

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE		PAGE OF PAGES 1 17	
2. AMENDMENT/MODIFICATION NO. 0003		3. EFFECTIVE DATE 02-Aug-2016		4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO.(If applicable)	
6. ISSUED BY USA ENGINEER DISTRICT, JACKSONVILLE CONTRACTING DIVISION 701 SAN MARCO BLVD JACKSONVILLE FL 32207-8175		CODE W912EP		7. ADMINISTERED BY (If other than item 6) See Item 6		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				X		9A. AMENDMENT OF SOLICITATION NO. W912EP-16-R-0011	
				X		9B. DATED (SEE ITEM 11) 08-Jul-2016	
						10A. MOD. OF CONTRACT/ORDER NO.	
						10B. DATED (SEE ITEM 13)	
CODE		FACILITY CODE					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. ACCOUNTING AND APPROPRIATION DATA (If required)							
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.							
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.							
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).							
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:							
D. OTHER (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.							
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) Herbert Hoover Dike Rehabilitation, Structure Replacements, S-290 (IP-2) and S-292 (IP-1) Reconstruction, Glades County, Florida This Amendment is being issued for the following: 1. Replace Section 26 31 00 of the Technical Specifications 2. Replace multiple drawings for S-292 (IP-1) See the continuation sheet for additional information.							
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. NAME AND TITLE OF SIGNER (Type or print)				16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
				TEL: _____ EMAIL: _____			
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA		16C. DATE SIGNED	
_____ (Signature of person authorized to sign)				BY _____ (Signature of Contracting Officer)			

SF 30 CONTINUATION SHEET

Herbert Hoover Dike Rehabilitation, Structure Replacements
S-290 (IP-2) and S-292 (IP-1) Reconstruction

SUMMARY OF CHANGES

1. SPECIFICATIONS:

A. In some Volume 1 sections, asterisks appear before and after the line or lines where revisions have been made to the text, and pertain only to changes made by this amendment. In some cases, replacement clauses are attached to this amendment.

B. In Volume 2 sections except for Section 00 33 50, the text changes have been updated with additions noted by underlined text and deletions noted by line/cross-outs, and pertain only to changes made by this amendment. The entire section is replaced if there is any change.

Changes to Specifications:

Volume 1 of 2 - Contract Documents:

N/A

Volume 2 of 2 - Technical Specifications:

DELETE Section 26 31 00 and **REPLACE** with the attached revised Section 26 31 00.

2. DRAWINGS:

S-291 (IP-2) RECONSTRUCTION:

N/A

S-292 (IP-1) RECONSTRUCTION:

DELETE Drawing T-03 and **REPLACE** with the attached revised Drawing T-03.

DELETE Drawing T-05 and **REPLACE** with the attached revised Drawing T-05.

DELETE Drawing T-06 and **REPLACE** with the attached revised Drawing T-06.

3. ADDITIONAL INFORMATION AVAILABLE TO BIDDERS:

N/A

(End of Summary of Changes)

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DIVISION 26 - ELECTRICAL

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SECTION 26 31 00

SOLAR PHOTOVOLTAIC (PV) COMPONENTS

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 7 (2010; Errata 2011; Supp 1 2013) Minimum Design Loads for Buildings and Other Structures

ASTM INTERNATIONAL (ASTM)

ASTM E772 (2015) Standard Terminology of Solar Energy Conversion

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE 1013 (2007) Recommended Practice for Sizing Lead-Acid Batteries for Photovoltaic (PV) Systems

IEEE 928 (1986; R 1991) Recommended Criteria for Terrestrial Photovoltaic Power Systems

IEEE 937 (2007) IEEE Recommended Practice for Installation and Maintenance of Lead-Acid Batteries for Photovoltaic (PV) Systems

IEEE Stds Dictionary (2009) IEEE Standards Dictionary: Glossary of Terms & Definitions

INTERNATIONAL CODE COUNCIL (ICC)

ICC IBC (2012) International Building Code

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

IEC 61215 (2005; ED 2.0) Crystalline Silicon Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval

IEC 61853-1 (2011; ED 1.0) Photovoltaic (Pv) Module Performance Testing and Energy Rating - Part 1: Irradiance and Temperature Performance Measurements and Power Rating

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

ISO 9001 (2008; Corr 1 2009) Quality Management Systems- Requirements

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

NEMA AB 1 (2002) Molded-Case Circuit Breakers, Molded Case Switches, and Circuit-Breaker Enclosures

NEMA FU 1 (2002; R 2007) Low Voltage Cartridge Fuses

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (2015) National Electrical Code

