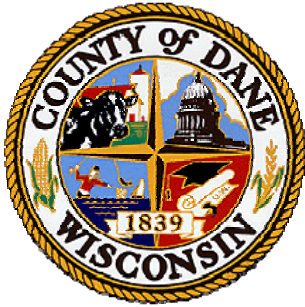


**RFB NO. 310034**



## **CONSTRUCTION DOCUMENTS PROJECT MANUAL**

DANE COUNTY DEPARTMENT OF PUBLIC WORKS,  
HIGHWAY AND TRANSPORTATION

PUBLIC WORKS ENGINEERING DIVISION  
1919 ALLIANT ENERGY CENTER WAY  
MADISON, WISCONSIN 53713

### **REQUEST FOR BIDS NO. 310034 SOLAR PHOTOVOLTAIC FACILITIES MULTIPLE LOCATIONS DANE COUNTY, WI**

Opening Date / Time: **THURSDAY, DECEMBER 9, 2010 @ 2:00 P.M.**      Location: **PUBLIC WORKS OFFICE**

Performance / Payment Bond: **100% OF CONTRACT AMOUNT**      Bid Deposit: **5% OF BID AMOUNT**

---

FOR INFORMATION ON THIS REQUEST FOR BIDS, PLEASE CONTACT:

JOHN SCHRAUFNAGEL, PROJECT ENGINEER  
DANE COUNTY DEPARTMENT OF PUBLIC WORKS,  
HIGHWAY & TRANSPORTATION  
1919 ALLIANT ENERGY CENTER WAY  
MADISON, WISCONSIN 53713  
TELEPHONE NO.: 608/266-4798  
FAX NO.: 608/267-1533  
E-MAIL: SCHRAUFNAGEL@CO.DANE.WI.US

## **DOCUMENT INDEX FOR RFB NO. 310034**

### **PROCUREMENT AND CONTRACTING REQUIREMENTS**

- Project Manual Cover Page
- Documents Index
- Invitation to Bid (Legal Notice)
- Instructions to Bidders
- Bid Form
- Fair Labor Practices Certification
- Best Value Contracting Application
- Sample Public Works Contract
- Sample Bid Bond
- Sample Performance Bond
- Sample Payment Bond
- General Conditions of Contract
- Supplementary Conditions
  - Davis - Bacon Wage Rates
  - DWD Prevailing Wage Rates
  - Buy American Affidavit
- ARRA Reporting Requirements

### **DIVISION 01 - GENERAL REQUIREMENTS**

- 01 00 00 - Basic Requirements
- 01 74 19 - Recycling

### **DIVISION 26 - ELECTRICAL**

- 26 00 01 – Electrical General Requirements
- 26 05 19 – Wire and Cable – 600 Volt and Below
- 26 05 33 – Raceways
- 26 05 34 – Conduit Fittings
- 26 05 35 – Boxes
- 26 05 36 – Pull and Junction Boxes
- 26 05 53 – Electrical Identification

### **DIVISION 31 - EARTHWORK**

- 31 23 16.13 – Trenching

### **DIVISION 48 – ELECTRIC POWER GENERATION**

- 48 14 00 – Solar Energy Electrical Power Generation Equipment

### **DRAWINGS**

To be printed to correct scale or size, plot sheets on 30” x 42” paper.

- Cover Sheet
- Sheet No. EL – General Notes and Details
- Sheet No. E1.0 – Dane County Job Center Photovoltaic Roof Plan and Details
- Sheet No. E2.0 – Dane County Highway Garage Photovoltaic Roof Plan and Details
- Sheet No. E3.0 – Landfill Main Garage Photovoltaic Roof Plan and Details
- Sheet No. E4.0 – Springfield Corners Highway Garage Photovoltaic Ground Mount and Details
- Sheet No. E5.0 – Badger Salt Shed Photovoltaic Pole Mount Plan and Details

**LEGAL NOTICE**

**INVITATION TO BID**

Dane County Public Works, Highway & Transportation Dept., 1919 Alliant Energy Center Way, Madison, WI 53713, will receive sealed Bids until:

**2:00 P.M., THURSDAY, DECEMBER 9, 2010**

**REQUEST FOR BIDS NO. 310034**

**SOLAR PHOTOVOLTAIC SYSTEMS  
MULTIPLE LOCATIONS  
DANE COUNTY, WISCONSIN**

Dane County is inviting Bids to install several solar photovoltaic systems throughout Dane County.

Request for Bids package may be obtained at Dane County Public Works, Highway & Transportation Dept., 1919 Alliant Energy Center Way, Madison, WI 53713, by calling 608-266-4018, or downloading it from [www.danepurchasing.com/rfps.aspx](http://www.danepurchasing.com/rfps.aspx). Please call John Schraufnagel, Project Engineer, at 608-266-4798, for any questions or additional information.

All Bidders must be a registered vendor with Dane County & pay an annual registration fee & may be required to be pre-qualified as a Best Value Contractor before award of Contract. Complete Vendor Registration Form at [www.danepurchasing.com](http://www.danepurchasing.com) or obtain one by calling 608-266-4131. Complete Pre-qualification Application for Contractors at [www.co.dane.wi.us/pwht/BVC\\_Application.aspx](http://www.co.dane.wi.us/pwht/BVC_Application.aspx) or obtain one by calling 608-266-4018.

Bidders facility tour will be held on Wednesday, December 1, 2010 at 8:30 A.M. at the Public Works Conference Room, 1919 Alliant Energy Center Way, Madison, WI. Bidders are not required to attend this facility tour in order to bid on the Work.

**PUBLISH:    NOVEMBER 16 & 23, 2010 - WISCONSIN STATE JOURNAL  
                  NOVEMBER 16 & 23, 2010 – THE DAILY REPORTER**

# INSTRUCTIONS TO BIDDERS

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### **1. GENERAL**

- A. Before submitting Bid, bidder shall thoroughly examine all Construction Documents. Successful Bidder shall be required to provide all the Work that is shown on Drawings, set forth in Specifications, or reasonably implied as necessary to complete Contract for this project.
- B. Bidder shall visit site to become acquainted with adjacent areas, means of approach to site, conditions of actual site and facilities for delivering, storing, placing, and handling of materials and equipment.
- C. Pre-bid meeting is scheduled on Wednesday, December 1, 2010 at 8:30 AM at the Public Works conference room, 1919 Alliant Energy Center Way, Madison, WI. Bidders not are required to attend this facility tour in order to bid on the Work. Other subcontractors to bidders are encouraged to attend.
- D. Failure to visit site or failure to examine any and all Construction Documents will in no way relieve successful Bidder from necessity of furnishing any necessary materials or equipment, or performing any work, that may be required to complete the Work in accordance with Drawings and Specifications. Neglect of above requirements will not be accepted as reason for delay in the Work or additional compensation.

### **2. DRAWINGS AND SPECIFICATIONS**



- A. Drawings and Specifications that form part of this Contract, as stated in Article 1 of General Conditions of Contract, are enumerated in Document Index of these Construction Documents.
- B. Complete sets of Drawings and Specifications for all trades will be issued to all Bidders, irrespective of category of work to be bid on, in order that all Bidders may be familiar with work of other trades as they affect their bid.

### **3. INTERPRETATION**

- A. No verbal explanation or instructions will be given in regard to meaning of Drawings or Specifications before Bid Opening. Bidders shall bring inadequacies, omissions or conflicts to Owner or Architect / Engineer's attention at least ten (10) days before Bid Opening. Prompt clarification will be available to all bidders by Addendum.
- B. Failure to so request clarification or interpretation of Drawings and Specifications will not relieve successful Bidder of responsibility. Signing of Contract will be considered as implicitly denoting that Contractor has thorough understanding of scope of the Work and comprehension of Construction Documents.
- C. Owner or Engineer will not be responsible for verbal instructions.

