) or prohibitively high-cost (business continuity/utility rate structures).*

- Grid Optional™ Functions with or without the Utility Grid
- Fully Scalable and Expandable
- Operating Temperature Range: -4°F to 113°F (-20°C to 45°C)
- 100% Usable Capacity
- 21 Year Life Expectancy



blueplanetenergy.com | sales@blueplanetenergy.com

Model Number

Blue Ion LX — Grid Optional™ Energy Solution

System Technical Specifications

MIN SYSTEM SIZE	125kW/128kWh
EXPANDABLE	32kWh increments
DIMENSIONS PER 32kWh ENCLOSURE (H x W x D)	76 in x 24 in x 32 in (193.04 cm x 60.96 cm x 81.28 cm)
DIMENSIONS TOTAL (128kWh SYSTEM, H x W x D)	76 in x 96 in x 32 in (193.04 cm x 243.84 cm x 81.28 cm)
MOUNTING	Adjustable Feet, Floor Mount
ALTITUDE LIMITATIONS	16,404 ft (5,000 m) at Full Power

Applications

OFF-GRID	Generation source agnostic, generator interface, load control, islanding capable, resiliency
GRID INTERCONNECTED	Microgrid with full grid interactivity and full off-grid capability, zero export, self consumption, tariff optimization, demand management, load shifting

Battery Specifications

STORAGE TEMPERATURE RANGE	-4°F to 113°F (-20°C to 45°C)
DISCHARGE TEMPERATURE RANGE	-4°F to 122°F (-20°C to 50°C)
CHARGE TEMPERATURE RANGE	32°F to 113°F (0°C to 45°C)
OPERATING AMBIENT HUMIDITY	10% RH to 90% RH
ENCLOSURE TYPE	Indoor (NEMA 1)
PERFORMANCE WARRANTY	15 Years or 8,000 Cycles to 70%* Remaining Capacity (100% DoD)
COOLING NOISE dB	65dB
C-RATE	1C*
CHEMISTRY	Lithium Ferrous Phosphate (LiFePO4)
WEIGHT	1,300 lb (590 kg) for 32kWh increment

* Refer to warranty documentation

Controller Specifications

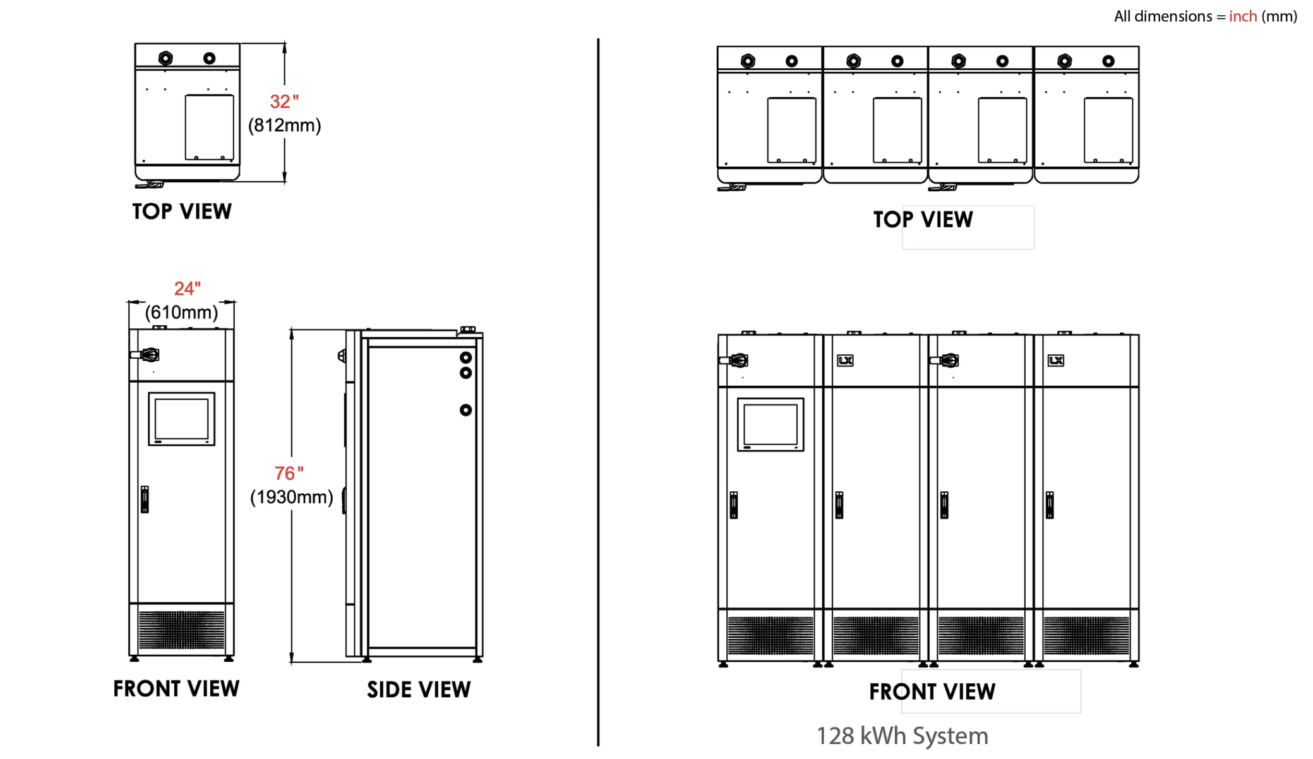
DATA ACCESS	Cloud, Local Area Network and/or Screen on LX

Compliance Information

CERTIFIED TO	UL 9540, UL 9540A, UL 1642, UL 1741, UL 1973, UN 38.3, UL 1741 SA, IEEE 1547, Rule 21, HECO Listed
EMISSIONS	FCC Part 15 Class B, ICES-003 Class B
VENTILATION	As required by your local AHJ
FIRE SUPRESSION	NFPA 13D or NFPA 13R *As applicable to your building*

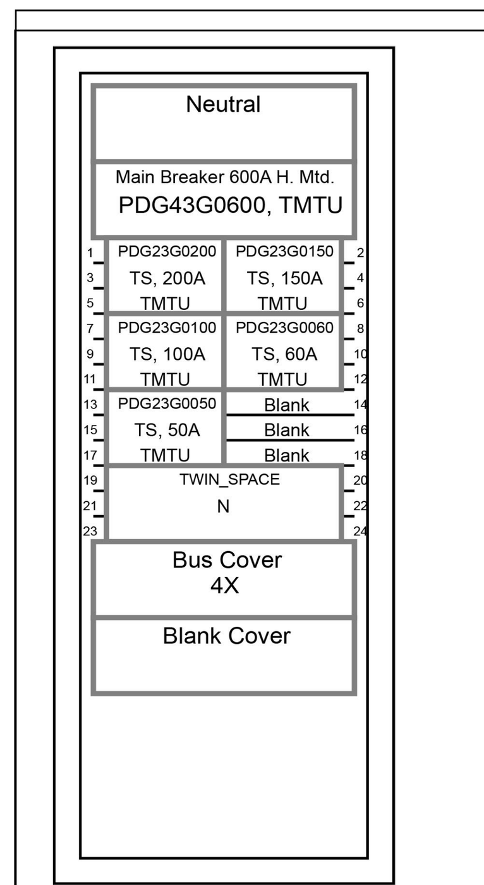
Intertek

All dimensions = inch (mm)



1.1-081622

Blue Planet Energy
55 Merchant St, 17th Floor
Honolulu, HI 96813
1.866.957.2246
sales@blueplanetenergy.com
blueplanetenergy.com



General Information **(Section 1 of 1)**

Service Voltage:	480Y/277V 3Ph 4W	**Enclosure:**	Type 1
Bus Rating & Type:	800A Copper	**Neutral Rating:**	800A
Ground Bar:	Std. Bolted Aluminum, Al or Cu cable		
S.C. Rating:	25k A.I.C. Fully Rated		
Main Device Type:	Main Breaker - Top Cable Entry		
Main Terminals:	Mechanical - (2) 500-750 kcmil (Cu/Al)		
Neutral Terminals:	Mechanical - (3) 1/0-750 kcmil (Cu/Al)		
Box Catalog No.:	BX3673P		
Trim:	Standard Covers Surface Mounted		
Box Dimensions:	73.50" [1866.9mm]H x 36.00" [914.4mm]W x 10.4" [264.2mm]D		
Min. Gutter Size:	Top = 10.625" [269.9mm] Bottom = 10.625" [269.9mm] Left = 6" [152.4mm] Right = 8" [203.2mm]		

Panel ID Nameplate: **(1) GP-1**
Type: Plastic, adhesive-backed **(2) 480Y/277V 3Ph 4W**
Color: White with Black Letters **(3)**

UL

Circuit Directory: Plastic Sleeve with Card
Painted Box:ANSI 61
Main Circuit Breaker Trip Type: Thermal-Magnetic.
Seismic Label (IBC/CBC Seismic Qualified).
Heat Loss - Watts (Est.) = 352
Wire shall be based on the ampacity of 75°C rated conductors unless otherwise indicated.

