



# Leon County

Board of County Commissioners

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(850) 606-5302 www.leoncountyfl.gov

Purchasing Division  
1800-3 Blair Stone Road  
(corner of Miccosukee and Blair Stone Roads)  
Tallahassee, Florida 32308  
(850) 606-1600

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County Attorney

October 4, 2011

RE: Bid Title: Leon County Sustainable Demonstration Center - Electrical; Bid  
No: BC-10-11-11-08  
Opening Date: Tuesday, October 11, 2011 at 4:00 PM

## ADDENDUM #1

Dear Vendor:

This letter serves as Addendum #1 for the above referenced project.

Please see the attached Addendums 1 for both the Electrical and the Photovoltaic Array from H2 Engineering, Inc.

Acknowledgment of this addendum is required as part of your bid submittal. Failure to acknowledge this addendum may result in rejection of your bid.

Should you have any questions, feel free to call me at (850) 606-1600.

Sincerely,

Keith M. Roberts  
Purchasing Director



# ADDENDUM #1(BID PACKAGE # 3)

To: Jeff Williams	From: Peter Lindstrom
Co: Leon County	Date: October 04, 2011
Project: Leon County Sustainable Demonstration Center	Job #: 11-05

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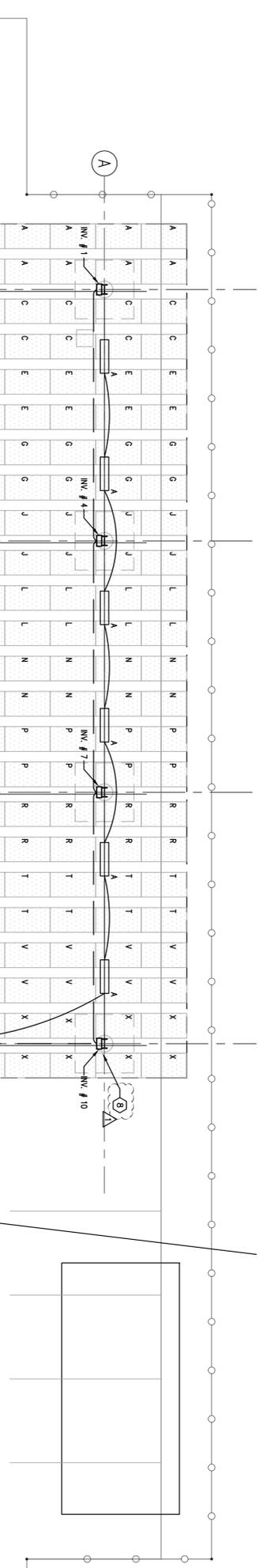
This Addendum forms a part of the Contract Documents and modifies the original Project Specifications, dated September 12, 2011, as noted below. This addendum consists one (1) revised drawing.

## **DRAWINGS:**

### **ELECTRICAL DRAWINGS**

- Item 1-1 **SHEET E1.1 – Floor Plan - Electrical**
- A. **ADD:** Detail 4/E1.1, Panel mounting.
  - B. **ADD:** Key note # 8.
  - C. **ADD:** Key note # 9.
  - D. **ADD:** Note to motor starter.

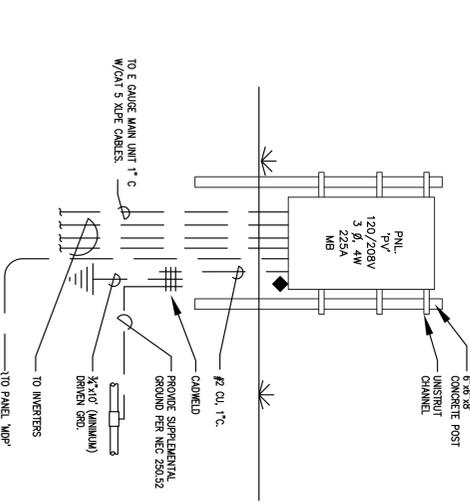
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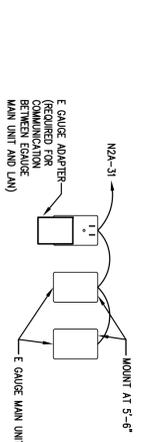
**1 FLOOR PLAN - ELECTRICAL**  
E11 1/8"=1'-0"