### **4. QUALIFICATIONS OF BIDDER (CONTRACTOR AND SUBCONTRACTOR)**

- A. Before award of Contract can be approved, Owner shall be satisfied that Bidder involved meets following requirements:
  - 1. Has completed at least one (1) project of at least fifty percent (50%) of size or value of Division of work being bid and type of work completed is similar to that being bid. If greater magnitude of experience is deemed necessary, other than size or value of work, such requirements will be described in appropriate section of Specifications.
  - 2. Maintains permanent place of business.
  - 3. Can be bonded for terms of proposed Contract.
  - 4. Has record of satisfactorily completing past projects and supplies list of five (5) most recent, similar projects, with architect or engineer's and owner's names, addresses and telephone numbers for each project. Submit to Public Works Project Engineer within three (3) days after Bid Opening. Criteria which will be considered in determining satisfactory completion of projects by bidder will include:
    - a) Completed contracts in accordance with drawings and specifications.
    - b) Diligently pursued execution of work and completed contracts according to established time schedule unless Owner grants extensions.
    - c) Fulfilled guarantee requirements of construction documents.
    - d) Is not presently on ineligible list maintained by County's Department of Administration for noncompliance with equal employment opportunities and affirmative action requirements.
    - e) Authorized to conduct business in Wisconsin. By submitting Bid, bidder warrants that it has: complied with all necessary requirements to do business in State of Wisconsin; that persons executing contract on its behalf are authorized to do so; and, if corporation, that name and address of bidder's registered agent are as set forth in

Contract. Bidder shall notify Owner immediately, in writing, of any change in its registered agent, their address, and bidder's legal status. For partnership, term "registered agent" shall mean general partner.

- B. County's Public Works Project Engineer will make such investigations as are deemed necessary to determine ability of bidder to perform the Work, and bidder shall furnish to County's Public Works Project Engineer or designee all such information and data for this purpose as County's Public Works Project Engineer may request. Owner reserves right to reject Bid if evidence submitted by, or investigation of, bidder fails to satisfy Owner that bidder is responsible and qualified to carry out obligations of Contract and to complete the Work contemplated therein.

## **5. BID GUARANTEE**

- A. Bank certified check, cashier's check or Bid Bond, payable to County in amount not less than five percent (5%) of maximum bid, shall accompany each Bid as guarantee that if Bid is accepted, Bidder will execute and return proposed Contract and Performance and Payment Bonds within ten (10) days after being notified of acceptance of Bid. Company issuing bonds must be licensed to do business in Wisconsin.
- B. Any bid, which is not accompanied by bid guarantee, will be considered "No Bid" and will not be read at Bid Opening.
- C. If successful Bidder so delivers Contract, Certificate of Insurance, and Performance and Payment Bonds, check will be returned to Bidder. In case Bidder fails to deliver such Contract, insurance, and bond, amount of bid guarantee will be forfeited to County as liquidated damages.
- D. All checks tendered as bid guarantee, except those of three lowest qualified, responsible bidders, will be returned to their makers within three (3) days after Bid Opening. All such retained checks will be returned immediately upon signing of Contract and Performance and Payment Bonds by successful Bidder.

## **6. WITHDRAWAL OF BIDS**

- A. Bids may be withdrawn by written request received from bidder or authorized representative thereof prior to time fixed for Bid Opening, without prejudice to right of bidder to file new Bid. Withdrawn Bids will be returned unopened. Negligence on part of bidder in preparing their Bid confers no right for withdrawal of Bid after it has been opened.
- B. No Bid may be withdrawn for period of 60 days after Bid Opening date.
- C. If Bid contains error, omission or mistake, bidder may limit liability to amount of bidder's guarantee by giving written Notice of Intent not to execute Contract to Owner within seventy-two (72) hours of Bid Opening.

## **7. CONTRACT FORM**

- A. Sample copy of contract that successful Bidder will be required to enter into is included in these Construction Documents and bidders are required to familiarize themselves with all conditions contained therein.

## 8. CONTRACT INTERESTS BY COUNTY PUBLIC OFFICIALS

- A. In accordance with Wisconsin Statute 946.13, county official may not bid for or enter into any contract involving receipts or disbursements of more than \$7,500.00 in a year, in which they have private pecuniary interest, direct or indirect if at same time they are authorized to take official action with respect to making of this Contract. Any contract entered into in violation of this Statute is void and County incurs no liability thereon. This subsection does not affect application and enforcement of Wisconsin Statute 946.13 by state prosecutors in criminal courts of this state.

## 9. EMERGING SMALL BUSINESS PROVISIONS

- A. **Emerging Small Business Definition.** For purposes of this provision, ESB is defined as:
  - 1. Independent business concern that has been in business minimum of one year;
  - 2. Business located in State of Wisconsin;
  - 3. Business comprised of less than 25 employees;
  - 4. Business must not have gross sales in excess of three million dollars (\$3,000,000.00) over past three years; and
  - 5. Business does not have history of failing to complete projects.
- B. **Emerging Small Business (ESB) Involvement.** Bidder shall make good faith effort to award minimum of ten percent (10%) of the Work to ESBs. Bidder shall submit report to Dane County Contract Compliance Officer within twenty-four (24) hours after Bid Opening demonstrating such efforts. Good faith efforts means significant contact with ESBs for purposes of soliciting bids from them. Failure to make or demonstrate good faith efforts will be grounds for disqualification.
- C. **Emerging Small Business Report.** Emerging Small Business Enterprise Report is to be submitted by Bidder in separate envelope marked "Emerging Small Business Report". This report is due by 2:00 p.m. following specified twenty-four (24) hours after Bid Opening. Bidder who fails to submit Emerging Small Business Report shall be deemed not responsive.
- D. **ESB Goal.** Ten percent (10%) ESB participation is goal of this project. ESB utilizations are shown as percentage of total Bid. If Bidder meets or exceeds specified goal, Bidder is only required to submit Form A - Certification, and Form B - Involvement. Goal shall be met if Bidder qualifies as ESB.
- E. **Report Contents.** Following award of Contract, Bidder shall submit copies of executed contracts for all Emerging Small Businesses. Emerging Small Business Report shall consist of these:
  - 1. Form A - Certification;
  - 2. Form B - Involvement;

3. Form C - Contacts;
  4. Form D - Certification Statement (if appropriate); and
  5. Supportive documentation (i.e., copies of correspondence, telephone logs, copies of advertisements).
- F. **ESB Listing.** Bidders will solicit bids from ESB listing provided by Dane County.
- G. **ESB Certification.** All contractors, subcontractors and suppliers seeking ESB certification must complete and submit Emerging Small Business Certification Application to Dane County Contract Compliance Program.
- H. **Certification Statement.** If ESB firm has not been certified by County as ESB prior to submittal of this Bid, ESB Report cannot be used to fulfill ESB goal for this project unless firm provides "Form D - Certification Statement". Certification statement must be completed and signed by ESB firm.
- I. **Questions.** Questions concerning Emerging Small Business provisions shall be directed to:  
Dane County Contract Compliance Officer  
City-County Building, Room 421  
210 Martin Luther King, Jr. Blvd.  
Madison, WI 53703  
608/266-5623
- J. **Substituting ESBs.** In event of any significant changes in subcontract arrangements or if need arises to substitute ESBs, Bidder shall report such proposed changes to Contract Compliance Officer to making any official changes and request authorization to substitute ESB firm. Bidder further agrees to make every possible effort to replace ESB firm with another qualified ESB firm.
- K. **Good Faith Efforts.** Good faith efforts can be demonstrated by meeting all of these obligations:
1. Selecting portions of the Work to be performed by ESBs in order to increase likelihood of meeting ESB goal including, where appropriate, breaking down Contract into smaller units to facilitate ESB participation.
  2. Advertising in general circulation, trade associations, and women / minority focus media concerning subcontracting opportunities.
  3. Providing written notices to reasonable number of specific ESBs that their interest in Contract was being solicited in sufficient time to allow ESBs to participate effectively.
  4. Following up on initial solicitations of interest by contacting ESBs within five (5) working days prior to Bid Opening date to determine with certainty whether ESB were interested, to allow ESBs to prepare bids.
  5. Providing interested ESB with adequate information about Drawings, Specifications and requirements of Contract.
  6. Using services of available minority, women and small business organizations and other organizations that provide assistance in recruitment of MBEs / WBEs / ESBs.