Device Modifications:
Ref # **Description**

Notes:

Branch Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	200	Frame 2	225	25
1	3	150	Frame 2	225	25
1	3	100	Frame 2	100	25
1	3	60	Frame 2	100	25
1	3	50	Frame 2	100	25
1	3		TWIN_SPACE		

Main Devices

Qty	Poles	Trip	Frame	Amps	kAIC
1	3	600	Frame 4	800	25

The information on this document is created by Eaton Corporation. It is disclosed in confidence and it is only to be used for the purpose in which it is supplied.	PREPARED BY LACEY FERRARO DATE 2/23/2023	**Eaton**	
	APPROVED BY DATE	JOB NAME ULL CLECO Microgrid DESIGNATION GP-1	
	VERSION 1.0.0.57	TYPE PRL4X	DRAWING TYPE Customer Approval
NEG-ALT Number V3DZ0213X3K2-0000	REVISION 0 / DWG SIZE A	G.O.	ITEM / SHEET 1 of 2

Pow-R-Line4X Device Specifications

Ckt #s	Nameplate	Device	Trip	Terminal	Modifications
Main		PDG43G0600	600	(2) 500-750 kcmil (Cu/Al)	
1,3,5		PDG23G0200	200	(1) #4-4/0 (Cu/Al)	
2,4,6		PDG23G0150	150	(1) #4-4/0 (Cu/Al)	
7,9,11		PDG23G0100	100	(1) #14-1/0 (Cu/Al)	
8,10,12		PDG23G0060	60	(1) #14-1/0 (Cu/Al)	
13,15,17		PDG23G0050	50	(1) #14-1/0 (Cu/Al)	
19,20,21 22,23,24		TWIN_SPACE	50	None Available	

The information on this document is created by Eaton Corporation. It is disclosed in confidence and it is only to be used for the purpose in which it is supplied.	PREPARED BY LACEY FERRARO DATE 2/23/2023	**Eaton**	
	APPROVED BY DATE	JOB NAME ULL CLECO Microgrid DESIGNATION GP-1	
	VERSION 1.0.0.57	TYPE PRL4X	DRAWING TYPE Customer Approval
NEG-ALT Number V3DZ0213X3K2-0000	REVISION 0 / DWG SIZE A	G.O.	ITEM / SHEET 2 of 2

Dry-Type Transformers General Information

- Standard Transformer Catalog Number: V48M47T2216
- Transformer Type: General Purpose Vented
- Phase: 3
- kVA: 225
- Primary Volts: 480
- Secondary Volts: 480Y/277
- Temperature Rise: 150C with 220C Insulation System
- Winding Material: Aluminum
- Enclosure Type: NEMA 2 (for N3R, select Weather Shield in Mods tab)
- Frequency (Hz): 60
- Frame: 944
- Wiring Diagram: 280B
- Weight (lbs.): 1912
- Impedance (%): 5.34
- UL Listed: Y
- X/R: 3.68

Standard Values

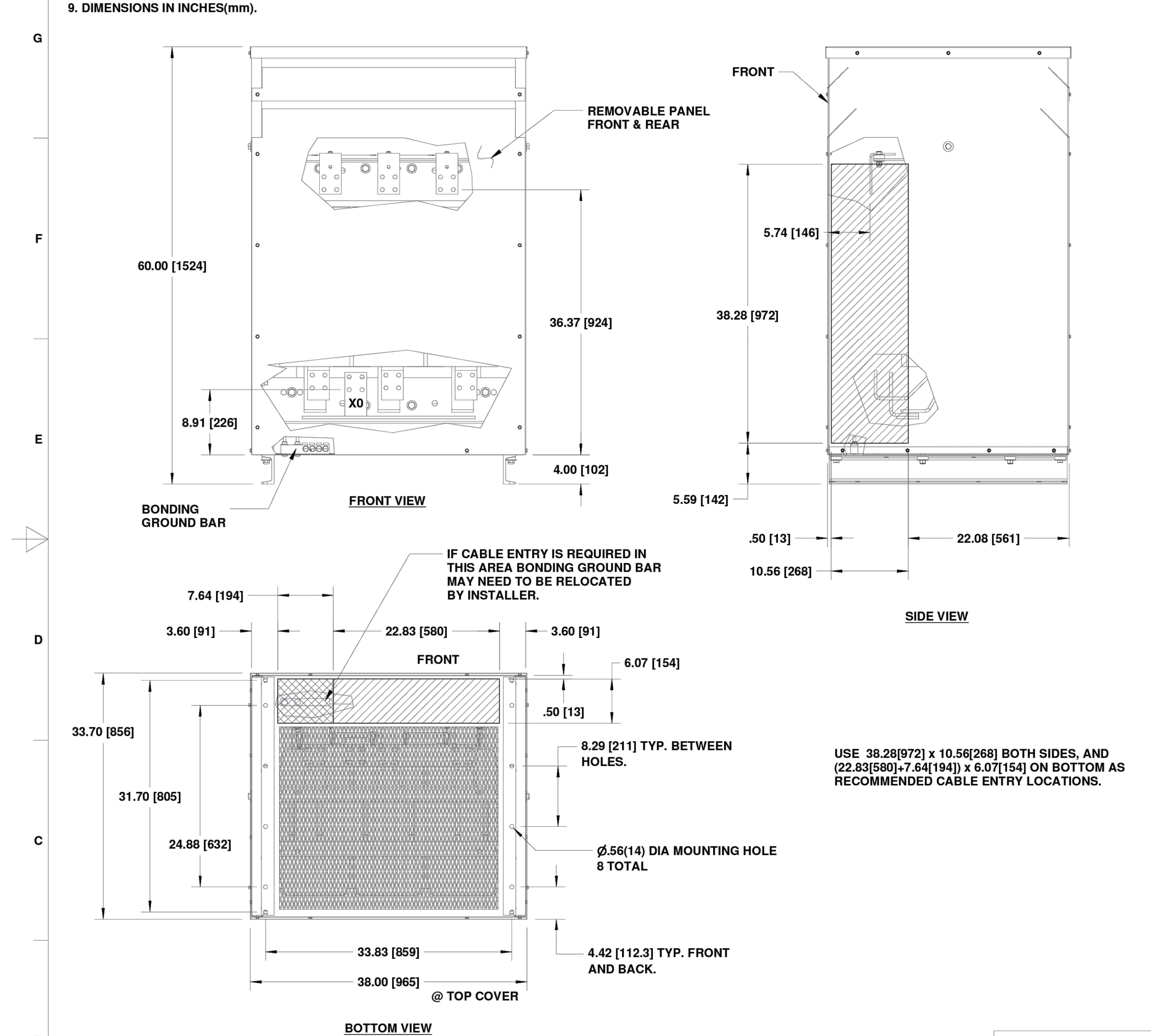
- K-Factor: 1
- TAPS: 2@+2.5%, 4@-2.5%
- Sound Reduction (dB): 0
- NEMA ST20 Sound Level (dB): 55
- DOE 10 CFR Part 431 (2016) Efficient: Y
- Infrared Viewing Window: None

Field-Installed Accessories Included

- Lug Kit: LKS3 (1PH 100-167KVA or 3PH 150-300K)
- Weather Shield: WS61

The information on this document is created by Eaton. It is disclosed in confidence and it is only to be used for the purpose in which it is supplied.	PREPARED BY LACEY FERRARO DATE 2/23/2023	**Eaton**	
	APPROVED BY DATE	JOB NAME ULL CLECO Microgrid DESIGNATION 225KVA	
	VERSION 1.0.0.4	TYPE Dry-Type Transformer	DRAWING TYPE Customer Appr.
NEG-ALT Number V3DZ0213X3K2-0000	REVISION 0 / DWG SIZE A	G.O.	ITEM / SHEET 1 of 1