- KEY NOTES**
- 1 RECONNECT AIR HANDLING UNITS TO EXISTING WIRING. EXTEND FLEX WIRING AS NECESSARY TO REACH NEW AIR HANDLING UNIT CONNECTION POINT. RECONNECT DUCT SMOKE DETECTORS.
  - 2 PROVIDE NEW PIPES IN EXISTING FIBED DISCONNECTS AS INDICATED.
  - 3 RECONNECT DUCT SMOKE DETECTORS.
  - 4 PROVIDE TWO 20A, 120V CIRCUITS TO METL FIBER HEATER UNIT (LOCATED APPROXIMATELY 28FT TO THE SOUTH). ONE CIRCUIT SHALL SERVE SHIP PAIR. PROVIDE WIRING AND CONNECTIONS. PAIR PROVIDED BY OTHERS. THE SECOND CIRCUIT SHALL SERVE A 20A, 6FT WEATHER PROOF RECEPTACLE AND A LIGHT FIXTURE. LIGHT FIXTURE SHALL CONTAIN TWO 30W T8 LAMPS. SHALL BE RATED FOR MET LOCATION AND SHALL BE CONTROLLED BY A STANDARD 1000SEL SWITCH SUITABLE FOR MET LOCATION. COORDINATE MOUNTING DETAILS WITH MECHANICAL CONTRACTOR.
  - 5 PROVIDE A PERMANENT SIGN ON THE METER BASE READING: "WARNING - THIS EQUIPMENT POWERED BY PHOTOVOLTAIC POWER SOURCE."
  - 6 WIRE PARKING LOT LIGHTING HIGH PHOTOCELL AND THE CLOCK MOUNT PHOTOCELL ON BUILDING ROOF FACING NORTH. MOUNT TIME CLOCK NEXT TO PANEL N2A.
  - 7 RELOCATE WATER HEATER DISCONNECT SWITCH.
  - 8 MOUNT INVERTER ON COLUMN WITH TOP OF INVERTER 6" BELOW BEAM TYPICAL.
  - 9 GROUND STRUCTURE WITH #2 COPPER TO 3/4"x10" GROUND ROD.