7. Negotiating in good faith with interested ESBs, not rejecting ESBs as unqualified without sound reason based on thorough investigation of their capabilities.
8. Submitting required project reports and accompanying documents to County's Contract Compliance Officer within twenty-four (24) hours after Bid Opening.

L. **Appeals Disqualification of Bid.** Bidder who is disqualified may appeal to Public Works & Transportation Committee and Equal Opportunity Commission.

## **10. METHOD OF AWARD – RESERVATIONS AND CONTINGENCY**

- A. Following will be basis of award of Contract, providing cost does not exceed amount of funds then estimated by County as available to finance Contract(s):
1. Lowest dollar amount submitted by qualified responsible bidder on Base Bid for all work comprising project, combined with such additive Owner accepted alternates.
  2. Owner reserves right to reject all bids or any bid, to waive any informality in any bid, and to accept any bid that will best serve interests of County.
  3. Contract amount will increase the lowest qualified bid, including Owner accepted alternates by an amount of ten (10) percent for the purpose of securing a project contingency fund through the Energy Efficiency & Conservation Block Grant (EECBG).
    - a. Contingency fund to be used at Owner's discretion to cover the costs of contract change orders due to unforeseen conditions, conflicts and omissions in Construction Documents, and Owner requested additional work.
    - b. Contractor is only entitled to the portion of the contingency fund in the amount equal to the sum of contract change orders. Any portion of contingency fund remaining at the end of the project shall be used by Dane County to fund other EECBG projects.
  4. Unit Prices and Informational Bids will not be considered in establishing low bidder.

## **11. SECURITY FOR PERFORMANCE AND PAYMENTS**

- A. Simultaneous with delivery of signed Contract, Bidder shall be required to furnish Performance and Payment Bonds as specified in Article 29 of General Conditions of Contract, "Contract Security". Surety Company shall be licensed to do business in Wisconsin. Performance and Payment Bonds must be dated same date or subsequent to date of Contract. Performance and Payment Bonds must emulate information in Sample Performance and Payment Bonds in Construction Documents.
- B. Provide certified copy of power of attorney from Surety Company showing that agent who signs Bond has power of attorney to sign for Surety Company. Secretary or Assistant Secretary of company must sign this certification, not attorney-in-fact. Certification must bear same or later date as Bond. Power of Attorney must emulate model power of attorney information detailed in Sample Performance and Payment Bonds.
- C. If Bidder is partnership or joint venture, State certified list, providing names of individuals constituting partnership or joint venture must be furnished. Contract itself may be signed by one partner of partnership, or one partner of each firm comprising joint venture, but Performance and Payment Bonds must be signed by all partners.

- D. If Bidder is a corporation, it is necessary that current certified copy of resolution or other official act of directors of corporation be submitted showing that person who signs Contract is authorized to sign contracts for corporation. It is also necessary that corporate seal be affixed to resolution, contract, and performance and payment bonds. If your corporation has no seal, it is required that above documents include statement or notation to effect that corporation has no seal.

## **12. TAXES**

- A. Bidder shall include in Bid, all Sales, Consumer, Use and other similar taxes required by law.
- B. In accordance with Wisconsin Statute 71.80(16)(a), successful nonresident bidder, whether incorporated or not, and not otherwise regularly engaged in business in this state, shall file surety bond with State of Wisconsin Department of Revenue payable to Department of Revenue, to guarantee payment of income taxes, required unemployment compensation contributions, sales and use taxes and income taxes withheld from wages of employees, together with any penalties and interest thereon. Amount of bond shall be three percent (3%) of Contract or subcontract price on all contracts of \$50,000 or more.

## **13. SUBMISSION OF BIDS**

- A. All Bids shall be submitted on standard Bid Form bound herein and only Bids that are made on this Bid Form will be considered. Entire Bid Form and other supporting documents, if any, shall be removed or copied from Construction Documents, filled out, and submitted in manner specified hereinafter. Submit completed Bid Bond with Bid as well.
- B. No bids for any subdivision or any sub-classification of this Work, except as indicated, will be accepted. Any conditional Bid, amendment to Bid Form or appended item thereto, or inclusion of any correspondence, written or printed matter, or details of any nature other than that specifically called for, which would alter any essential provision of Construction Documents, or require consideration of unsolicited material or data in determining award of Contract, will disqualify Bid. Telecommunication alterations to Bid will not be accepted.
- C. Bidders must submit single Bid for all the Work.
- D. Bid amounts shall be inserted in words and in figures in spaces provided on Bid Form; in case of conflict, written word amounts will govern.
- E. Addenda issued after Bid Letting shall become part of Construction Documents. Bidders shall acknowledge receipt of such addenda in appropriate space provided on Bid Form. Bid will be rejected if receipt of any particular addendum applicable to award of Contract has not been acknowledged on Bid Form.
- F. Bids shall be signed, placed in envelope, sealed and delivered before time of closing to place designated in Invitation to Bid, and identified with project name, bid number, location, category of work being bid upon, Bid Opening date, name and address of bidder.
- G. Bidder shall be responsible for sealed Bid being delivered to place designated for Bid Opening on or before date and time specified. Bids received after time of closing will be rejected and returned to bidder unopened.

- H. Bid will be considered invalid and will be rejected if bidder has not signed it.
- I. Faxed Bids will not be accepted.
- J. Bidder's organization shall submit completed with Bid, Fair Labor Practices Certification form, included in these Construction Documents.
- K. Bidder's Organization should register for both the D-U-N-S and CCR number prior to bid opening.

#### **14. SUBCONTRACTOR LISTING**

- A. Bidders shall be required to submit list of major subcontractors for General Construction, Plumbing, HVAC, and Electrical work proposed for this project to include committed prices for each subcontractor. List shall be placed in separate sealed envelope that must be clearly identified as "Major Subcontractor List", for named project and name of Bidder submitting it. County must receive envelope no later than date by which successful Bidder is required to submit his or her signed Contract, as established in Construction Documents.

#### **15. ALTERNATE BIDS**

- A. Bidder shall carefully read requests for Alternate Bids, and thoroughly examine Drawings and Specifications to determine extent various changes and conditions will affect Bid.
- B. Space is provided in Bid Form for requested Alternate Bids. Failure to submit bid for any requested Alternate Bids may result in rejection of entire Bid.
- C. Bidder shall state amount to be added / subtracted to Base Bid for providing alternates, including all incidentals, omissions, additions, and adjustments as may be necessary or required by such changes. If there is no difference in price, Bidder shall state, "No Change".
- D. Bidder shall honor Alternate Bid amount for a period of one hundred (120) days.
- E. Descriptions of requested Alternate Bids are as set forth in Construction Documents.

#### **16. INFORMATIONAL BIDS**

- A. Bidder shall state amount that is included in Base Bid for all equipment, materials and labor required to complete the Work described. Informational bids are amounts requested for accounting purposes and for allocation of funds only. It is not intended to omit any of the Work described or related items from this project.
- B. Description of requested Informational Bids, if any, is as set forth in Construction Documents.

#### **17. UNIT PRICES**

- A. Provide unit prices where requested on Bid Form. Unit prices will include all costs for materials, labor, insurance, taxes, overhead and profit necessary to perform specified work. Estimated quantities are approximate only. Payment will be based upon actual quantities

placed, provided or installed. Failure to provide requested unit prices may result in rejection of entire Bid.