UNDERWRITERS LABORATORIES (UL)

UL 1703 (2002; Reprint Nov 2014) UL Standard for Safety Flat-Plate Photovoltaic Modules and Panels

UL 2703 (2015) UL Standard for Safety Mounting Systems, Mounting Devices, Clamping/Retention Devices, And Ground Lugs For Use With Flat-Plate Photovoltaic Modules And Panels

UL 50 (2007; Reprint Apr 2012) Enclosures for Electrical Equipment, Non-environmental Considerations

UL Electrical Constructn (2012) Electrical Construction Equipment Directory

1.2 RELATED REQUIREMENTS

Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM apply to this section with additions and modifications specified herein.

1.3 DEFINITIONS

- a. Unless otherwise specified or indicated, electrical and electronics terms used in these specifications, and on the drawings, are as defined in the **IEEE Stds Dictionary**.
- b. Unless otherwise specified or indicated, solar energy conversion terms used in these specifications, and on the drawings, are as defined in **ASTM E772**.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Schematic Diagrams; G, DO

Interconnection Diagrams; G, DO

Installation Drawings; G, DO

SD-03 Product Data

Roof Mounting Structure for Modules (Racking); G, DO

Photovoltaic Modules; G, DO

SD-05 Design Data

System Operation; G, DO

SD-06 Test Reports

Field Test Plan; G, DO

Submit a detailed description of the Contractor's proposed procedure for onsite test 20 calendar days prior to testing the installed system. No final field test shall be performed until the test plan is approved. The test plan shall consist of complete field test procedures including test to be performed, test equipment and tolerance limits.

Field Test Reports; G, DO

Provide the information described below. Include a separate section for tests on each solar-powered system.

- a. A list of equipment used.
- b. A copy of measurements taken.
- c. The dates of testing.
- d. The equipment and values to be verified.
- e. The conditions specified for the test.
- f. The test results, signed and dated.
- g. A description of adjustments made.

SD-07 Certificates

Installer; G, DO

Materials; G, DO

Warranty; G, DO

SD-08 Manufacturer's Instructions

Installation Instructions; G, DO

SD-10 Operation and Maintenance Data

Electrical Systems, Data Package 5; G, DO

1.5 MAINTENANCE MATERIAL SUBMITTALS

Comply with requirements specified in Section 01 78 02 CLOSEOUT SUBMITTALS.

1.6 QUALITY ASSURANCE

1.6.1 Regulatory Requirements

In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction," or words of similar meaning, to mean the Contracting Officers. Provide equipment, materials, installation, and workmanship in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

1.6.2 Installation Drawings

In addition to requirements in Section 01 33 00 SUBMITTAL PROCEDURES, include the following:

- a. Submit drawings for government approval prior to equipment construction or integration.
- b. Shop drawings may include legible copies of manufacturer's product literature, with selected items and specifications highlighted thereon.

1.6.3 System Operation

Provide a complete description of the function of each component including PV modules, DC wiring, combiner boxes, inverters, AC wiring, AC and DC disconnect switches, and monitoring system. Provide a discussion of the overall system operation.

1.6.4 Installer

Submit NABCEP (North American Board of Certified Energy Practitioners) PV Installation Professional certification, and a resume with references that details least four successful projects that, in aggregate, equal or exceed the size of the proposed project.

1.6.5 Materials

Provide materials and equipment that are products of manufacturers regularly engaged in the production of such products which are of equal material, design and workmanship. Submit proof of compliance with requirements of UL, where material or equipment is specified to comply. The label of or listing in UL Electrical Constructn Directory will be acceptable evidence. In lieu of the label or listing, a written certificate from an approved nationally recognized testing laboratory (NRTL) equipped to perform such services, stating that the items have been tested and conform to the requirements and testing methods of Underwriters Laboratories may be submitted.

1.6.5.1 Alternative Qualifications

Products having less than a 2-year field service record will be acceptable if the manufacturer has been regularly engaged in the design and production

of solar photovoltaic products for a minimum of 5-years. Similar photovoltaic products must have been in satisfactory commercial or industrial use for 5-years prior to bid opening and must have been on sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 5-year period.

1.6.5.2 Material and Equipment Manufacturing Date

Products manufactured more than 1-year prior to date of delivery to site must not be used, unless specified otherwise.

1.6.6 Operation and Maintenance Data

Submit Solar Photovoltaic Systems data package for the following items in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

- a. Troubleshooting guide.
- b. Warranty.
- c. Operation instructions.
- d. Preventive maintenance and inspection data, including a schedule for system operators.