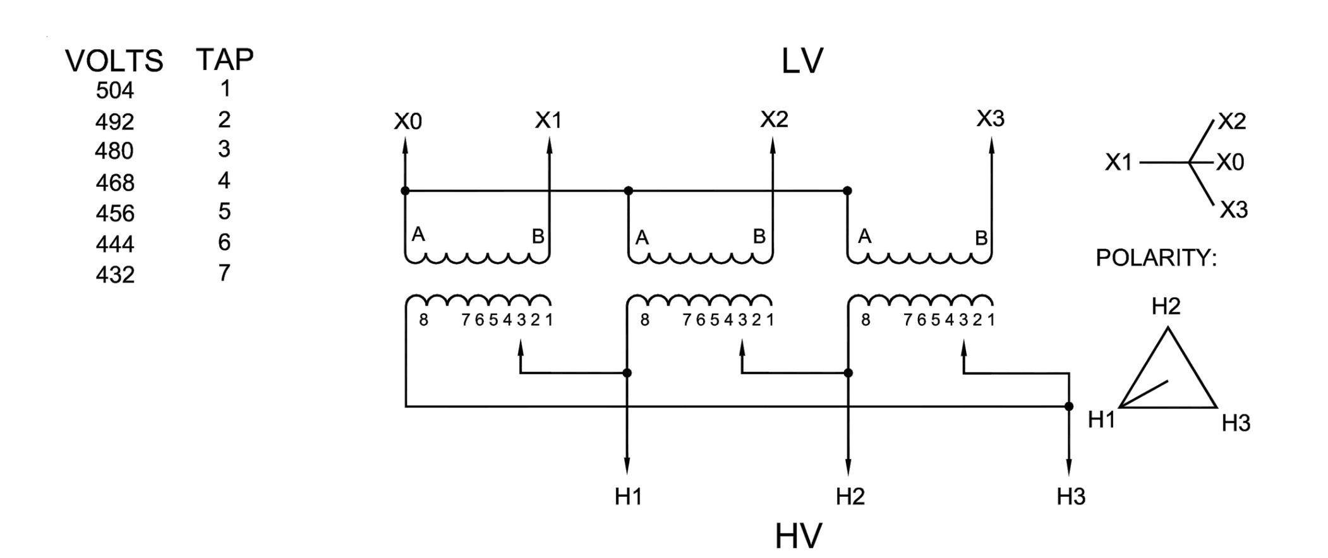
NOTE:
1. ALL UNITS ARE DESIGNED IN ACCORDANCE WITH APPLICABLE NEMA, UL, ANSI, AND IEEE STANDARDS.
2. DRY-TYPE VENTILATED, CLASS AA, NEMA TYPE 2 ENCLOSURE.
3. FOR NEMA 3R OUTDOOR APPLICATION, USE WEATHERSHIELD # WS61.
4. TRANSFORMERS ARE FLOOR MOUNTED.
5. 220°C CLASS INSULATION SYSTEM.
6. PAINT COLOR IS ANSI #61.
7. ALUMINUM UNITS HAVE ALUMINUM WINDINGS AND TERMINATIONS. COPPER UNITS HAVE COPPER WINDINGS AND TERMINATIONS.
8. TRANSFORMER CAN BE INSTALLED AT A MIN. DISTANCE TO BACK AND SIDE WALLS OF 2 INCHES AND TO A 6 INCHES MIN. DISTANCE TO BACK WALLS WHEN WEATHERSHIELDS ARE NEEDED. WALLMOUNT BRACKETS CANNOT BE USED IN COMBINATION WITH WEATHERSHIELDS.
9. DIMENSIONS IN INCHES(mm).



REV	DESCRIPTION	DFTR	APPD	DATE
7	CO-0204443	J.C.S.	D.G.	31/03/2021
6	ECO-164756	J.C.S.	C.B.	05/05/2019
5	ECO-133517	J.G.	C.B.	15/01/2018

PRODUCT CODE: · FEDERAL ID NO. ·
DFTR S.B. DATE 29/10/2015 — APPD D.G. DATE 29/10/2015 — S.O. ·
THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.
EATON
TITLE DRY TYPE TRANSFORMER OUTLINE
TYPE DRY TYPE TRANSFORMER — OUTLINE
REVISION 7 — G.O. · — DWG FR944 — SHEET 1 OF 1

GO/NEG-Alt-Date:		Job Name:
V3DZ0213X3K2-0000-2/23/2023		ULL CLECO Microgrid
Item Number:	**Catalog Number:** V48M47T2216	**Designation:** 225KVA



PRODUCT CODE: TRANSFORMERS — FEDERAL ID NO.
DFTR HEG DATE 12/01/01 — APPD EER DATE 12/01/01
THE INFORMATION ON THIS DOCUMENT WAS CREATED BY EATON CORPORATION. IT WAS DISCLOSED IN CONFIDENCE AND IS ONLY TO BE USED FOR THE PURPOSE IN WHICH IT WAS SUPPLIED.
EATON
TITLE DRY TYPE TRANSFORMER WIRING SCHEMATIC
TYPE DRY TYPE TRANSFORMER — WIRING
REVISION 04 — DWG 280B — SHEET 1 OF 01

GO/NEG-Alt-Date:		Job Name:
V3DZ0213X3K2-0000-2/23/2023		ULL CLECO Microgrid
Item Number:	**Catalog Number:** V48M47T2216	**Designation:** 225KVA

Equipment Data Sheets

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS
PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions

No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd
Date: 09/15/2022
Scale: N/A
Sheet: PV-10.5

POWERSCOUT™ 48 HD

NETWORKED MULTI-CIRCUIT METERING

REVENUE GRADE INSTRUMENTS FOR SUPERIOR ENERGY MEASUREMENT

MAXIMUM FLEXIBILITY FOR MONITORING

The PowerScout 48 HD is a versatile, multi-channel instrument. The flexible design allows it to be configured for monitoring multiple electrical circuits. It can be supplied with any of DENT's internally-shunted, 333 mV output split-core or RōCoil CTs. Monitor any combination of up to 16 three-phase or 48 single-phase electrical devices with a single PowerScout HD. With data updates every 1 second and ANSI C12.20-2010 Class 0.2 revenue grade accuracy (depending on CT), the PowerScout 48 HD is well-suited for data center monitoring, tenant submetering, and for accountability metering in commercial, retail, and industrial facilities.

INDUSTRY-STANDARD MODBUS OR BACNET

The PowerScout 48 HD supports both Modbus (based on SunSpec IEEE-754) and BACnet communications protocols. Communications interface can be accomplished through standard serial RS-485 or Ethernet using either Modbus, BACnet MS/TP, Modbus TCP, or BACnet IP protocols. Additionally, the PowerScout 48 HD features two pulse inputs.

EASY INSTALLATION

Every PowerScout is line powered and designed to operate on any voltage from 90-600VAC. Unique to the PowerScout 48 HD are two independent voltage inputs, allowing for the monitoring of customer-derived voltage networks. Modbus & BACnet protocols are field-selectable and any combination of split-core or flexible RōCoil CTs can be used. Configure the meter prior to installation using the ViewPoint HD software utility and a direct USB connection or by using the built-in web server. Eliminate expensive trips back into the field: patented* PhaseChek™ ensures proper CT-to-phase installation the first time.

*U.S. Patent and Trademark Office Patent No. 7,612,552

DENT INSTRUMENTS

5 YEAR WARRANTY

APPLICATIONS

- Data Centers
- Tenant Submetering
- Bi-Directional Metering
- Real-Time Power Monitoring in Commercial, Retail, and Industrial environments

FEATURES

- 48 channels: Multi-circuit submeter monitors voltage, current, power, energy, and many other electrical parameters on any combination of single and/or three-phase systems
- Two independent voltage inputs allow the PowerScout HD meter to be used on two systems simultaneously
- Line-Powered: 90-600V Phase-to-Phase Power Supply
- Revenue grade. ANSI C12.20-2010 Class 0.2
- Available with UL 94-V0 enclosure or as a circuit board on a mounting plate that helps facilitate easy, safe installation
- Safest installation ever: High-Voltage Cover offers additional level of protection
- The PowerScout HD uses both BACnet or Modbus protocol and features 2 digital pulse input ports. All models feature both serial and Ethernet.
- Floating Point: IEEE-754 data format allows for bidirectional monitoring and eliminates scaling factors
- Mix-and-match a full range of Split Core or RōCoil™ Rogowski-style CTs, including several revenue-grade options
- Display shows real-time information about the meter configuration and metered data
- PhaseChek™ confirms proper CT orientation
- UL Listed (enclosure version) or UL Recognized (plate and circuit board only version)
- CE Mark

POWERSCOUT™ 48 HD

KEY HARDWARE/SOFTWARE FEATURES

EASY DEPLOYMENT

Setting the PowerScout HD up for a new deployment has never been easier, thanks to two features:

Network Scan

Using ViewPoint HD Software, you can now quickly scan the local area network and find all the PowerScout HD meters installed on the network. The results page shows each meter's system description and even allows for some basic meter setup directly from the scan window. Use ViewPoint HD to give each meter a "friendly" name, such as "3rd Floor Utility Rm," to identify the right meter even faster.