- B. Owner reserves right to accept or reject any unit prices as given in Bid.
- C. Bidder shall refer to Bid Form and applicable specification section to determine basis of unit measure and detailed information related to each unit price item requested.

## **18. COMMENCEMENT AND COMPLETION**

- A. Successful Bidder shall commence work when schedule and weather permit, but no later than stated in Bid Form. Contractor shall pursue the Work regularly and continuously at reasonable rate to insure completion of the Work within time stated in Bid.
- B. Should it be found impossible to complete the Work on or before time specified for completion, written request may be submitted for extension of time setting forth reasons believed to justify granting of such request. Refer to [Article 20 of General Conditions of Contract, titled "Time for Completion."

## **19. WORK BY OWNER**

- A. Owner will be responsible for constructing the concrete slab for the ground mount option for the Springfield Highway Garage.



**FORM A**

**DANE COUNTY  
EMERGING SMALL BUSINESS REPORT - CERTIFICATION**

In accordance with General Conditions of Contract, submit this Emerging Small Business Report within 24 hours after Bid Due Date.

PROJECT NAME: \_\_\_\_\_

\_\_\_\_\_

BID NO.: \_\_\_\_\_ BID DUE DATE: \_\_\_\_\_

**BIDDER INFORMATION**

COMPANY NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

\_\_\_\_\_

TELEPHONE NO.: \_\_\_\_\_

CONTACT PERSON: \_\_\_\_\_

**FORM B**

**DANE COUNTY  
EMERGING SMALL BUSINESS REPORT - INVOLVEMENT**

Page \_\_\_ of \_\_\_  
(Copy this Form as necessary to provide complete information)

COMPANY NAME: \_\_\_\_\_

PROJECT NAME: \_\_\_\_\_ BID NO.: \_\_\_\_\_

ESB NAME: \_\_\_\_\_ CONTACT PERSON: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ PHONE NO.: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

**Indicate percentage of financial commitment to this ESB: \_\_\_\_\_ % Amount: \$ \_\_\_\_\_**

ESB NAME: \_\_\_\_\_ CONTACT PERSON: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ PHONE NO.: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

**Indicate percentage of financial commitment to this ESB: \_\_\_\_\_ % Amount: \$ \_\_\_\_\_**

ESB NAME: \_\_\_\_\_ CONTACT PERSON: \_\_\_\_\_

ADDRESS: \_\_\_\_\_ PHONE NO.: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

**Indicate percentage of financial commitment to this ESB: \_\_\_\_\_ % Amount: \$ \_\_\_\_\_**

**FORM C**

**DANE COUNTY  
EMERGING SMALL BUSINESS REPORT - CONTACTS**

Page \_\_\_ of \_\_\_  
(Copy this Form as necessary to provide complete information)

COMPANY NAME: \_\_\_\_\_

PROJECT NAME: \_\_\_\_\_ BID NO.: \_\_\_\_\_

	<u>ESB FIRM NAME CONTACTED</u>	<u>DATE</u>	<u>PERSON CONTACTED</u>	<u>DID ESB BID?</u>	<u>DID YOU ACCEPT BID?</u>	<u>REASON FOR REJECTION</u>
1)	_____	_____	_____	_____	_____	_____
2)	_____	_____	_____	_____	_____	_____
3)	_____	_____	_____	_____	_____	_____
4)	_____	_____	_____	_____	_____	_____
5)	_____	_____	_____	_____	_____	_____
6)	_____	_____	_____	_____	_____	_____
7)	_____	_____	_____	_____	_____	_____

**FORM D**

**DANE COUNTY  
EMERGING SMALL BUSINESS REPORT - CERTIFICATION STATEMENT**

I, \_\_\_\_\_, \_\_\_\_\_ of  
Name Title

\_\_\_\_\_ certify to best of my knowledge and  
Company

belief that this business meets Emerging Small Business definition as indicated in Article 9 and  
that information contained in this Emerging Small Business Report is true and correct.

\_\_\_\_\_  
Bidder's Signature

\_\_\_\_\_  
Date

**BID FORM**

**BID NO. 310034**

**PROJECT: SOLAR PHOTOVOLTAIC FACILITIES  
MULIPLE LOCATIONS  
DANE COUNTY, WISCONSIN**

**TO: DANE COUNTY DEPARTMENT OF PUBLIC WORKS, HIGHWAY &  
TRANSPORTATION PROJECT ENGINEER  
1919 ALLIANT ENERGY CENTER WAY  
MADISON, WISCONSIN 53713**

**BASE BID:**

Construction services to install several solar photovoltaic facilities throughout Dane County. The locations included in the base bid are the Dane County Highway Garage, Dane County Job Center, and Springfield Corners Highway Garage. The undersigned, having examined the sites where the Work is to be executed and having become familiar with local conditions affecting the cost of the Work and having carefully examined the Drawings and Specifications, all other Construction Documents and Addenda thereto prepared by Dane County Department of Public Works, Highway & Transportation hereby agrees to provide all labor, materials, equipment and services necessary for the complete and satisfactory execution of the entire Work, as specified in the Construction Documents, for the Base Bid stipulated sum of:

- Dane County Highway Garage  
2302 Fish Hatchery Road, Madison, WI 53713,  
Roof Mount Option, 10 kW system: \_\_\_\_\_
  
- Dane County Job Center  
1819 Aberg Avenue, Madison, WI 53704,  
Roof Mount Option, 10 kW system: \_\_\_\_\_
  
- Springfield Corners Highway Garage  
6159 USH 12, Dane, WI 53529,  
Ground Mount Option, Concrete Slab By Owner,  
10 kW system: \_\_\_\_\_

Total: \$ \_\_\_\_\_  
Numeric Price

\_\_\_\_\_ and \_\_\_\_\_ /100 Dollars  
Written Price

The undersigned further agrees to add the alternate(s) portion of the Work as described, for the following addition(s) to or subtraction(s) from the Base Bid stipulated below. They further agree to honor the alternate(s) bid for 60 days from date of Award of Contract.

**ALTERNATE BID A - LUMP SUM:**

Deduct price for installing a roof mounted 5 kW solar photovoltaic facility (in lieu of 10 kW) at the Dane County Highway Garage.

\_\_\_\_\_ and \_\_\_\_\_ /100 Dollars  
Written Price

\$ \_\_\_\_\_  
Numeric Price (circle: Add or Deduct)

**ALTERNATE BID B - LUMP SUM:**

Deduct for installing a roof mounted 5 kW solar photovoltaic facility (in lieu of 10 kW) at the Dane County Job Center.

\_\_\_\_\_ and \_\_\_\_\_ /100 Dollars  
Written Price

\$ \_\_\_\_\_  
Numeric Price (circle: Add or Deduct)

**ALTERNATE BID C - LUMP SUM:**

Deduct for installing a roof mounted 5 kW solar photovoltaic facility (in lieu of 10 kW) at the Springfield Corners Highway Garage.

\_\_\_\_\_ and \_\_\_\_\_ /100 Dollars  
Written Price

\$ \_\_\_\_\_  
Numeric Price (circle: Add or Deduct)

**ALTERNATE BID D - LUMP SUM:**

Add price for installing a solar photovoltaic facility at the Badger Salt Shed, 3650 CTH T, Madison, WI 53718, pole/tracker option.

\_\_\_\_\_ and \_\_\_\_\_ /100 Dollars  
Written Price

\$ \_\_\_\_\_  
Numeric Price (circle: Add or Deduct)

**ALTERNATE BID E - LUMP SUM:**

Add price for installing a solar photovoltaic facility at the Landfill Main Garage, 7102 USH 12 & 18, Madison, WI 53718, roof mount option.

