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February 18, 2025

ADDENDUM NO. 01

CONTRACT NO. 9617

SOLAR PV – WATER UTILITY OLIN AVE

This addendum is issued to modify, explain, or correct the original Drawings, Specifications or Contract Documents marked as ***Solar PV – Water Utility Olin Ave, Contract #9617, as issued on January 30, 2025*** and is hereby made a part of the contract documents.

EXHIBIT E – PROJECT SPECIFICATIONS

- 1) Section 23 31 00 – Photovoltaic System Performance Requirements
 - a) Revise Section 1.5 Coordination

CONTRACTOR QUESTIONS

- 1) Question: Does equipment need to meet domestic content requirements?

Answer: There are not domestic content requirements for this project.

- 2) Question: Are there one-line diagrams for the existing photovoltaic systems?

Answer: No, we do not have the one lines from the original installation in 2009. To the best of our knowledge each system has two 5 kW SMA inverters with each inverter having two strings of 12 modules.

- 3) Question: For the office building (119 E Olin Ave) are there any existing empty conduits between the office 2nd floor mechanical room (room 226) and the 1st floor electrical room (room 149)?

Answer: There are no existing empty conduits between the mechanical room and electrical room. There is an open 2" pass south from the electrical room (room 149) to the meter shop (room 147).

- 4) Question: Is it acceptable to install conduits on the exterior of buildings up to the roofs?

Answer: Conduit installation on the exterior of the building is not acceptable. If a conduit route through the roof and building is not possible, exterior options can be discussed further.

- 5) Question: Is the contractor responsible for demo of the utility disconnects and export meters for the existing PV systems?

Answer: Yes, demo of the existing equipment shall be the contractor's responsibility.

- 6) Question: Who is responsible for potential transformer upgrade, interconnection engineering review, and interconnection distribution system study fees from the utility?

Answer: The City shall pay for any transformer upgrade, interconnection engineering review, and interconnection distribution fees. Section 1.5 of 26 31 00 (Photovoltaic System Performance Requirements) has been updated for clarity.

OTHER

- 1) Pictures of Main Distribution Panel for 1408 Quann-Olin Parkway are attached because the panel was not accessible during the walkthrough.

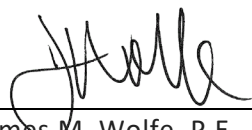
Please acknowledge this addendum on page E1 of the contract documents and/or in Section E: Bidder's Acknowledgement on Bid Express.

Electronic version of these documents can be found on Bid Express at <https://www.bidexpress.com/> and the City of Madison web site at <http://www.cityofmadison.com/business/PW/contracts/openforBid.cfm>

If you are unable to download plan revisions associated with the addendum, please contact the Engineering office at 608-266-4751 to receive the material by another method.

For questions regarding this bid, contact:

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James M. Wolfe, P.E., City Engineer

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PHOTOVOLTAIC SYSTEM PERFORMANCE REQUIREMENTS

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PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section includes general performance requirements that apply to installing a solar electric (PV) system for this project
- B. Contractor is the Designer of Record for this system. Contractor is required to provide a Structural PE (Professional Engineer) Stamp for the structural design.
- C. The structural stamp is to be provided from experienced PV designer with at least 5 similar completed projects.
- D. Contractor shall select number of inverters and perform string sizing. Product specifications included in this section are the Basis for Design. Any substitutions requests shall follow procedures outlined in section 01 25 13.
- E. Related Work and Requirements:
 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- F. Incentive Paperwork:
 1. Contractor to provide support with Owner's applications for Focus on Energy and Federal Solar Tax Credit incentives.

1.2 DEFINITIONS

- A. MPPT: Maximum power point tracking.
- B. STC: Standard test conditions, 1000 W/m², 1.5 air mass, and 25°C cell temperature.
- C. NABCEP: North American Board of Certified Energy Practitioners
- D. PTC: PV USA Test Conditions, 1000 W/m², 1.5 air mass, 20°C air temperature, and 1 meter/sec. wind speed.
- E. Voc: Open circuit voltage
- F. Isc: Short circuit current.

1.3 SUBMITTALS

- A. Product Data: For each type of component indicated below. Include rated capacities, operating characteristics, and furnished specialties and accessories. All product data submittals shall be submitted for review by Owner prior to purchasing any materials or equipment.
 1. Solar modules
 2. Grid tied inverters and any associated module level power electronics, including efficiency data.
 3. Racking system, including rail, clamps, brackets, and/or roof attachments.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection. All shop drawings shall be submitted for review by Owner prior to purchasing any materials or equipment.