Pre-Configuration

Maybe you have several meters that need to be configured the same way. Or, maybe you don't have the meter in your possession, but need to configure it ahead of time for an installer. It is now possible to build a meter configuration file without having a meter connected. This is especially helpful for teams who handle configuration and installation in two separate steps.

INTERVAL DATA RECORDING & RTC

The PowerScout HD Series features interval data recording of kWh. The meter's non-volatile memory stores up to 63 days of 15-minute kWh data that can be downloaded in the event of lost communication with the RTU. The CSV data file can be quickly downloaded through a direct USB or Ethernet connection using ViewPoint HD software and can be used to backfill any missing data. This feature works automatically in the background to record data - no configuration necessary.

In addition, the PowerScout HD Series has a capacitor-backed real-time clock (RTC) that is used to ensure an accurate time stamp on all recorded data records. Unlike other systems, there is no battery to change and the capacitor retains calendar time for up to 1 week. The clock can be synchronized with the PC clock during meter setup.

PULSE INPUTS

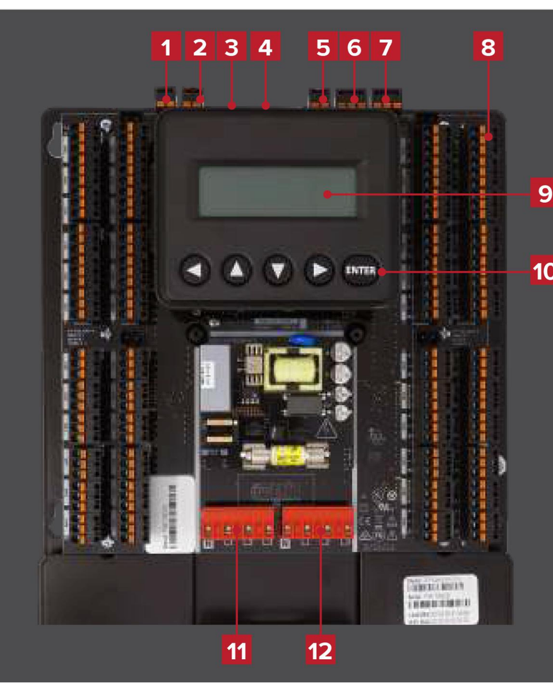
Correlate the consumption of a variety of systems using the standard dry contact pulse inputs. Configure each of the input channels independently with customizable units of measure (i.e., gallons) within ViewPoint HD Software. The PowerScout HD pulse inputs are compatible with "low speed" meters. PowerScout 48 HD meters (hardware revision I and later) are equipped with two pulse inputs.

ALARMS

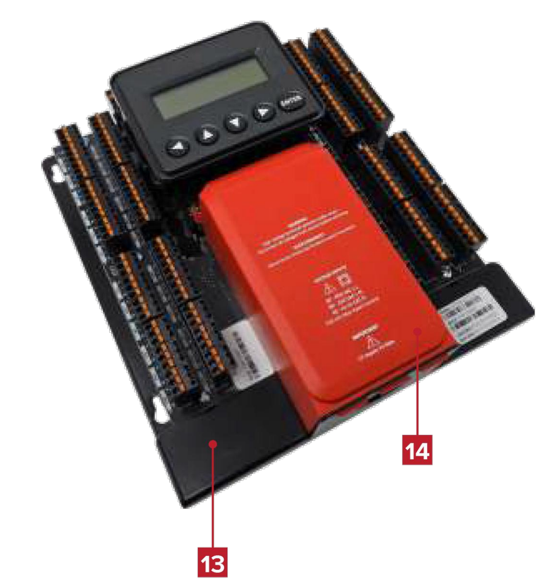
The PowerScout HD power meter has the ability to set alarms on any meter channel. Alarms can be set through ViewPoint HD software to be triggered by voltage and/or current over or under events. The persistence setting is also adjustable within the software to allow start-up on transients.

POWERSCOUT™ 48 HD

ANATOMY



1. Pulse Input 1
2. Pulse Input 2
3. Ethernet
4. USB
5. 12V Out (2W)
6. RS-485
7. Alarm
8. CT Connections (x48)
9. Display
10. Navigation Buttons
11. Voltage Input 1
12. Voltage Input 2
13. Mounting Plate (Optional)
14. High Voltage Cover (IP30)
15. 1" EMT Conduit Connection
16. ABS Plastic Enclosure



Detailed information about the PowerScout HD meter hardware and ViewPoint HD Software can be found in the Operator's Guide.

POWERSCOUT™ 48 HD SPECIFICATIONS

TECHNICAL	
SERVICE TYPE	Single Phase, Split Phase, Three Phase-Four Wire (WYE), Three Phase-Three Wire (Delta)
POWER	From L1 Phase to L2 Phase. 90-600VAC RMS CAT III 50/60Hz, 500mA AC Max. Use of 12 volt auxiliary output requires 100 VAC minimum input voltage.
AC PROTECTION	0.5A Fuse 200kA interrupt capacity
POWER OUT	Unregulated 12VDC output, 200 mA, self-resetting fuse.
VOLTAGE CHANNELS	90-346 Volts AC Line-to-Neutral, 600V Line-to-Line, CAT III. Two voltage reference inputs.
CURRENT CHANNELS	48 channels, 0.525 VAC max, 333 mV CTs, 0-4,000 Amps depending on CT
MAXIMUM CURRENT INPUT	150% of current transducer rating (mV CTs) to maintain accuracy. Measure up to 4000A with RōCoil CTs
MEASUREMENT TYPE	True RMS using high-speed digital signal processing (DSP) with continuous sampling
LINE FREQUENCY	50/60 Hz (45-70 Hz measurable range). Measurement taken L1-N.
WAVEFORM SAMPLING	1.8 kHz
PARAMETER UPDATE RATE	1 second
MEASUREMENTS	Volts, Amps, kW, kVAR, kVA, aPF, dPF, kW demand, kVA demand, Import (Received) kWh, Export (Delivered) kWh, Net kWh, Import (Received) kVAh, Export (Delivered) kVAh, Net kVAh, Import (Received) kVARh, Export (Delivered) kVARh, Net kVARh, THD, Theta, Frequency. All parameters for each phase and element total
ACCURACY	0.2% ANSI C12.20-2010 Class 0.2
RESOLUTION	Values in IEEE-754 single precision floating point format (32 bit).
DISPLAY	Optional 4-line display, tri-color backlight (PhaseChek™)
ALARM OUTPUT	Over/Under Voltage & Current (SPDT Relay - 30 VDC)
PULSE INPUTS**	Two inputs. 3.3V sourcing voltage (current limited) to customer dry contact pulse output. Max pulse rate 10 Hz (50 mSec minimum transition time).