\_\_\_\_\_ and \_\_\_\_\_ /100 Dollars  
Written Price

\$ \_\_\_\_\_  
Numeric Price (circle: Add or Deduct)

Receipt of the following addenda and inclusion of their provisions in this Bid is hereby acknowledged:

Addendum No(s). \_\_\_\_\_ through \_\_\_\_\_

Dated \_\_\_\_\_

Dane County must have this project completed by April 29, 2011. Assuming this Work can be started by February 14, 2011, what dates can you commence and complete this job?

Commencement Date: \_\_\_\_\_ Completion Date: \_\_\_\_\_  
(final, not substantial)

I hereby certify that all statements herein are made on behalf of:

\_\_\_\_\_  
(Name of Corporation, Partnership or Person submitting Bid)

Select one of the following:

1. A corporation organized and existing under the laws of the State of \_\_\_\_\_, or
2. A partnership consisting of \_\_\_\_\_, or
3. A person conducting business as \_\_\_\_\_;

Of the City, Village, or Town of \_\_\_\_\_ of the State of \_\_\_\_\_.

I have examined and carefully prepared this Bid from the associated Construction Documents and have checked the same in detail before submitting this Bid; that I have full authority to make such statements and submit this Bid in (its) (their) (my) behalf; and that the said statements are true and correct. In signing this Bid, we also certify that we have not, either directly or indirectly, entered into any agreement or participated in any collusion or otherwise taken any action in restraint of free competition; that no attempt has been made to induce any other person or firm to submit or not to submit a Bid; that this Bid has been independently arrived at without collusion with any other bidder, competitor, or potential competitor; that this Bid has not been knowingly disclosed prior to the opening of Bids to another bidder or competitor; that the above statement is accurate under penalty of perjury.

**SIGNATURE:** \_\_\_\_\_  
(Bid is invalid without signature)

Print Name: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_

Email Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_



**BID CHECK LIST:**

These items **must** be included with Bid:

 Bid Form Bid Bond Fair Labor Practices Certification

**THE FOLLOWING IS FOR BIDDERS' REFERENCE AND ARE REQUIRED BUT NEED NOT BE SUBMITTED WITH BID FORM:**

**DANE COUNTY VENDOR REGISTRATION PROGRAM**

Any person bidding on any County contract must be registered with the Dane County Purchasing Division & pay an annual registration fee. A contract will not be awarded to an unregistered vendor. Obtain a *Vendor Registration Form* by calling 608/266-4131 or complete a new form or renewal one online at:

[www.danepurchasing.com/registration](http://www.danepurchasing.com/registration)

**DANE COUNTY BEST VALUE CONTRACTING PRE-QUALIFICATION**

Contractors must be pre-qualified as a Best Value Contractor with the Dane County Public Works Engineering Division before the award of contract. Obtain a *Best Value Contracting Application* by calling 608/266-4018 or complete one online at:

[www.co.dane.wi.us/pwht/BVC\\_Application.aspx](http://www.co.dane.wi.us/pwht/BVC_Application.aspx)

**EQUAL BENEFITS REQUIREMENT**

By submitting a Bid, the contractor acknowledges that a condition of this contract is to provide equal benefits as required by Dane County Code of Ordinances Chapter 25.016. Contractor shall provide equal benefits as required by that Ordinance to all required employees during the term of the contract. For more information:

[www.danepurchasing.com/partner\\_benefit.aspx](http://www.danepurchasing.com/partner_benefit.aspx)

**OBTAIN D-U-N-S NUMBER, CCR NUMBER AND REVIEW ALL ARRA REPORTING**

In order to be selected as successful bidder, the contractor must obtain a free D-U-N-S number. A D-U-N-S number is a unique nine-digit sequence recognized as the universal standard for identifying and keeping track of a business. The D-U-N-S number may be obtained by the following link: [http://www.dnb.com/us/duns\\_update/index.html](http://www.dnb.com/us/duns_update/index.html).

Central Contractor Registration (CCR) is the primary registrant database for the U.S. Federal Government. CCR collects, validates, stores and disseminates data in support of agency acquisition missions. The CCR number may be obtained by the following link: <https://www.bpn.gov/CCR/default.aspx>.

The American Recovery and Reinvestment Act (ARRA) requires the contractor to provide information for monthly and quarterly reporting throughout the life of the project. Please review the attached ARRA reporting requirements before bidding.

### **DAVIS-BACON, EECBG, F.O.E., AND BUY AMERICAN PROVISIONS**

All wages for all trades participating in this project are subject to the State of Wisconsin Prevailing Wage Rates or Federal Davis-Bacon Wage Rates, whichever is larger. The Davis-Bacon wage rates are provided in the Supplementary Conditions and may be modified prior to bid opening. (Except if modified within ten days of Bid Opening.)

This project is funded by the Energy Efficiency Conservation Block Grant (EECBG). Information about the EECBG can be found at: <http://www.eecbg.energy.gov/>.

Focus On Energy rebates will be applied for during this project. Information about F.O.E. can be found at: <http://www.focusonenergy.com/>.

All products used in this project will be required to meet Buy American Provisions. Guidance for meeting Buy American Provisions can be found at: [http://www1.eere.energy.gov/recovery/buy\\_american\\_provision.html](http://www1.eere.energy.gov/recovery/buy_american_provision.html).

## FAIR LABOR PRACTICES CERTIFICATION

The undersigned, for and on behalf of the BIDDER, APPLICANT or PROPOSER named herein, certifies as follows:

A. That he or she is an officer or duly authorized agent of the above-referenced BIDDER, APPLICANT or PROPOSER, which has submitted a proposal, bid or application for a contract with the county of Dane.

B. That BIDDER, APPLICANT or PROPOSER has (check one):

\_\_\_\_\_ not been found by the National Labor Relations Board (“NLRB”) or the Wisconsin Employment Relations Commission (“WERC”) to have violated any statute or regulation regarding labor standards or relations in the seven years prior to the signature date of this Certification.

\_\_\_\_\_ been found by the National Labor Relations Board (“NLRB”) or the Wisconsin Employment Relations Commission (“WERC”) to have violated any statute or regulation regarding labor standards or relations in the seven years prior to the signature date of this Certification.

\_\_\_\_\_  
Officer or Authorized Agent Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed or Typed Name and Title

\_\_\_\_\_  
Printed or Typed Business Name

**NOTE:** You can find information regarding the violations described above at: [www.nlr.gov](http://www.nlr.gov) and [werc.wi.gov](http://werc.wi.gov).

For reference, Dane County Ordinance 25.11(28)(a) is as follows:

(28) BIDDER RESPONSIBILITY. (a) Any bid, application or proposal for any contract with the county, including public works contracts regulated under chapter 40, shall include a certification indicating whether the bidder has been found by the National Labor Relations Board (NLRB) or the Wisconsin Employment Relations Committee (WERC) to have violated any statute or regulation regarding labor standards or relations within the last seven years. The purchasing manager shall investigate any such finding and make a recommendation to the committee, which shall determine whether the conduct resulting in the finding affects the bidder’s responsibility to perform the contract.

**If you indicated that the NLRB or WERC have found you to have such a violation, you must include copies of any relevant information regarding such violation with your proposal, bid or application.**



# DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

County Executive  
Kathleen M. Falk

1919 Alliant Energy Center Way • Madison, Wisconsin 53713  
Phone: (608) 266-4018 • FAX: (608) 267-1533

Commissioner / Director  
Gerald J. Mandli

## BEST VALUE CONTRACTING APPLICATION

### CONTRACTORS / LICENSURE APPLICANTS

The Dane County Department of Public Works requires all contractors to be pre-qualified as a best value contractor with the County prior to being awarded a contract. In addition, the County pre-qualifies potential contractors and sub-contractors who wish to work on County contracts. Subcontractors must become pre-qualified ten (10) days prior to commencing work under any Dane County Public Works Contract. Potential subcontractors are urged to become pre-qualified as early as possible. This document shall be completed, properly executed, along with the necessary attachments and additional information that the County requires for the protection and welfare of the public in the performance of a County contract.