1.6.6.1 Electrical Systems

Submit operation and maintenance data in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA. In addition to requirements of Data Package 5, include the following for the actual solar photovoltaic (PV) system provided:

- a. Service and maintenance information including preventive maintenance, assembly, and disassembly procedures.
- b. Complete operation, repair, and maintenance information, detailed to the smallest replaceable unit.
- c. Adjustment, trouble-shooting, configuration, tuning, and system calibration instructions.
- d. An instruction manual with pertinent items and information highlighted.
- e. A layout drawing showing locations as well as views of equipment; front, top, and side views.
- f. A one-line drawing showing all components and interfaces to the electrical system.
- g. Date of purchase.

1.6.7 Bill of Materials

Submit a Bill of Materials listing each product being incorporated into the system. Bill of Materials includes a general description of the product, quantity, and exact manufacturer's model number. Where the manufacturer's model number does not fully identify the product, list options, accessories, or custom features by additional descriptions.

1.6.8 Spare Parts

Spare parts shall be furnished as specified below. All spare parts shall be of the same material and workmanship, shall meet the same requirements, and shall be interchangeable with the corresponding original parts.

- a. 5 - Fuses of each type and size.
- b. 2 - Circuit breakers of each type and size.
- c. 1 - Solar controller of each type and size.
- d. 1 - Solar module of each type and size.

1.7 DELIVERY, STORAGE, AND HANDLING

- a. Store solar PV modules in their original packaging according to the manufacturer's guidance, and do not remove from packaging until day of installation.
- b. If a solar PV module is removed from its packaging, store it according to the manufacturer's guidance.
- c. Do not store solar PV modules on-site for more than 12 months.

1.8 WARRANTY

The equipment items must be supported by service organizations which are reasonably convenient to the equipment installation in order to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

1.8.1 Solar Photovoltaic Modules

Furnish the solar photovoltaic module manufacturer's warranty. The warranty must be a 25-year linear 80 percent (minimum) power warranty (at the end of the 25th year after purchase an actual minimum power output of 80 percent based on the nameplate rating must be achieved) and not less than 10-years for workmanship material and manufacturing defects from the date of manufacture.

The warranty must state that the malfunctioning solar photovoltaic module must be exchanged by the manufacturer and promptly shipped to the using Government facility. The replacement solar module must be identical to, or an improvement upon, the original design of the malfunctioning solar module.

1.8.2 Solar Controllers

Furnish the controller manufacturer's warranty.

1.8.3 Batteries

Furnish the manufacturer's warranty for batteries.

PART 2 PRODUCTS

2.1 PHOTOVOLTAIC MODULES

- a. PV modules must be IEC 61215 compliant and listed to UL 1703, and manufactured in an ISO 9001 certified facility.
- b. PV modules must be of monocrystalline or polycrystalline technology and

for rack mounting.

- c. PV module efficiency must be greater than 15 percent for crystalline technology.
- d. PV modules must be of the same manufacturer and model number and consistent sub-components.
- e. Submit on cutsheets PV module performance data from the manufacturer that must include a flash test data in accordance with [IEC 61853-1](#), and temperature coefficients at: STC, nominal operating cell temperature (NOCT), low irradiance conditions (LIC), high temperature conditions (HTC), and low temperature conditions (LTC).
- e. PV module bypass diodes must be inside the solar PV module's single conductor cable junction box.
- f. Photovoltaic wire, wiring methods, and utilization of locking-type connectors must comply with the requirements of [NFPA 70](#). Provide USE-2 or RHH or RHW-2 wire, and sunlight-resistant wire when exposed to sunlight.

2.2 SOLAR CONTROLLERS

The solar controllers shall operate on 12Vdc and shall be rated for the amperage required for each system indicated. The charger shall be voltage regulated and temperature compensated and shall be appropriated for recharging VRLA batteries without causing overcharge. The controllers shall be fully and continuously rated at 70 degrees C. They shall be pulse width modulated with three stage charging: Bulk, PWM regulation and float. The controllers shall be fully protected against reverse polarity, short circuit, overcurrent, lightning and transient surges, high temperature and reverse current. Construction shall be 100 percent solid state, epoxy encapsulated and rated for outdoor use. LEDs shall indicated mode. Grounding for the solar power system shall be in conformance with [NFPA 70](#), the drawings and the specifications herein. Conform to [NEMA AB 1](#), [NEMA FU 1](#), [UL 50](#) and [IEEE 928](#)

2.2.1 Solar Controller Enclosure

Enclosures shall be NEMA Type 3R, vented enclosure of white fiberglass reinforced polyester or powder-coated white aluminum, with hinged door, padlock hasp and screw-type door clamps. The interior-mounting panel shall be 12-gage steel. It shall be sized to house the equipment indicated and be of wall-mounted design. Fittings shall be watertight for all conduits entering the enclosure. It shall be sized to allow airflow around the components.