COMMUNICATIONS	
HARDWARE	RS-485, Ethernet, and USB (for configuration only)
SUPPORTED PROTOCOLS	Modbus RTU, BACnet MS/TP, Modbus TCP or BACnet IP
MAX COMMUNICATION LENGTH	1200 meters with Data Range of 100K bits/second or less
COMMUNICATION RATE (BAUD)	9600 (Default), 19200, 38400, 57600, 76800, 115200
DATA BITS	8
PARITY	None, Even, Odd
STOP BIT	2, 1
TERMINATION	None provided

MECHANICAL	
WIRE CONNECTIONS	12-28 AWG 600 VAC, Voltage connection must be #14 AWG or larger & 600 VAC rated
MOUNTING	Panel Mount/Enclosure
HIGH VOLTAGE COVER	IP30. Available with PS48 Enclosure & Plate Models
OPERATING TEMPERATURE*	-20° to 60°C (-4° to 140°F)***
HUMIDITY	5% to 95% non-condensing
ENCLOSURE	ABS Plastic, 94-V0 flammability rating. Connections: 1" EMT conduit
ENCLOSURE DIMENSIONS	(L) 33.7cm x (W) 25.1cm x (H) 8.0 cm (13.3" x 9.8" x 3.1")
MOUNTING PLATE DIMENSIONS	(L) 26.2cm x (W) 24.1cm x (H) 8.0 cm (10.3" x 9.5" x 3.1")
PCBA DIMENSIONS	(L) 21.6cm x (W) 21.6cm x (H) 6.4 cm (8.5" x 8.5" x 2.5")

CERTIFICATIONS	
UL RECOGNIZED (E186827)	Applies to mounting plate and circuit board only version Conforms to UL Std 61010-1 3rd Edition Certified to CSA Std C22.2 No. 61010-1 3rd Edition
UL LISTED (E186827)	Applies to indoor enclosure version Conforms to UL Std 61010-1 3rd Edition Certified to CSA Std C22.2 No. 61010-1 3rd Edition
CE	EN 61000-6-4: Class A
ANSI C12.20 CLASS 0.2	NIST Traceable Calibration

VIEWPOINT HD SOFTWARE	
OPERATING SYSTEM	Windows® 10, Windows® 8, Windows® 7
COMMUNICATIONS	USB & Ethernet standard. One USB Port required on PC.
SECURITY	2 levels of PIN protection (Read/Write or Read-Only)

ORDERING PART NUMBERS	
PS48HD-C-D-N	POWERSCOUT 48 HD, WITH ENCLOSURE + DISPLAY
PS48HD-C-N-N	POWERSCOUT 48 HD, WITH ENCLOSURE, NO DISPLAY
PS48HD-P-D-N	POWERSCOUT 48 HD, MOUNTING PLATE + DISPLAY
PS48HD-P-N-N	POWERSCOUT 48 HD, MOUNTING PLATE, NO DISPLAY

*At -20°C, LCD display could be illegible. Meter voltage @ -20°C must exceed 100 VAC to power the meter.
**Pulse Inputs on PS48 meters Rev I or later.
***Colder temperatures require higher voltage to power the meter.

DISTRIBUTOR:
PLACE CONTACT INFO HERE

DENT Instruments, Inc.
Energy & Power Measurement Solutions
An ISO 9001:2008 Certified Company
925 SW EMKAY DRIVE
BEND, OREGON 97702 USA
541.388.4774 | 800.388.0770
www.DENTinstruments.com

Acuvim-L

Multifunction Power & Energy Meter Datasheet

ACCUENERGY

DESCRIPTION

Designed for a wide range of standard metering projects, the Acuvim L is a cost-effective, multifunction power meter that combines value and high-performance with easy integration into panel or device monitoring applications. With multiple communication options including Modbus-RTU, PROFIBUS, Modbus-TCP/IP, and BACnet-IP through optional expansion modules and revenue grade accuracy, the Acuvim L can be configured as either a panel-mount device, as a DIN rail mount transducer, or installed in a pre-configured, pre-wired AcuPanel for extreme protection in even the toughest application environments.

FEATURES

- True RMS, revenue grade measurements: ANSI C12.20 class 0.5 & IEC 62053-22 class 0.5s
- Multiple communication options including Modbus-TCP/IP, BACnet-IP, PROFIBUS, Modbus-RTU, I/O communications, and more
- NEMA 3 front panel protection for installation in harsh environments
- Available compatibility with multiple CT output options including 5A, 1A, 333mV, and Rogowski coils
- Perform power quality analysis, measure individual harmonics up to the 63rd order, and monitor THD
- Three form factors: Panel mount meter with digital display, DIN rail mount transducer, or in a pre-wired, pre-configured panel

SPECIFICATIONS

Metering

PARAMETERS	ACCURACY	RESOLUTION	RANGE
Voltage	0.2%	0.1V	20V~1000kV
Current	0.2%	0.001A	0~50000A
Current Demand	0.2%	0.001A	0~50000A
Power	0.5%	1W	-9999MW~9999MW
Reactive Power	0.5%	1var	-9999Mvar~9999Mvar
Apparent Power	0.5%	1VA	0~9999MVA
Power Demand	0.5%	1W	-9999MW~9999MW
Reactive Power Demand	0.5%	1var	-9999Mvar~9999Mvar
Apparent Power Demand	0.5%	1VA	0~9999MVA
Power Factor	0.5%	0.001	-1.0~1.0
Frequency	0.05%	0.01Hz	45~65Hz
Energy	0.5%	0.1kWh	0~99999999.9kWh
Reactive Power	0.5%	0.1kvarh	0~99999999.9kvarh
Apparent Energy	0.5%	0.1kVAh	0~99999999.9kVAh
Harmonics	1.0%	0.01%	
Meter Running Time		0.01hrs	0~9999999.99hrs
Load Running Time		0.01hrs	0~9999999.99hrs
Meter Total Running Time		0.01hrs	0~9999999.99hrs

Input

CURRENT INPUTS *(EACH CHANNEL)*	
Nominal Current Options	① 5A, ② 1A, ③ 1A(333mV), ④ 1A (100mV Rope- CT), ⑤ 1A(80mA/100mA/200mA),
Metering Range	① 0~10A, ② 0~2A, ③ 0~1.2A, ④ 0~1.2A, ⑤ 0~1.2A, ⑥ 0~1.2A
Pickup Current	① 5mA, ② 1mA, ③ 5mA, ④ 5mA, ⑤ 5mA
Withstand	20A RMS continuous 100A RMS for 1 second, non-recurring
Burden	0.05VA (Typical) @ 5A RMS
Accuracy	0.2%

VOLTAGE INPUTS *(EACH CHANNEL)*	
Nominal Full Scale	400Vac L-N, 690Vac L-L (+20%)
Withstand	1500Vac Continuous 2500Vac, 50/60Hz for 1 Minute
Input Impedance	2MΩ per phase
Metering Frequency	45Hz~65Hz
Pickup Voltage	10Vac
Accuracy	0.2%

ENERGY ACCURACY	
Active	Class 0.5s (According to IEC 62053-22) Class 0.5 (According to ANSI C12.20)
Reactive	Class 2 (According to IEC 62053-23)

HARMONIC RESOLUTION	
Metered Value	2^{nd}~63^{rd} harmonics

I/O Options

DIGITAL INPUT	
Input Type	Dry Contact
Input Resistance	4kΩ
Input Current (Max)	7.5mA
Pulse Frequency (Max)	100Hz, 50% Duty Ratio
SOE Resolution	2ms

DIGITAL OUTPUT (DO) *(Photo-MOS)*	
Voltage Range	0~250Vac/dc
Load Current	100mA (Max)
Output Frequency	25Hz, 50% Duty Ratio
Isolation Voltage	2500V

RELAY OUTPUT *(RO)*	
Switching Voltage (Max)	250Vac, 30Vdc
Load Current	5A(R), 2A(L)
Set Time	10ms (Max)
Contact Resistance	30mΩ (Max)
Isolation Voltage	2500Vac
Mechanical Life	$1.5x10^7$

SPECIFICATIONS

Control Power

AC/DC CONTROL POWER	
Operating Range	100~415Vac, 50/60Hz; 100~300Vdc
Burden	3W
Frequency	50/60Hz
Withstand	3250Vac, 50/60Hz for 1 minute
Installation Category III (Distribution)	

LOW VOLTAGE DC CONTROL POWER *(OPTIONAL)*	
Operating Range	20~60VDC
Burden	3W

Standard Compliance & Certifications

Measurement Standard	IEC 61036 Class 1, ANSI C12.16 Class 10
Environmental Standard	IEC 60068-2
Safety Standard	IEC 61010-1, UL 61010-1
EMC Standard	IEC 61000-4/2-3-4-5-6-8-11
Outlines Standard	DIN 43700, ANSI C39.1