Contractors or subcontractors of any tier who attain prequalification status will retain that status for a period of two (2) years from the date of qualification. Contractors shall notify the Dane County Department of Public Works, Highway & Transportation within 15 days of any changes to its business or operations that are relevant to the prequalification application. Failure to do so could result in suspension, revocation of the contractor's prequalification, debarment from County contracts for up to three years and / or other sanctions available under the law.

No contracts will be awarded for construction work performed on Dane County projects unless the contractor is currently approved as a Wisconsin Trade Trainer or has applied for approval as an Apprenticeship Trade Trainer to the Wisconsin Department of Workforce Development and agrees to an acceptable apprenticeship program. If you are not currently approved as a Wisconsin Trade Trainer, or have not applied for approval as an Apprenticeship Trade Trainer, please contact the Department of Workforce Development - Bureau of Apprenticeship Standards at 608/266-3133 or visit their web site at: [dwd.wisconsin.gov/apprenticeship/](http://dwd.wisconsin.gov/apprenticeship/).

### EXEMPTIONS

- Contractors or subcontractors of any tier attain prequalification status with Dane County if the contractor has current Executive Order 108 precertification status with the State of Wisconsin.
- Contractors who employ less than five (5) apprenticeable trade workers are not required to prequalify.
- Contractors performing work that does not apply to an apprenticeable trade, as outlined in Appendix A.
- The contractor / subcontractor provides sufficient documentation to demonstrate one or more of the following:
  - apprentices are not available in a specific geographic area;
  - the applicable apprenticeship program is unsuitable or unavailable; or
  - there is a documented depression of the local construction market which prevents compliance.

SEC.	PROOF OF RESPONSIBILITY	CHECK IF APPLICABLE
1	Does your firm possess all technical qualifications and resources, including equipment, personnel and financial resources, necessary to perform the work required for any project or obtain the same through the use of responsible, prequalified subcontractors?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
2	Will your firm possess all valid, effective licenses, registrations or certificates required by federal, state, county, or local law, which are necessary for the type of work to be performed including, but not limited to, those for any type of trade work or specialty work?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
3	Will your firm meet all bonding requirements as required by applicable law or contract specifications?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
4	Will your firm meet all insurance requirements as required by applicable law or specifications, including general liability insurance, workers compensation insurance and unemployment insurance requirements?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
5	Will your firm maintain a substance abuse policy for employees hired for public works contracts that comply with Wis. Stats. Sec. 103.503?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
6	Does your firm acknowledge that it must pay all craft employees on public works projects the wage rates and benefits required under Section 66.0903 of the Wisconsin Statutes?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
7	Will your firm fully abide by the equal opportunity and affirmative action requirements of all applicable laws, including County ordinances?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
8	In the past three (3) years, has your firm had control or has another corporation, partnership or other business entity operating in the construction industry controlled it? If so, please attach a statement explaining the nature of the firm relationship?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
9	In the past three (3) years, has your firm had any type of business, contracting or trade license, certification or registration revoked or suspended?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
10	In the past three (3) years, has your firm been debarred by any federal, state or local government agency?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
11	In the past three (3) years, has your firm defaulted or failed to complete any contract?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
12	In the past three (3) years, has your firm committed a willful violation of federal, state or local government safety laws as determined by a final decision of a court or government agency authority.	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
13	In the past three (3) years, has your firm been in violation of any law relating to your contracting business where the penalty for such violation resulted in the imposition of a penalty greater than \$10,000?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
14	Is your firm Executive Order 108 precertified with the State of Wisconsin?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
15	Is your firm an active Wisconsin Trade Trainer as determined by the Wisconsin Bureau of Apprenticeship Standards and listed at: <a href="http://dwd.wisconsin.gov/apprenticeship/executive_order108.htm">dwd.wisconsin.gov/apprenticeship/executive_order108.htm</a> ?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
16	Is your firm exempt from being prequalified with Dane County?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach reason for exemption.
17	Does your firm acknowledge that in doing work under any County Public Works Contract, it will be required to use as subcontractors only those contractors that are also prequalified with the County or become so ten days prior to commencing work?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>

## SIGNATURE SECTION

Your firm's Officer, or the individual who would sign a bid and / or contract documents must sign this document.

I do hereby certify that all statements herein contained are true and correct to the best of my knowledge:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed or Typed Name and Title

NAME AND ADDRESS OF CONTRACTOR	
Name of Firm:	
Address:	
City, State, Zip:	
Telephone Number:	
Fax Number:	
E-mail Address:	

## REMEMBER!

Return all to forms and attachments, or questions to:

**JOHN SCHRAUFNAGEL**  
**EMAIL: SCHRAUFNAGEL@CO.DANE.WI.US**  
**OFFICE: (608)266-4798, CELL: (608)575-3374, FAX: (608)267-1533**

**DANE COUNTY DEPARTMENT OF PUBLIC WORKS,  
HIGHWAY & TRANSPORTATION  
1919 ALLIANT ENERGY CENTER WAY  
MADISON, WI 53713**

# APPENDIX A

## APPRENTICEABLE TRADES

Bricklayer  
Carpenter  
Cement Mason (Concrete Finisher)  
Cement Mason (Heavy Highway)  
Construction Craft Laborer  
Data Communications Installer  
Electrician  
Elevator Mechanic / Technician  
Environmental Systems Technician / HVAC Service Technician / HVAC Install & Service  
Glazier  
Heavy Equipment Operator / Operating Engineer  
Insulation Worker (Heat & Frost)  
Iron Worker (Assembler, Metal Buildings)  
Painter / Decorator  
Plasterer  
Plumber  
Roofer / Waterproofer  
Sheet Metal Worker  
Sprinkler Fitter  
Steamfitter (Service & Refrigeration)  
Taper & Finisher  
Telecommunications (Voice, Data & Video) Installer / Technician  
Tile Setter

**COUNTY OF DANE**

**PUBLIC WORKS CONTRACT**

Contract No. \_\_\_\_\_ Bid No. 310034

Authority: Res. \_\_\_\_\_, [2009-10]

**THIS CONTRACT**, made and entered into as of the date by which authorized representatives of both parties have affixed their signatures, by and between the County of Dane (hereafter referred to as "COUNTY") and \_\_\_\_\_ (hereafter, "CONTRACTOR"), and

**WITNESSETH:**

**WHEREAS**, COUNTY, whose address is c/o Associate Public Works Director, 1919 Alliant Energy Center Way, Madison, WI 53713, desires to have CONTRACTOR provide Solar Photovoltaic Facilities ("the Project"); and

**WHEREAS**, CONTRACTOR, whose address is \_\_\_\_\_ is able and willing to construct the Project, in accordance with the Construction Documents;

**NOW, THEREFORE**, in consideration of the above premises and the mutual covenants of the parties hereinafter set forth, the receipt and sufficiency of which is acknowledged by each party for itself, COUNTY and CONTRACTOR do agree as follows:

1. CONTRACTOR agrees to construct, for the price of \$\_\_\_\_\_ the Project and at the CONTRACTOR'S own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence labor, insurance, and other accessories and services necessary to complete the Project in accordance with the conditions and prices stated in the Bid Form, General Conditions of Contract, the drawings which include all maps, plats, plans, and other drawings and printed or written explanatory matter thereof, and the specifications therefore as prepared by Harwood Engineering Consultants, LTD (hereinafter referred to as "the Architect / Engineer"), and as enumerated in the Project Manual Document Index, all of which are made a part hereof and collectively evidence and constitute the Contract.

2. COUNTY agrees to pay the CONTRACTOR in current funds for the performance of the Contract subject to additions and deductions, as provided in the General Conditions of Contract and to make payments on account thereof as provided in Article entitled, "Payments to Contractor" of the General Conditions of Contract.