2.2.2 Electrical System

2.2.2.1 Wiring

The wiring shall be NEC type, THHN/THWN wire, rated to 90 degrees C at 600V.

2.2.2.2 Wire Markers

Wire markers shall be hot-stamped tube-type, Brady Ty-grip, Electrovert slip-on Type Z, or Floy Tag FT200C sized for snug fit for wire size. Identify both ends with the same unique wire number. Assign wire numbers

where specific designations are not indicated.

2.2.3 Solar Enclosure Components

2.2.3.1 Terminal Blocks

Terminal Blocks shall be 125V, section type of nylon or polyamide blocks with tubular clamp contacts. Provide a minimum of 10 percent spare terminals.

2.2.3.2 Switch Action Fuse Blocks

Pull switch shall interrupt circuit before fuse can be removed or installed. Fuse blocks shall be rated 30V, 30A and be sectional type nylon or polyamide blocks with tubular clamp contacts.

2.2.3.3 Circuit Breakers

Use Heineman Series CF, Curve 3 breakers for devices or systems requiring 24Vdc power or less. Trip rating shall be as recommended by the manufacturer of equipment being protected. Provide necessary space on the panel for a minimum of three future circuit breakers. Mount inside control panel in a readily accessible location.

2.3 BATTERIES

The batteries shall be sealed, valve-regulated, deep cycle, lead acid batteries. The case material shall be polypropylene. The batteries shall be rated non-spillable by DOT, ICAO and IATA. Battery capacity shall include 5 days backup in Amp/Hours for equipment being charged. Conform to [IEEE 937](#) and [IEEE 1013](#). The batteries shall be absorbed glass mat (AGM) type batteries and shall power a 12V system. Provide batteries with 50 or greater amp-hours rating.

2.4 ROOF MOUNTING STRUCTURE FOR MODULES (RACKING)

- a. Provide racking for array as indicated on the drawings. Provide racking compliant with [UL 2703](#).
- b. Racking and PV array, including modules, hardware, and attachments, must withstand wind loads as required by [ASCE 7](#) and [ICC IBC](#).

2.4.1 Mounting System Base Supports

Fabricate with fastening points integral to the mounting structure. Mounting system supports must be permanently affixed stanchions that are anchored to the building structure. Coordinate height with thickness of roof insulation.

2.4.2 Flashing Boot

Fabricate for precision fit over base support. Coordinate height with base supports.

2.4.3 Base Cap

Fabricate to overlap base support and flashing boot a minimum of [2 inches](#).

2.4.4 Base Cap Gasket

EPDM with self-adhesive closed cell foam or other gasketing material compatible with the roofing material.

2.4.5 Framing

Provide with wall thickness as determined by structural calculations.

2.4.6 Hardware

Bolts, nuts, washers, and screws must be 18-8 stainless steel.

2.5 MANUFACTURER'S NAMEPLATE

Each item of equipment must have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable. For PV modules, a label on the back of the module is acceptable.

2.6 GROUNDING AND BONDING

- a. Provide properly sized equipment grounding conductors.
- b. Provide bonding fittings on concentric/eccentric knockouts with metal conduits for circuits over 250 volts in accordance with NFPA 70.
- c. Provide bonding fittings for ferrous metal conduits enclosing grounding electrode conductors in accordance with NFPA 70.
- d. Provide grounding lugs for aluminum PV solar module frames of either stainless steel or tin-coated copper.

PART 3 EXECUTION

3.1 INSTALLATION

After delivery of equipment, the Contractor shall furnish one or more field engineers, regularly employed by the equipment manufacturer to supervise the installation of the solar equipment, assist in the performance of the onsite tests, oversee initial operations, and instruct personnel as to the operational and maintenance features of the equipment.

3.1.1 Solar Array

The solar array shall be installed at a 30-degree tilt angle with orientation to the south. Each solar module shall be removable for maintenance repair or replacement.

3.1.2 Array Support Frame

The array support frame shall be installed in accordance with the recommendations of the solar array manufacturer. Structural members requiring welding shall be welded in accordance with Section 05 50 14 STRUCTURAL METAL FABRICATIONS.