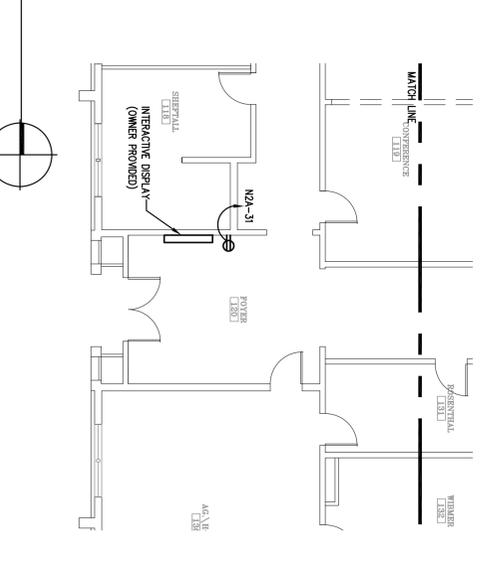
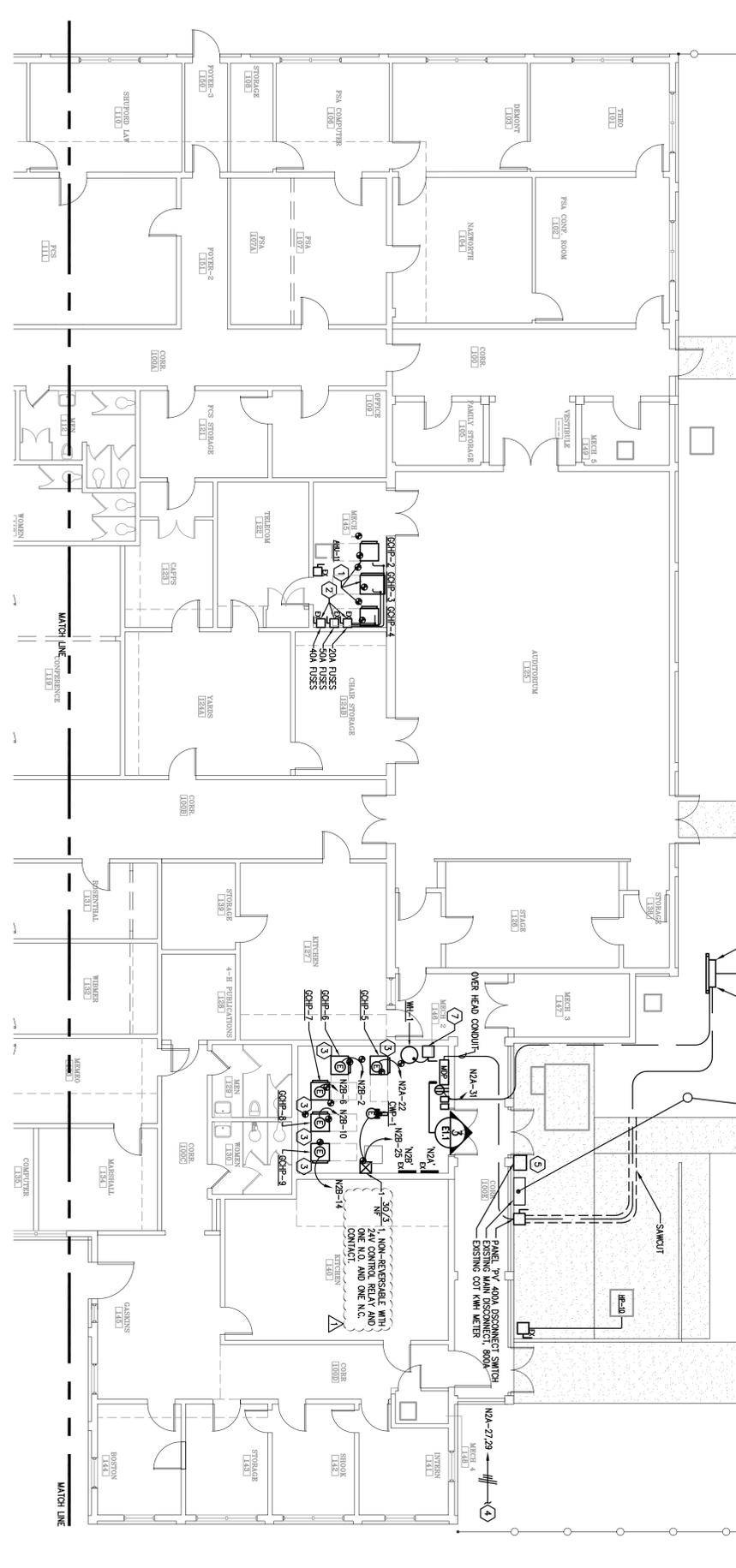
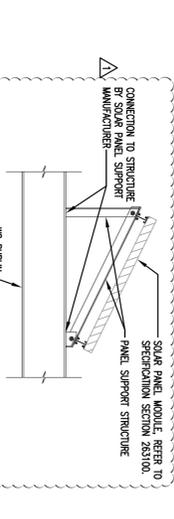
**2 PANEL MOUNTING DETAIL**  
E11 NTS