3. During the term of this Contract, CONTRACTOR agrees to take affirmative action to ensure equal employment opportunities. The CONTRACTOR agrees in accordance with Wisconsin Statute 111.321 and Chapter 19 of the Dane County Code of Ordinances not to discriminate on the basis of age, race, ethnicity, religion, color, gender, disability, marital status, sexual orientation, national origin, cultural differences, ancestry, physical appearance, arrest record or conviction record, military participation or membership in the national guard, state defense force or any other reserve component of the military forces of the United States, or political beliefs. Such equal opportunity shall include, but not be limited to, the following: employment,



upgrading, demotion, transfer, recruitment, advertising, layoff, termination, training, rates of pay, and any other form of compensation. CONTRACTOR agrees to post in conspicuous places, available to all employees and applicants for employment, notices setting forth the provisions of this paragraph.

**4.** CONTRACTOR shall file an Affirmative Action Plan with the Dane County Contract Compliance Officer in accord with Chapter 19 of the Dane County Code of Ordinances. CONTRACTOR must file such plan within fifteen (15) days of the effective date of this Contract. During the term of this Contract CONTRACTOR shall also provide copies of all announcements of employment opportunities to COUNTY'S Contract Compliance Office, and shall report annually the number of persons, by race, ethnicity, gender, and disability status, which apply for employment and, similarly classified, the number hired and number rejected.

**5.** During the term of this Contract, all solicitations for employment placed on CONTRACTOR'S behalf shall include a statement to the effect that CONTRACTOR is an "Equal Opportunity Employer."

**6.** CONTRACTOR agrees to comply with provisions of Chapter 25.016 of the Dane County Code of Ordinances, which pertains to domestic partnership benefits.

**7.** CONTRACTOR agrees to furnish all information and reports required by COUNTY'S Contract Compliance Officer as the same relate to affirmative action and nondiscrimination, which may include any books, records, or accounts deemed appropriate to determine compliance with Chapter 19, Dane County Code of Ordinances, and the provisions of this Contract.

**8.** CONTRACTOR agrees that all persons employed by CONTRACTOR or any subcontractor shall be paid no less than the minimum wage established under Chapter 40, Subchapter II, Dane County Code of Ordinances. CONTRACTOR agrees to abide by and comply with the provisions of Chapter 40, Subchapter II of the Dane County Code of Ordinances, and said Subchapter is fully incorporated herein by reference.

**9.** This Contract is intended to be a Contract solely between the parties hereto and for their benefit only. No part of this Contract shall be construed to add to, supplement, amend, abridge or repeal existing rights, benefits or privileges of any third party or parties including, but not limited to, employees of either of the parties.

**10.** The entire agreement of the parties is contained herein and this Contract supersedes any and all oral agreements and negotiations between the parties relating to the subject matter hereof. The parties expressly agree that the express terms of this Contract shall not be amended in any fashion except in writing, executed by both parties.

**11.** CONTRACTOR must be pre-qualified as a Best Value Contractor with Dane County Public Works Engineering Division before award of Contract. Subcontractors must be pre-qualified ten (10) days prior to commencing Work under this Contract.

**IN WITNESS WHEREOF**, COUNTY and CONTRACTOR, by their respective authorized agents, have caused this Contract and its Schedules to be executed, effective as of the date by which all parties hereto have affixed their respective signatures, as indicated below.

\* \* \* \* \*

**FOR CONTRACTOR:**

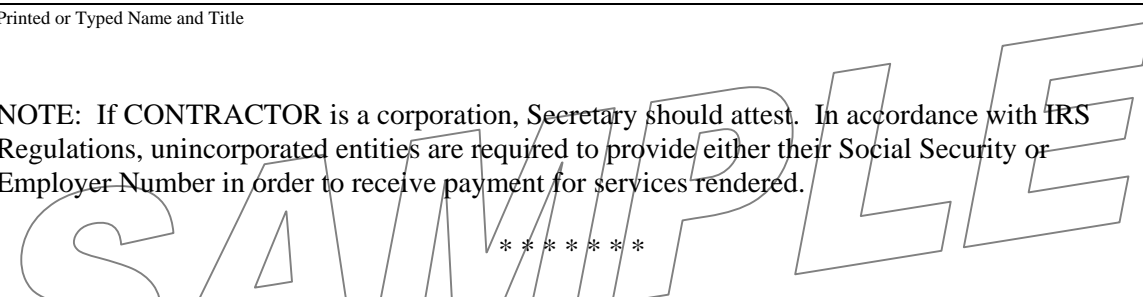
\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Printed or Typed Name and Title

\_\_\_\_\_  
Signature Date

\_\_\_\_\_  
Printed or Typed Name and Title

NOTE: If CONTRACTOR is a corporation, Secretary should attest. In accordance with IRS Regulations, unincorporated entities are required to provide either their Social Security or Employer Number in order to receive payment for services rendered.



\* \* \* \* \*

This Contract is not valid or effectual for any purpose until approved by the appropriate authority designated below, and no work is authorized until the CONTRACTOR has been given notice to proceed by COUNTY'S Associate Public Works Director.

**FOR COUNTY:**

\_\_\_\_\_  
Kathleen M. Falk, County Executive Date

\_\_\_\_\_  
Robert Ohlsen, County Clerk Date

THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A310

Bid Bond

Bond No.

KNOW ALL MEN BY THESE PRESENTS, that we (Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and (Here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of WI as Surety, hereinafter called the Surety, are held and firmly bound unto (Here insert full name and address or legal title of Owner)

as Obligee, hereinafter called Obligee, in the sum of ( ) Percent of total amount bid Dollars (\$) Percent of attached bid.

For the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for Project No.: (Here insert full name, address, and description of project)

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this day of , 20 .

(Principal) (Seal)
(Witness)
(Title)
(Surety) (Seal)
(Witness)
ATTORNEY-IN-FACT

THE AMERICAN INSTITUTE OF ARCHITECTS



Bond No. \_\_\_\_\_

AIA Document A312

Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address): \_\_\_\_\_

SURETY (Name and Principal Place of Business): \_\_\_\_\_

OWNER (Name and Address): \_\_\_\_\_

CONSTRUCTION CONTRACT  
Date: \_\_\_\_\_  
Amount: \$ \_\_\_\_\_  
Description (Name and Location): \_\_\_\_\_

BOND

Date (Not earlier than Construction Contract Date): \_\_\_\_\_

Amount: \$ \_\_\_\_\_

Modifications to this Bond: \_\_\_\_\_

None

See Page 3

CONTRACTOR AS PRINCIPAL  
COMPANY: \_\_\_\_\_  
(Corporate Seal)

SURETY COMPANY: \_\_\_\_\_  
(Corporate Seal)

Signature: \_\_\_\_\_  
Name and Title:

Signature: \_\_\_\_\_  
Name and Title:

Attorney-in-Fact

(Any additional signatures appear on page 3)

FOR INFORMATION ONLY-Name, Address and Telephone  
AGENT OR BROKER: \_\_\_\_\_

OWNER'S REPRESENTATIVE (Architect,  
Engineer or other party): \_\_\_\_\_

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.