3.1.3 Solar Controller Components

The solar controller, fuses, circuit breakers, and disconnecting means shall be installed in an enclosure in accordance with the manufacturer's instructions. Wiring shall be installed in liquidtight flex conduit between the array and the array junction box, and in conduit between the array junction box and the batteries. See Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM.

3.2 INSPECTION AND TESTING

3.2.1 Acceptance Testing and Final Inspection

After acceptance of the field test plan, the Contractor shall notify the Contracting Officer 7 calendar days prior to the performance and acceptance tests are to be conducted. Tests shall be performed in the presence of the Contracting Officer or ACO. The Contractor shall furnish all instruments and personnel required for the tests. Field test reports of the results of all acceptance tests shall be maintained and submitted in booklet form. Final acceptance of the solar system will not be given until the Contractor has successfully completed all tests and after all defects in installation, material or operation have been corrected.

3.3 FIELD TRAINING

A field training course for the solar power system shall be provided for operation and maintenance staff members. Training shall be provided by the solar equipment manufacturer's representative for a minimum period of 4 hours of normal working time and shall start after the system is functionally complete but prior to final acceptance tests. The training shall include discussion of the system design and layout, and demonstration of routine operation and maintenance procedures. At a minimum, this training shall include solar module inspection, cleaning and replacement, trouble shooting for the controller, battery inspection, replacement and battery wiring. Notify the Contracting Officer in writing prior to scheduling instructions.

-- End of Section --



SUTRON SYSTEM COMPONENTS

1. PROVIDE SURGE SUPPRESSION FOR ANTENNA CABLES. SURGE SUPPRESSION SHALL MEET UL 497B. SURGE SUPPRESSION SHALL DISSIPATE 3,000 W/PAIR.
2. REFERENCED ITEMS: 1A THRU 2M, 3D, 3J, 5A, 5C, 6A, 6B, 6E, AND 6F SHALL BE MANUFACTURERS AS SHOWN "OR APPROVED EQUAL."

[illegible]

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS JACKSONVILLE DISTRICT JACKSONVILLE, FLORIDA	ISSUED BY: V.I.	SOLICITATION NO.: XXXXXXX	CONTRACT NO.: N/A
	DRAWN BY: J.D.H.	FILE NUMBER: Aug 01, 2016	
	SUBMITTED BY: N/A	FILE NAME: 114527-HHDCRIP1-TS103.DGN	