Communications

RS-485 (Optional)	Modbus-RTU Protocol 2-wire connection, Half-duplex, Isolated 1200 to 38400 baud rate
Second RS-485 Port (Optional Module)	Option for Acuvim-CL, Acuvim-EL
PROFIBUS (Optional Module)	PROFIBUS-DP/V0 Protocol Works as PROFIBUS slave, baud rate adaptive, up to 12M Typical input bytes: 32, typical output bytes: 32 PROFIBUS standard according to EN 50170 Vol. 2
L-WEB (Optional Module) (Ethernet RJ45)	Protocol: Modbus-TCP/IP, DNP3.0 over IP V2, BACnet-IP, SNMP V3, HTTP/HTTPs post, FTP post, SMTP, NTP, HTTPs webserver; 4GB Datalogging memory

Operating Environment

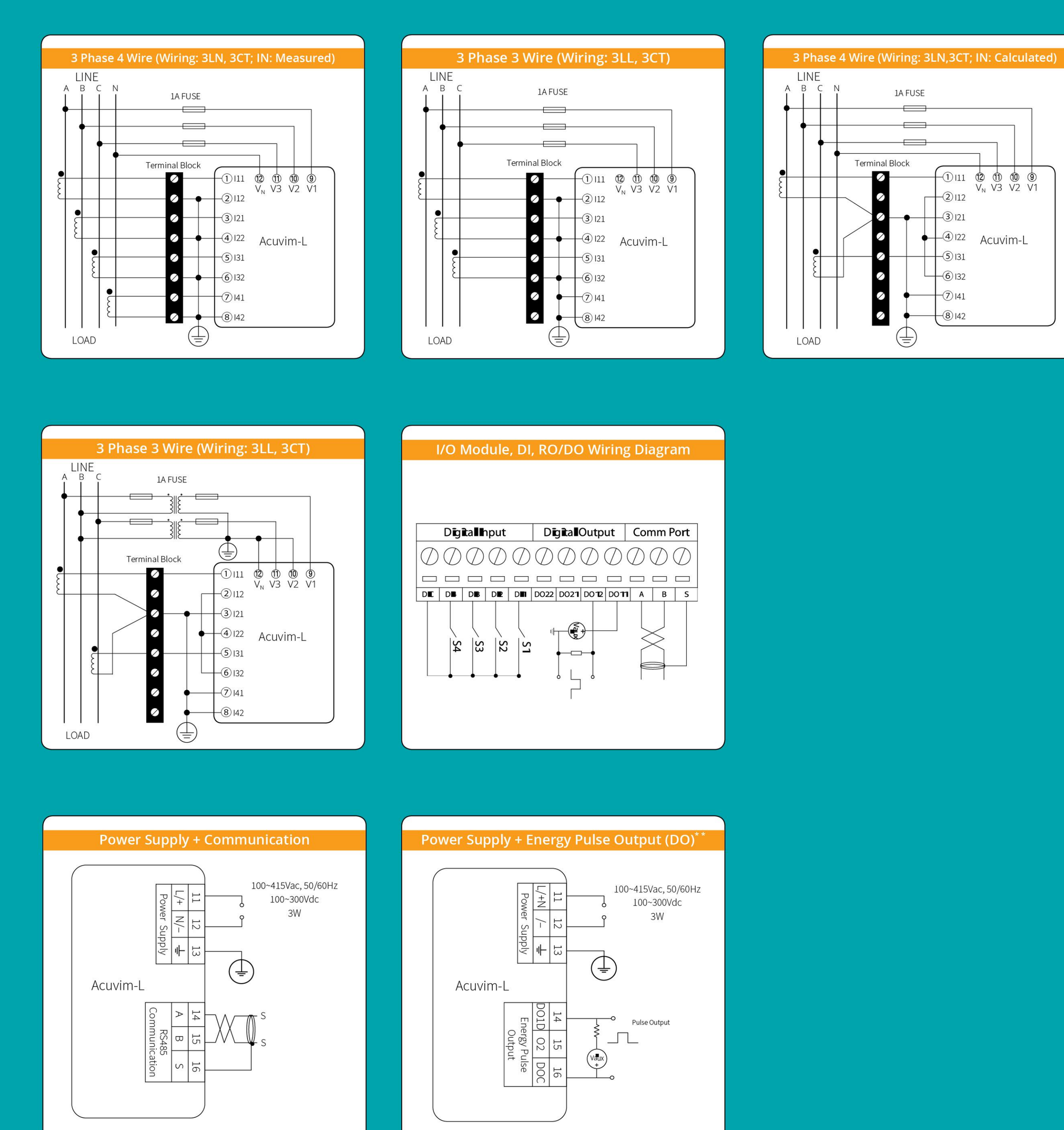
Operating Temperature	-25°C to 70°C -13°F to 158°F
Storage Temperature	-40°C to 85°C -40°F to 176°F
Relative Humidity	5% to 95% Non-Condensing

FUNCTION LIST

● Function; ⊙ Option; Blank NA

	Function	Parameters	Acuvim-BL	Acuvim-CL	Acuvim-EL
Real Time Metering	Line to Neutral Voltages Uln	Uln 1, Uln 2, Uln 3, Uln avg	●	●	●
	Line to Line Voltages Ull	Ull 12, Ull 23, Ull 31, Ull avg	●	●	●
	Current	I 1, I 2, I 3, I n, I 4, I avg, I tot	●	●	●
	Active Power	watt 1, watt 2, watt 3, watt tot	●	●	●
	Reactive Power	var 1, var 2, var 3, var tot	●	●	●
	Apparent Power	va 1, va 2, va 3, va tot	●	●	●
	Power Factor	PF 1, PF 2, PF 3, PF	●	●	●
	Load Nature	L/C/R	●	●	●
	Frequency	F	●	●	●
Energy	Active Energy	Watt-hour Imp, Watt-hour Exp, Watt-hour Imp+Exp, Watt-hour Imp-Exp	●	●	●
		Watt-hour Q1, Watt-hour Q2, Watt-hour Q3, Watt-hour Q4		●	●
	Reactive Energy	Var-hour Imp, Var-hour Exp, Var-hour Imp+Exp, Var-hour Imp-Exp	●	●	●
		Var-hour Q1, Var-hour Q2, Var-hour Q3, Var-hour Q4		●	●
	Apparent Energy	VA-hour Imp, VA-hour Exp, VA-hour Imp+Exp, VA-hour Imp-Exp	●	●	●
		VA-hour Q1, VA-hour Q2, VA-hour Q3, VA-hour Q4		●	●
	Single-Phase Active Energy	Watt-hour Imp 1, Watt-hour Exp 1, Watt-hour Imp 2, Watt-hour Exp 2, Watt-hour Imp 3, Watt-hour Exp 3		●	●
	Single-Phase Reactive Energy	Var-hour Imp 1, Var-hour Exp 1, Var-hour Imp 2, Var-hour Exp 2, Var-hour Imp 3, Var-hour Exp 3		●	●
	Single-Phase Apparent Energy	VA-hour Imp 1, VA-hour Exp 1, VA-hour Imp 2, VA-hour Exp 2, VA-hour Imp 3, VA-hour Exp 3		●	●
Demand	Current Demand, Current Predicted Demand	I 1_Dmd, I 2_Dmd, I 3_Dmd, I 4_Dmd, I 1_Pre_Dmd, I 2_Pre_ Dmd, I 3_Pre_Dmd, I 4_Pre_Dmd	●	●	●
	Power Demand, Power Predicted Demand	P_Dmd, Q_Dmd, S_Dmd, P_Pre_Dmd, Q_Pre_Dmd, S_Pre_Dmd	●	●	●
Time	Real Time Clock	Year, Month, Date, Hour, Minute, Second	●	●	●
Hour	Meter Running Time	Hour	●	●	●
	Load Running Time	Hour	●	●	●
Wiring Check	Voltage/Current Wiring	Each phase of V & I loss or error	●	●	●
Data Logger	1MB Memory				●

WIRING DIAGRAMS



Note: ** Wiring diagram is only applicable to Acuvim BL.

SOLAR ALTERNATIVES

5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS

PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd

Date: 09/15/2022

Scale: N/A

Sheet: PV-10.6

Equipment Data Sheets

ETAP iCE Gateway (GW) Specification

ETAP iCE Gateway is designed to collect data from multiple devices and protocols and convert them to a single output protocol. It is available with multiple communication options including embedded Ethernet switches and built-in 4G/3G/GPRS modem. Direct IO capability can added using iRTUe devices.