**3 E GAUGE MAIN UNIT AND ADAPTER**  
E11 NTS



**4 SOLAR PANEL MOUNTING DETAIL**  
E11 NTS



**BarneTT FRONCZAK BARLOWE ARCHITECTS**

Leon County - Sustainable Demonstration Center

10522  
Project Code  
12 SEPTEMBER 2011  
Date

100% Construction Documents

Revisions  
Addendum #1 1004-11

Drawn By: BRW  
Checked By: PCL

114 EAST 5th AVENUE PALMACHESSE, FL 32903  
PHONE: 561.224.7322  
WWW: WWW.BFBARLOWE.COM

THIS DOCUMENT HAS BEEN PREPARED BY THE ARCHITECTS AND ENGINEERS AND IS PROVIDED AS AN INSTRUMENT OF SERVICE. ITS USE FOR ANY OTHER PROJECT OR PURPOSE WITHOUT THE WRITTEN CONSENT OF THE ARCHITECTS AND ENGINEERS IS STRICTLY PROHIBITED.  
Peter C. Sanderson, P.E. #17026

**ENGINEERING**

**E1.1**

FLOOR PLAN - ELECTRICAL

Tablespace  
Ponds

**E1.1**

225 South Adams St. Tallahassee, FL 32301  
Phone 904.224.4301 Fax 904.561-9979



## SECTION 263100 - PHOTOVOLTAIC ENERGY EQUIPMENT

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

## 1.2 SUMMARY

- A. Section Includes Owner Furnished, Contractor Installed:
  - 1. PV modules (laminates in mounting frames).
  - 2. Inverters.
  - 3. Mounting structures.

## 1.3 DEFINITIONS

- A. CEC: California Energy Commission.
- B. IP Code: Required ingress protection to comply with IEC 60529.
- C. MPPT: Maximum power point tracking.
- D. PTC: USA standard conditions for PV.
- E. PV: Photovoltaic.
- F. STC: Standard Test Conditions defined in IEC 61215.

## 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Products shall meet the Made in America Act.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for PV panels.
  - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings: For PV modules.
  - 1. Include plans, elevations, sections, and mounting details.
  - 2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 3. Detail fabrication and assembly.

4. Include diagrams for power, signal, and control wiring.

C. Shop Drawings: Mounting

1. Shop drawings shall be signed and sealed by a structural engineer registered in the state of Florida. The design shall be in accordance with the Florida Building Code 2007 with 2008 and 2009 revisions. Wind loads shall be determined using ASCE 07-05 Figure 6-18A.
2. Include plans, elevations, sections, and connection details.
3. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
4. Detail fabrication and assembly.
5. The contractor shall provide a full set of signed and sealed drawings of the pre-engineered panel support system including all anchorages, attachments and connections, to the building inspector for inspections and a permanent set for the Building Inspection permit files.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.
- B. Sample Warranty: For manufacturer's special materials and workmanship warranty and minimum power output warranty.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For PV modules to include in operation and maintenance manuals.

#### 1.7 WARRANTY

- A. Manufacturer's Special Materials and Workmanship Warranty: Manufacturer agrees to repair or replace components of PV modules that fail in materials or workmanship within specified warranty period.
  1. Manufacturer's materials and workmanship warranties include, but are not limited to, the following:
    - a. Faulty operation of PV modules.
  2. Warranty Period: Five years from date of Substantial Completion.
- B. Manufacturer's Special Minimum Power Output Warranty: Manufacturer agrees to repair or replace components of PV modules that fail to exhibit the minimum power output within specified warranty period. Special warranty, applying to modules only, applies to materials only, on a prorated basis, for period specified.

1. Manufacturer's minimum power output warranties include, but are not limited to, the following warranty periods, from date of Substantial Completion:
  - a. Specified minimum power output to 80 percent or more, for a period of 25 years.
  - b. Specified minimum power output to 90 percent or more for a period of 10 years.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURED UNITS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Grape Solar GS-S-230-CS (230W) or comparable product by one of the following:
  1. BP Solar USA.
  2. Evergreen Solar, Inc.
  3. GE Energy; General Electric Company.
  4. Kyocera International, Inc.
  5. Mitsubishi Electric Corporation.
  6. Sanyo North America Corporation.
  7. Sharp Electronics Corporation.
  8. SunPower Corporation.
  9. Suntech Power.