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS

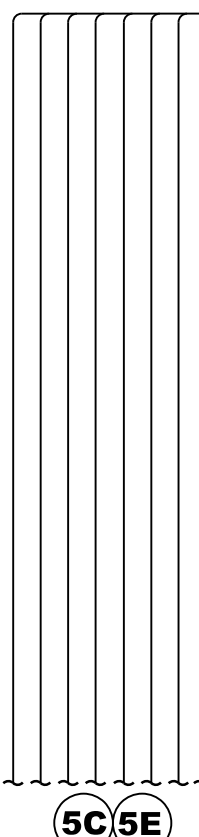
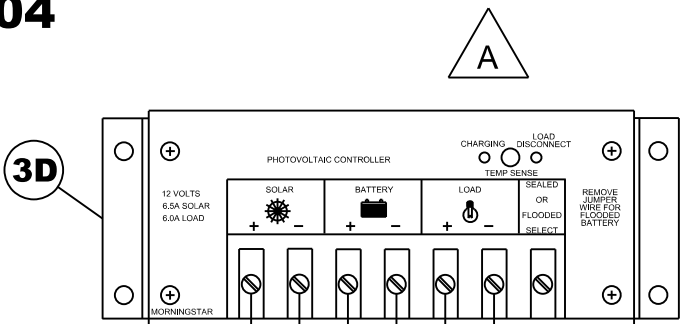
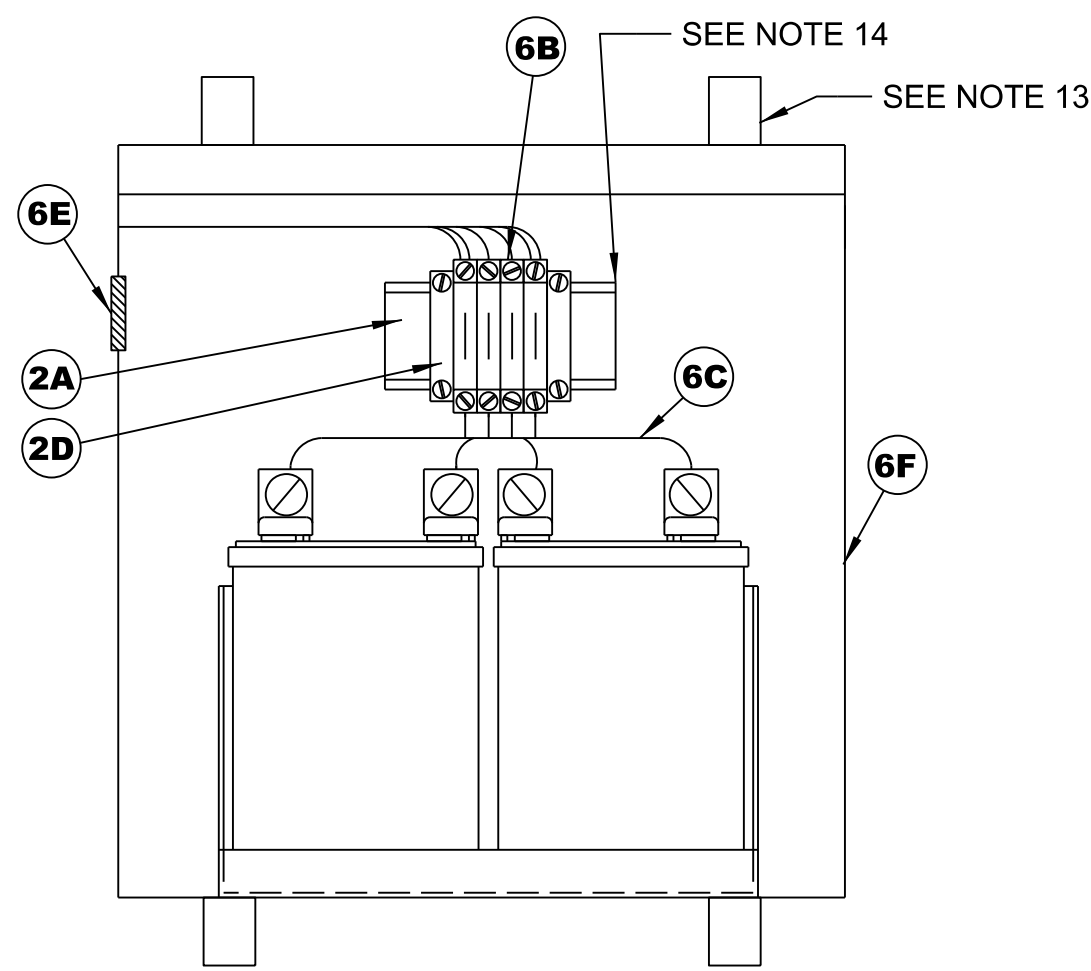
S-292 (IP-1) RECONSTRUCTION
TELECOMMUNICATIONS

SUTRON SYSTEM COMPONENTS

DRAWING NO.

T-03

CONTINUED FROM SHEET T-04

CNTRL BLDG DOOR
MAGNETIC CONTACTTO SOLAR PANELS ON
ROOF OF CONTROL BLDG
SEE NOTE 3**SUTRON
PANEL WIRING DIAGRAM**
SCALE: N.T.S.**BATTERY BOX DETAIL**
(TYPICAL)
SCALE: N.T.S.SEE BATTERY CABLE
DETAIL THIS SHEETTO BATTERY BOX
SEE DETAIL THIS SHEET
SEE DWG T-06TO BATTERY
BOX**NOTES :**