Applications:

- Data Concentrator (Gateway)
- Bay Control Unit (BCU)

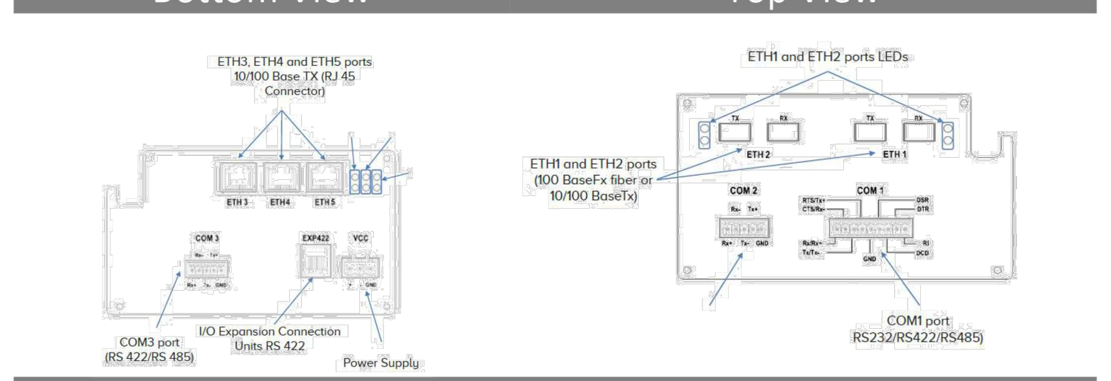
Features:

- IEC 62351 Cyber security compliance
- IEC61850-3 EMC compliant
- IEC61131-3 PLC automation programming
- IEEE1588 and NTP time synchronization
- Microseconds timestamp resolution and high
- Accuracy RTC with 1.5ppm time drift
- Two separate Ethernet interfaces with independent
- MAC address and multiple IP address configuration
- Internal switch with HSR/PRP/RSTP redundancy
- Multiple communication media support (serial, 10/100TX
- Ethernet, FX100 Ethernet, GPRS, 3G & 4G modems)
- Support for VLAN and VPN connections

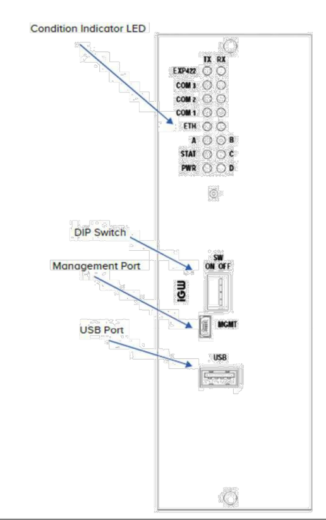
General	Configuration & Maintenance	Easy configuration with iConf tool. Internal web server, allowing the real time monitoring of the system and all internal parameters. Command console with complete information of packet exchange, on all available protocols. Local or remote maintenance connection using USB or Ethernet ports.
	RTC	High accuracy real time clock with 1.5ppm drift and microseconds resolution timestamp.
	CPU features	ARM Cortex-A7 @ 528MHz, with 4GBytes Flash and 256MBytes RAM.
	Communication ports options	**Serial ports:** up to 4 ports with RS232/RS485/RS422 selected by software. **Wireless connection:** internal 4G(LTE), 3G and GPRS modem. **Ethernet:** (2) 10/100BaseTX ports with independent MAC addresses. **Internal Ethernet Switch:** up to (4) 10/100BaseTX ports with RJ45 connection and (2) FX100 with ST, SC connectors or SFP interface, and supporting RSTP, HSR and PRP configurations.
Software application	Time synchronization	**Server:** NTP, IEC60870-5-101, IEC60870-5-104, DNP3.0, NTP. **Client:** IEEE1588(PTP), SNTP, IEC60870-5-101, IEC60870-5-102, IEC60870-5-103, IEC60870-5-104, DNP3.0, DLMS, Procome and Profibus DP.
	Redundancy	IRTU can be deployed on a hot-standby configuration, and including an optional redundant power supply.
	Security	IEC 62351-3 and IEC 62351-5 support, including TLS/SSL, SSH and VPN connections.
	IEC61131-3 Automation	Logic and PLC programming, with LD, FBD, ST and SFC editor.
	Logical and mathematical expressions	LUA language for creating simple and complex logic and mathematical expressions.
Device features	Power consumption	Depending on the model.
	Power supply	W : wide range, 32 - 250Vdc / 80 - 250Vac (2.5kVrms isolation) 24 : 19.5-60Vdc (2.5kVrms isolation)
	EMC type test	IEC 60950-1, IEC 60255-5:2000, EC 60255-22:2000, EN 55022, IEC 61000-6-4, IEC 61000-6-5, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-9, IEC 61000-4-10, IEC 61000-4-12, IEC 61000-4-16, IEC 61000-4-17, IEC 61000-4-18, IEC 61000-4-29
	Environmental	Operating temperature : -25ºC to +70ºC IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-3, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-38
	Vibration & Shock test	IEC 60068-2-6, IEC 60068-2-7
	Physical	External dimensions: 173 x 137 x 78.4 (mm) DIN Rail mounting

ETAP iCE Gateway (GW) Specification

Bottom View | Top View



Front View



Ordering Information

iCE GW-b#bbvvfs

Main board + communications
- **B#01** : (2) 10/100BaseTX RJ45 Ethernet + (4) serial RS232/RS485/RS422 ports
- **B#11** : (2) 10/100BaseTX RJ45 Ethernet + (2) serial RS232/RS485/RS422 ports
- **S#01** : PRP/HSR switch with (4) 10/100BaseTX and (2) FX100 Ethernet + (4) serial RS232/RS485/RS422 ports
- **S#31** : RSTP switch with (3) 10/100BaseTX and (2) FX100 Ethernet + (4) serial RS232/RS485/RS422 ports
- **M#01** : 2G modem + (2) 10/100BaseTX Ethernet + (3) serial RS232/RS485/RS422 ports
- **M#11** : 3G modem + (2) 10/100BaseTX Ethernet + (3) serial RS232/RS485/RS422 ports
- **M#21** : 4G(LTE) modem + (2) 10/100BaseTX Ethernet + (3) serial RS232/RS485/RS422 ports

Power supply
- **24** : 19.2-60 Vdc
- **WV** : 32-250Vdc // 80-250Vac

SD card
- **S** : Internal 8 GB microSD card
- **0** : No SD card

Fiber optic interfaces (S models)
- **T** : ST connectors
- **C** : SC connectors
- **F** : SFP interface
- **0** : No fiber optics available

SMAART POWER
INTELLIGENT & INNOVATIVE ENGINEERING

Microgrid Communication Signals

The following table shows the list of the monitored and controlled devices and the communication signals for each asset required for typical operation of microgrid controller. Alarms and additional signals will be also collected from each asset for monitoring and operation purpose but it is not required as part of the main operation of microgrid controller.

Asset	Controlled	Monitored	Monitored Signals	Controlled Signals
Diesel Generator	X	X	V_mag	P_ref
			V_ang	Q_ref
			P or I_mag	Start/Stop
			Q or I_ang	
			Online Status	
			Isoc/Droop	Isoc/Droop
			Fuel Level	
			Fuel Cost (To be Set by User)	
BESS	X	X	V_mag	P_ref
			V_ang	Q_ref
			P or I_mag	
			Q or I_ang	
			SOC	
			OprMode (Grid Following/Forming)	OprMode Ref (Grid Following/Forming)
			Online Status	
PV	X	X	V_mag	P_ref
			V_ang	Q_ref

SMAART POWER
INTELLIGENT & INNOVATIVE ENGINEERING

Asset	Controlled	Monitored	Monitored Signals	Controlled Signals
			P or I_mag	
			Q or I_ang	
			P_available	
			If curtailment is possible and required.	
			Online Status	
Load	X	X	V_mag	P_ref if controllable or shed-able
			V_ang	Q_ref if controllable or shed-able
			P or I_mag	
			Q or I_ang	
			Online Status	
PCC		X	V_mag	
			V_ang	
			P or I_mag	
			Q or I_ang	
			Online Status	
Circuit Breaker	X	X	Status	Close/Open

etap iCE RTUe

Remote Terminal Unit Expansion

RTUe is an auxiliary unit for data collection or SCADA servers that allow expansion of acquisition and command capabilities to fit the requirements for many applications or facilities. Each I/O board is equipped with a RS-422 serial expansion port or a duel Ethernet ST/SC connector to communicate with data collection servers, SCADA servers, and other I/O modules. Both use Modbus with events stack and timestamps or IEC 61850 GOOSE messaging.