### 2.2 SYSTEM DESCRIPTION

- A. Grid-Tied PV System:
  1. Connected via a utility meter to the electrical utility.
  2. An array of 264 modules to generate a total nominal 60,000 rated W.
  3. System Components:
    - a. Cell materials.
    - b. PV modules.
    - c. Array frame.
    - d. Inverter.
    - e. Overcurrent protection/combiner box.
    - f. Mounting structure.

### 2.3 MANUFACTURED UNITS

- A. Cell Materials: Monocrystalline.
  1. c-Si.
- B. Module Construction:
  1. Nominal Size: 42 inches wide by 63 inches long.
  2. Weight: 44 lb .

- C. Front Panel: Low iron tempered glass.
- D. Junction Box:
  - 1. IP Code: IP65.
- E. Series Fuse Rating: 10A.

## 2.4 CAPACITIES AND CHARACTERISTICS

- A. Minimum Electrical Characteristics:
  - 1. Rated Open Circuit Voltage ( $V_{oc}$ ): 59.1dc.
  - 2. Maximum System Voltage: 600V.
  - 3. Short-Circuit Temperature Coefficient: 3.1mA/degC.
  - 4. Rated Short-Circuit Current ( $I_{sc}$ ): 5.18A.
  - 5. Maximum Power at STC ( $P_{max}$ ): 230W.
- B. Additional Electrical Characteristics:
  - 1. PTC Rating: 209.4W.
  - 2. Module Efficiency: 13.5 percent.
- C. Normal Operating Temperature Characteristics (NOTC):
  - 1. Temperature Coefficient (NOTC  $P_{max}$ ): -1.03W/C.
  - 2. Temperature Coefficient (NOTC  $V_{oc}$ ): -0.207V/C.

## 2.5 MODULE FRAMING

- A. PV laminates mounted in anodized extruded-aluminum frames.
  - 1. Finish: Anodized aluminum.
    - a. Alloy and temper recommended by framing manufacturer for strength, corrosion resistance, and application of required finish.
    - b. Color: As indicated by manufacturer's designations.

## 2.6 INVERTER: Basis of Design: Sunny Boy SB 5000 US

- A. Control Type: Maximum power point tracker control.
- B. Inverter Electrical Characteristics:
  - 1. Maximum Recommended PV Input Power: 6250W.
  - 2. Maximum Voc: 600V.
  - 3. PV Start Voltage: 300V.
  - 4. MPPT Voltage Range: 250V-480V.
  - 5. Maximum Input Current: 21A.
  - 6. CEC Rated Power: 5000W.
  - 7. Nominal Output Voltage: 208V.
  - 8. Maximum Output Current: 24A.

- 9. Peak Efficiency: 96.7 percent.
- 10. CEC Weighted Efficiency: 95.5 percent.

C. Operating Conditions:

- 1. Operating Ambient Temperatures: 13 to 113 deg F .
- 2. Storage Temperature: Minus 40 to plus 122 deg F (minus 40 to plus 50 deg C).
- 3. Relative Humidity: 0 to 95 percent, noncondensing.

D. Not used.

E. Enclosure:

- 1. NEMA 250, Type 3R.
- 2. Enclosure Material: Stainless steel.
- 3. Cooling Methods:
  - a. Fan convection cooling.
- 4. Protective Functions:
  - a. AC over/under voltage.
  - b. AC over/under frequency.
  - c. Ground over current.
  - d. AC and dc overcurrent.
  - e. DC over voltage.

F. Regulatory Approvals:

- 1. IEEE 1547.1.
- 2. IEEE 1547.3.
- 3. UL 1741.

2.7 MOUNTING STRUCTURES

- 1. Solar panel support structure shall be manufactured and designed by UNIRAC or approved equivalent.
- 2. Solar Panel manufacturer shall provide the connection design of the mounting structure to the canopy structure.
- 3. The contractor shall prevent dissimilar metal materials from coming in contact with each other.

PART 3 - EXECUTION (Not Used)

END OF SECTION 263100