1. LOCATE ANTENNA ON POLE, REFERENCE STANDARD DETAIL SHEET T-06. MOUNT WITH BRACKETS FURNISHED WITH ANTENNA. FURNISH HOT DIPPED GALVANIZED U-BOLTS TO SECURE MOUNTING BRACKETS TO MAST PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. WEATHER SEAL CABLE TO ANTENNA CONNECTION W/2 FULL WRAPS OF RUBBER MASTIC TAPE TYPE 3M 130C. FINISH WITH TOP LAYER OF 3 WRAPS OF PVC ELECTRICAL TAPE TYPE 3M #33+.
3. LOCATE SOLAR PANELS ON ROOF, REFERENCE STANDARD DETAIL SHEET T-07.
4. SURGE SUPPRESSION FOR SENSORS SHALL BE LOCATED AS SHOWN ON DRAWINGS.
5. SECURE ANTENNA CABLE WITHIN SUTRON RTU ENCLOSURE WITH ADHESIVE BACKED CABLE MOUNTS.
6. FOR COMPONENT CALL OUT, SEE SHEET T-03 FOR DETAILS.
7. FURNISH BONDING JUMPERS, #14 AWG MIN., BETWEEN; DOOR AND ENCLOSURE; ENCLOSURE AND GROUND BAR MOUNTED ON BACK PANEL.
8. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES AND ORDINANCES.
9. NO SUBSTITUTIONS IN REGARDS TO MANUFACTURER AND PART NUMBERS LISTED IN THE RTU SYSTEM COMPONENTS TABLE ARE ALLOWED WITHOUT WRITTEN REQUEST AND GOVERNMENT APPROVAL.
10. ALL CONDUCTORS IN THE PANEL SHALL BE PERMANENTLY IDENTIFIED WITH MACHINE PRINTED WRAP AROUND WIRE MARKERS AT TERMINATION POINTS. PART # BRADY DAT-7-292-1 OR EQUAL.
11. ALL CONDUCTORS EXCEPT FOR INSTRUMENT CABLES SHALL HAVE TYPE MTW OR SIS INSULATION WITH THE FOLLOWING COLOR CODE
· -12VDC - BLACK
· +12VDC - RED
· ALL OTHERS - BLUE
12. WIRING DIAGRAM CONTINUES ON SHEET T-04.
13. MOUNT BATTERY BOX ON 1" UNITRUST.
14. MOUNT DINRAIL WITH 1/4" SS SCREWS AND RIVNUTS.
15. VERIFY SOLAR PANELS AND BATTERIES TO HAVE SUFFICIENT AMPS FOR SYSTEM. MAKE CHANGE AS NECESSARY.
16. PROVIDE A 10 AMP KNIFE DISCONNECT FOR EACH SDI DATA LINE.

BATTERY CABLE NOTES:

1. PINS FOR #14 TO #20 GAUGE WIRE
2. MALE PINS - MOLEX 02-09-2103-C
3. FEMALE PINS - MOLEX 02-09-1104-C
4. PLUG - MOLEX 03-09-2022P
5. RECEPTACLE - MOLEX 03-09-1022P
6. HEAT SHRINK OVER CABLE/CONNECTOR AFTER ASSY, OVERLAPPING CABLE JACKET AND PLUG CONNECTOR.
7. FURNISH TWO CABLE ASSEMBLIES, THE SPARE CABLE ASSEMBLY SHALL HAVE A RECEPTACLE W/O PINS INSERTED INTO PLUG TO PREVENT SHORTING.
8. LENGTH OF BELDEN 5100UE 5'.
9. LENGTH OF BATTERY LEADS 8".
10. ALL CRIMPED CONNECTIONS IN MOLEX CONNECTORS SHALL BE SOLDERED AFTER CRIMPING.
11. PROVIDE IN-LINE FUSE FOR BATTERY CABLE.

TO CIRCUIT
BREAKER/
TERMINAL
BLOCK+ RED
- BLKTO CIRCUIT
BREAKER/
TERMINAL
BLOCK+ RED
- BLK

SEE NOTE 5

MALE
PINRECEPTACLE
END, NO PINS

PLUG END

Belden 5300UI, SEE
NOTES 6 AND 7MALE
PINFEMALE
PIN

SEE NOTE 5

SEE NOTE 11

+ RED

- BLK

NYLON INSULATED INSULATION GRIP
RING TONGUE CRIP TERMINAL FOR
16-14 AWG CONDUCTOR, 1/4" STUD. T&B
OR EQUALTO BATTERY
TERMINALSBelden 5100UE
CONDUCTORS - NO
JACKET**BATTERY CABLE DETAIL**
SCALE: N.T.S.US Army Corps
of Engineers
Jacksonville District