Features

- iCE RTUe-D1D1: 48 Digital Inputs
- iCE RTUe-D1R1: 24 Digital Inputs + 8 Relay Outputs
- iCE RTUe-D1A1: 24 Digital Inputs + 8 Analog Inputs (0-20mA)
- I/O Expansion

I/O Expandability

I/O modules includes a RS-422 serial port to communicate with etap iCE, any data collection server, or SCADA server using a RS-422 expansion port. Connection is established with a 6-pair flat cable RJ12 connector. Each I/O auxiliary unit includes up to two I/O cards. Available I/O module configurations:

- 48 Digital Inputs
- 24 Digital Inputs + 8 Digital Output
- 24 Digital Inputs + 8 Analog Inputs (0-20mA)
- 16 Digital Outputs
- 16 Analog Inputs
- Other configurations upon request

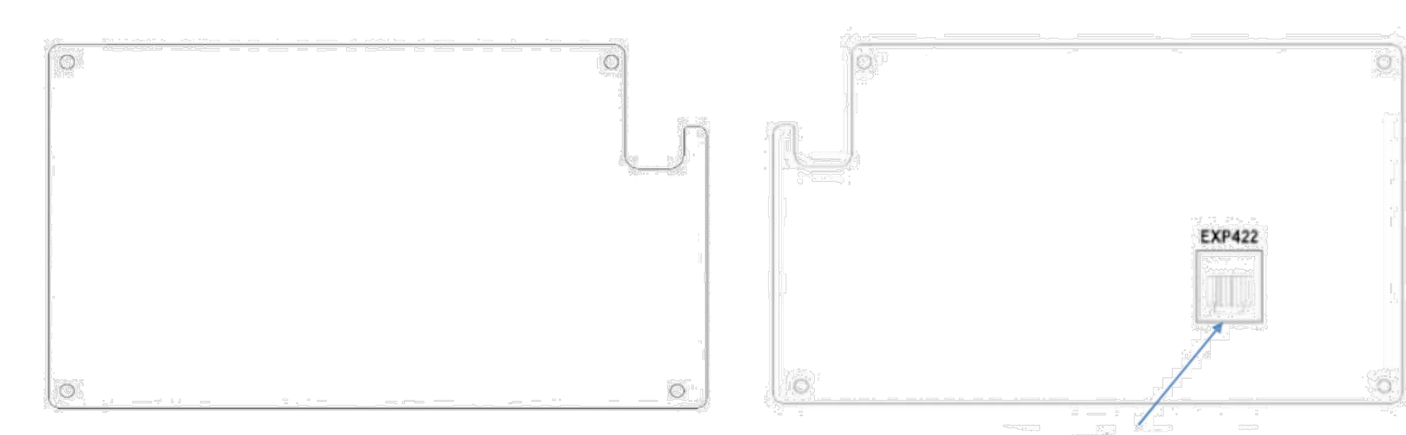
etap iCE

Specification Data Sheet

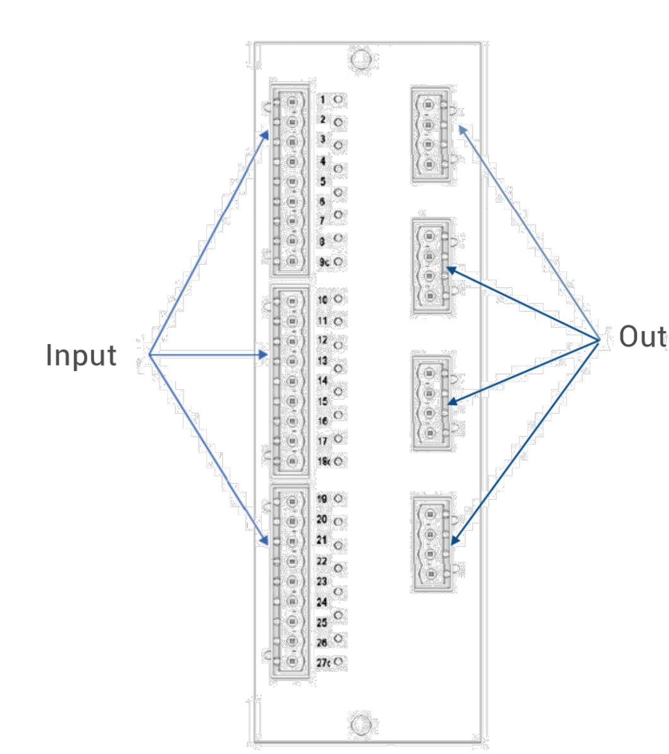
General	CPU Features	32 bits microcontroller @ 40MHz
	Communication Ports	(1) Serial RS-422 port to connect to RTU & GW devices (RS-422 Expansion port)
	Isolation	2.5kV rms
Digital Inputs	Activation/Deactivation	ON when Vi>85%Vn OFF when Vi<60%Vn. Other levels upon request
	Connectors	9 pin MVSTBR 2.5. Grouping digital inputs in isolated blocks of (8) inputs & (1) common terminal
	Isolation	6kV rms
Relay Outputs	Contact	Dry
	Connectors	4 pin MVSTBR 2.5 Grouping relay outputs in blocks of 2
	Breaking Capacity	8A @ 220Vac. 8/0.3/0.12A @ 30/110/220Vdc
Analog Inputs	Isolation	2.5kV rms
	Accuracy	0.15%
	Connectors	4 pin MVSTBR 2.5 Grouping analog inputs in blocks of 2
	Ranges	+/-20mA, +/-5mA, +/-10Vdc
Device Features	Power Consumption	Less than 3W
	Power Supply	W: wide range, 32 - 250Vdc / 80 - 250Vac (2.5kVrms isolation) 24: 19.5-60Vdc (2.5kVrms isolation)
	EMC Type Test	IEC 60950-1 IEC 60255-5:2000, EC 60255-22:2000, EN 55022 IEC 61000-6-4, IEC 61000-6-5, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-9, IEC 61000-4-10, IEC 61000-4-12, IEC 61000-4-16, IEC 61000-4-17, IEC 61000-4-18, IEC 61000-4-29
	Environmental	Operating temperature : -25ºC to +70ºC IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-3, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-38
	Vibration & Shock Test	IEC 60068-2-6, IEC 60068-2-7
	Physical	External dimensions: 173 x 137 x 78.4mm DIN rail mounting

etap iCE

Top View | Bottom View



Front View



Equipment Data Sheets

SOLAR ALTERNATIVES
5804 River Oaks Rd S
Elmwood, LA 70123
1-504-267-1660

General Notes

MICROGRID SYSTEM
WITH GROUND MOUNT PV

TABLE OF CONTENTS
PV-1.0 COVER PAGE
PV-1.1 GENERAL NOTES
PV-1.2 REFERENCE
PV-2.0 SITE PLAN
PV-3.0 SOLAR PLAN
PV-3.1 STRING PLAN
PV-3.2 SOLAR COMPONENTS
PV-3.3 SOLAR COMPONENTS
PV-3.4 SOLAR COMPONENTS
PV-5.0 EQUIPMENT PLAN
PV-5.1 PAD LAYOUT
PV-5.2 PAD DETAILS
PV-5.3 EQUIPMENT ROOM DETAIL
PV-5.4 EQUIPMENT ROOM ELEVATION
PV-5.5 EQUIPMENT ROOM ELEVATION
PV-5.6 EQUIPMENT ROOM ELEVATION
PV-5.7 OUTDOOR WALL ELEVATION
PV-6.0 ELECTRICAL DIAGRAM
PV-7.0 ELECTRICAL CALCULATIONS
PV-8.0 COMMUNICATIONS DIAGRAM
PV-9.0 PANELBOARDS
PV-10.0 EQUIPMENT DATA SHEETS

Revisions		
No.	Issue	Date
110822	REVIEW	
120222	REVIEW	
121222	REVIEW	
122022	REVIEW	
090823	BID SET	
092023	PAD UPDATE	

Project Name and Address

UNIVERSITY OF LOUISIANA AT LAFAYETTE-CLECO POWER
2008 HUTCHINSON AVE
CROWLEY, LA 70526

Drawn By: Andrea Lee, Nick Boyd
Date: 09/15/2022
Scale: N/A
Sheet: PV-10.7