1. Dimensioned AutoCAD plan drawings of equipment including solar module array, inverters, disconnects, metering, and electrical conduit routing.
2. Provide AutoCAD drafted one-line wiring diagram of solar PV system indicating ratings of all modules and inverters, wire and conduit types and sizes, and disconnects.
- C. Design Calculations
 1. The following design calculations shall be performed by Contractor and submitted for review by Owner prior to purchasing any materials or equipment.
 - a. Electrical calculations, including string sizing, inverter selection, and voltage losses.
 - b. Structural calculations, including rail spans, wind and snow loading, required ballast weights, and roof strength calculations.
- D. Permitting and Agreements
 1. The following permits and agreements shall be prepared by Contractor on behalf of the Owner. All approved permits and agreements shall be submitted for review by Owner prior to purchasing any materials or equipment.
 - a. Utility interconnection application and agreement
 - b. Building permit
 - c. Electrical permit
- E. As built drawings:
 1. Dimensioned AutoCAD plan drawings of equipment including solar module array, inverters, disconnects, metering, and electrical routing.
 2. Provide AutoCAD drafted one-line diagram of solar PV system indicating ratings of all modules and inverters, wire and conduit types and sizes, and disconnects.
 3. Provide plan drawings showing locations and serial numbers of inverters and module level power electronics with monitoring capabilities.
- F. Field quality-control test reports.
 1. Include voltages and power output for each string. Measure and record solar intensity during testing. Include time, date, and weather conditions of test.
- H. Warranty: Copies of all manufacturer's and installer's warranties.

1.4 QUALITY ASSURANCE

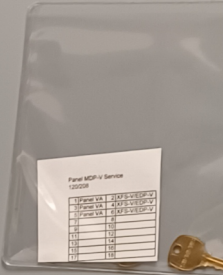
- A. Installer Qualifications:
 1. Experience: Installer with documented experience on the design and construction of at least 5 similarly sized PV Systems.
 2. Installer must have PV Installer certification through NABCEP or applying for certification.
 3. Maintenance Proximity: Not more than four hours' normal travel time from Installer's place of business to Project site.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Comply with NFPA 70 and all applicable state and local codes

1.5 COORDINATION

- A. Permitting and Agreements
 1. The following permits and agreements shall be prepared by Contractor on behalf of the Owner. All approved permits and agreements shall be submitted for review by Owner prior to purchasing any materials or equipment.
 - a. Utility interconnection application and agreement
 - b. Building permit
 - c. Electrical permit
 2. Contractor shall pay all standard interconnection fees including the application review fee and commissioning fee. Contractor shall submit all required forms to utility.
 3. Contractor is not responsible for paying any utility or interconnection fees that are "cost based". These fees include the interconnection engineering review fee, interconnection distribution system study fee, and any required utility distribution system upgrade costs.
 4. Contractor is not responsible for paying for the City Building or Electrical permits as outlined in section 00 31 46. Contractor shall submit all required forms to Building Inspection and Zoning.
- B. Coordinate all work affecting building's roof with roofing manufacturer to ensure the roof's warranty is maintained.

1.6 WARRANTY

- A. Installer must provide a two year installation warranty covering any defects of the installation.
- B. Module Warranty Period:



SIEMENS

Cat. No. **P4C75LM800ATS**

S.O.: **17-77929-B00**

Type: **P4**

Location: **S**

Customer Marking: **MDP-V**

Item No. **010**

Date: **08/02/04**

System: **208Y/120 3 Ph 4 W**

Amps max.

SEE MAIN BREAKER

Minimum size UL listed cabinet or cut out box for this panel **10.00DP. 075H. 032W.**

Suitable for use as service equipment with a main overcurrent device or when not more than six main disconnecting means are provided and when not used as a lighting and appliance branch circuit panelboard. See Article 408.14 of the N.E.C.



⚠ DANGER

**Hazardous voltage.
Will cause death or
serious injury.**

**Keep out.
Qualified personnel only.
Disconnect and lock off all
power before working on
this equipment.**

Breaker handle in intermediate position indicates tripped. To reset, move handle to extreme off position, then on. Short circuit information is located on rear of this cover.

15-A-1028-01 Rev. 5

**Siemens Energy & Automation, Inc.
Atlanta, GA. U.S.A.**

**For emergency service
call 1-800-241-4453**