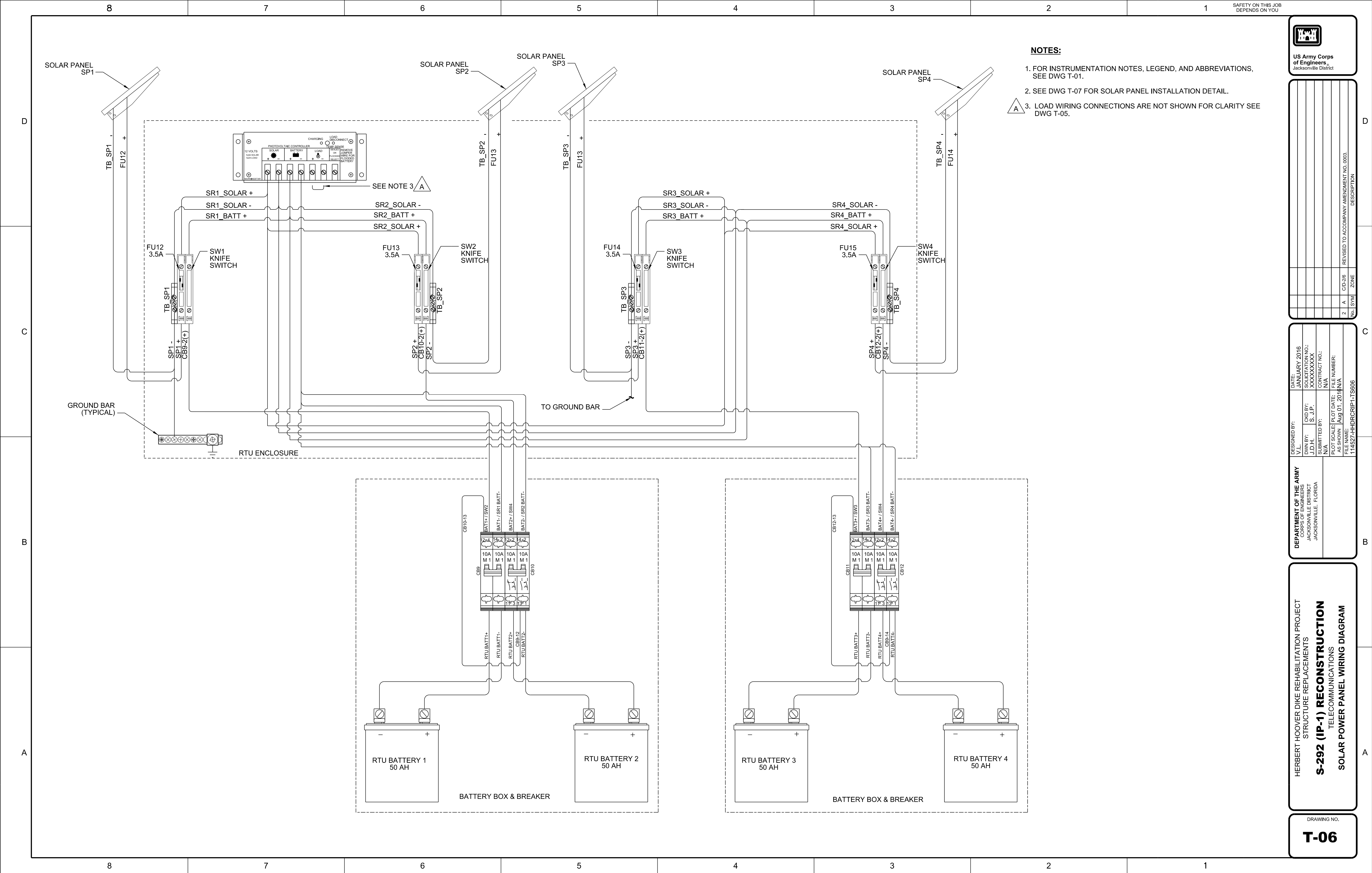
NO.	SYM	ZONE	DESCRIPTION
4	A	AID-48	REVISED TO ACCOMPANY AMENDMENT NO. 0003.

DESIGNED BY: V.L.	DATE: OCTOBER 2015
DRAWN BY: G.D.	SUBMITTING NO.: XXXXXX
SUBMITTED BY: N/A	CONTRACT NO.: N/A
PLOT SCALE: AS SHOWN	PLOT DATE: Aug 01, 2016
FILE NAME: 114527-HHRCRIP1-TS605.DGN	FILE NUMBER: N/A

HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS
S-292 (IP-1) RECONSTRUCTION
TELECOMMUNICATIONS
SUTRON PANEL WIRING DIAGRAM
SHEET 2

DRAWING NO.

T-05



HERBERT HOOVER DIKE REHABILITATION PROJECT
STRUCTURE REPLACEMENTS
S-292 (IP-1) RECONSTRUCTION
TELECOMMUNICATIONS
SOLAR POWER PANEL WIRING DIAGRAM

DRAWING NO.
T-06

DESIGNED BY:	DATE:
V.L.	JANUARY 2016
DRN BY:	DRAWING NO.:
CD	XXXXXX
SUB P.	CONTRACT NO.:
N/A	N/A
AS SHOWN	FILE NUMBER:
Aug 01, 2016	N/A
FILE NAME:	114527-HDRCRIP1-TS606

2	A	CD-26	ZONE	DESCRIPTION
No.	SYM			