3. If there is no Owner Default, the Surety's obligation under this Bond shall arise after:

3.1 The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 below that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; and

3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1; and

3.3 The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.

4. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1 Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or

4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or

4.4 Waive its rights to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

1. After investigation, determine the amount for

which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefor to the Owner; or

2. Deny liability in whole or in part and notify the Owner citing reasons therefor.

5. If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

6. After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:

6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

6.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and

6.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

**12 DEFINITIONS**

12.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other

claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

12.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

12.4 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

**MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:**

SAMPLE

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL  
Company: (Corporate Seal)

SURETY  
Company: (Corporate Seal)

Signature: \_\_\_\_\_  
Name and Title:  
Address:

Signature: \_\_\_\_\_  
Name and Title:  
Address:

THE AMERICAN INSTITUTE OF ARCHITECTS



Bond No. \_\_\_\_\_

AIA Document A312

Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

CONSTRUCTION CONTRACT  
Date:  
Amount: \$  
Description (Name and Location):

BOND

Date (Not earlier than Construction Contract Date):

Amount: \$

Modifications to this Bond:

None

See Page 6

CONTRACTOR AS PRINCIPAL  
COMPANY: (Corporate Seal)

SURETY COMPANY:  
(Corporate Seal)

Signature: \_\_\_\_\_  
Name and Title:

Signature: \_\_\_\_\_  
Name and Title:  
Attorney-in-Fact

(Any additional signatures appear on page 6)

FOR INFORMATION ONLY-Name, Address and Telephone  
AGENT OR BROKER:

OWNER'S REPRESENTATIVE (Architect,  
Engineer or other party):

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.
2. With respect to the Owner, this obligation shall be null and void if the Contractor:
  - 2.1 Promptly makes payment, directly, or indirectly, for all sums due Claimants, and
  - 2.2 Defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity whose claim, demand, lien or suit is for the payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.
4. The Surety shall have no obligation to Claimants under this Bond until:
  - 4.1 Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
  - 4.2 Claimants who do not have a direct contract with the Contractor:
    1. Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and
    2. Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and
    3. Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.
5. If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.
6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:
  - 6.1 Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.
  - 6.2 Pay or arrange for payment of any undisputed amounts.
7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
8. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any Construction Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
9. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
12. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor



shall promptly furnish a copy of this Bond or shall permit a copy to be made.

**15. DEFINITIONS**

**15.1 Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's

subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

**15.2 Construction Contract:** The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

**15.3 Owner Default:** Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

**MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:**

SAMPLE

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL  
Company: (Corporate Seal)

SURETY  
Company: (Corporate Seal)

Signature: \_\_\_\_\_  
Name and Title:  
Address:

Signature: \_\_\_\_\_  
Name and Title:  
Address:

# GENERAL CONDITIONS OF CONTRACT

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## **1. CONSTRUCTION DOCUMENTS**

- A. Construction Documents, listed in Table of Contents of this Specification volume shall form part of this Contract and provisions of Construction Documents shall be as binding upon parties as if they were fully set forth in Contract itself.
- B. These shall also be considered as part of Construction Documents: Addenda, including additions and modifications incorporated in such addenda before execution of Contract; requests for information; construction bulletins; change orders; and written interpretations by Engineer or Public Works Project Engineer that are made after execution of Contract.
- C. Construction Documents are complementary, and what is required by one shall be as binding as if required by all. Intent of Construction Documents is to include all labor, materials and equipment necessary for proper execution of the Work.

## **2. DEFINITIONS**

- A. These terms as used in this Contract are respectively defined as follows:
  - 1. All uses of term “County” in Construction Documents shall mean Dane County.
  - 2. All uses of term “Department” in Construction Documents shall mean Department of Public Works, Highway & Transportation, which is a unit of Dane County government. Department is County agency overseeing Contract with Contractor.
  - 3. Public Works Project Engineer is appointed by and responsible to Department. Public Works Project Engineer has authority to act on behalf of Department and will sign change orders, payment requests and other administrative matters related to projects.
  - 4. Public Works Project Engineer is responsible for supervision, administration and management of field operations involved in construction phase of this Work.
  - 5. Term “Work” includes all labor, equipment and materials necessary to produce project required by Construction Documents.
  - 6. Term “Substantial Completion” is date when project or specified area of project is certified by Engineer that construction is sufficiently completed, in accordance with Construction Documents, and as modified by any subsequent changes agreed to by parties, so that County may occupy project or specified area of project for use for which it was intended subject to permit approval for occupancy.
  - 7. Contractor is person, firm, or corporation with whom County makes Contract. Though multiple contracts may be involved, Construction Documents treat them throughout as if each were of singular number.

## **3. ADDITIONAL INSTRUCTIONS AND DRAWINGS**

- A. Contractor may be furnished additional instructions and detail drawings as necessary to carry out the Work included in Contract. Additional drawings and instructions thus supplied to Contractor will coordinate with Construction Documents and will be so prepared that they can be reasonably interpreted as part thereof. Contractor shall carry out the Work in accordance with additional detail drawings and instructions.

## **4. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES**

- A. Unless otherwise specified, Contractor shall submit three (3) copies of all Shop Drawings for each submission, until receiving final approval. After final approval, provide five (5) additional copies for distribution and such other copies as may be required.

- B. Contractor shall submit, on an on-going basis and as directed, Product Data such as brochures that shall contain catalog cuts and specifications of all furnished mechanical and electrical equipment. After Engineer's approval, one (1) copy shall remain in Engineer's file, one (1) kept at Department's office and one (1) kept at job site by Contractor for reference purposes.
- C. Samples shall consist of physical examples furnished by Contractor in sufficient size and quantity to illustrate materials, equipment or workmanship, and to establish standards to compare the Work.
  - 1. Submit Samples in sufficient quantity (minimum of two (2)) to permit Engineer to make all necessary tests and of adequate size showing quality, type, color range, finish, and texture. Label each Sample stating material, type, color, thickness, size, project name, and Contractor's name.
  - 2. Submit transmittal letter requesting approval, and prepay transportation charges to Engineer's office on samples forwarded.
  - 3. Materials installed shall match approved Samples.
- D. Contractor shall review Shop Drawings and place their dated stamp thereon to evidence their review and approval and shall submit with reasonable promptness and in orderly sequence to cause no delay in the Work or in work of any other contractor. At time of submission, Contractor shall inform Engineer in writing of any deviation in Shop Drawings or Samples from requirements of Construction Documents. Engineer will not consider partial lists.
- E. Engineer will review and approve or reject Shop Drawings with reasonable promptness to cause no delay. Engineer's approval shall not relieve Contractor from responsibility for errors or omission in Shop Drawings.
- F. Contractor shall not commence any work requiring Shop Drawing, Product Data or Sample submission until Engineer has approved submission. All such work shall be in accordance with approved Shop Drawings, Product Data and Samples.
- G. Contractor shall keep on site of the Work, approved or conformed copy of Shop Drawings and shall at all time give Department access thereto.
- H. By stamping and submitting Shop Drawings, Product Data and Samples, Contractor thereby represents that he or she has or will determine and verify all field measurements, field construction criteria, materials, catalog numbers, and similar data and that he or she has checked and coordinated each Shop Drawing, Product Data and Sample with requirements of the Work and of Construction Documents. Engineer shall return without examination, Shop Drawings, Product Data and Samples not so noted.
- I. All Shop Drawings from any one Contractor should be numbered consecutively and on cover sheet shall bear name and location of project, name of Contractor, date of submittal and date of each correction or revision and associated Specification section and page number.

## **5. CUTTING AND PATCHING**

- A. Contractor shall be responsible for all cutting, fitting or patching required to complete the Work or to make its parts fit together properly.
- B. Contractor shall not damage or endanger portion of the Work or fully or partially completed construction of County or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. Contractor shall not cut or otherwise alter such construction by County or separate contractor except with written consent of County and of such separate

contractor; such consent shall not be unreasonably withheld. Contractor shall not withhold unreasonably from County or separate contractor, Contractor's consent to cutting or otherwise altering the Work.

## **6. CLEANING UP**

- A. Contractor shall keep premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under Contract. Contractor shall remove from and about the Work waste materials, rubbish, Contractor's tools, construction equipment, machinery, and surplus materials at completion of the Work. Contractor shall maintain streets and sidewalks around the Work site in clean condition. Contractor shall remove all spillage and prevent tracking of spillage arising from performance of the Work, into, out of, and within the Work site. Contractor shall establish regular maintenance program of sweeping, vacuuming and / or hosing to minimize accumulation of dirt and dust upon such areas.
- B. If Contractor fails to clean up as directed in Construction Documents, County may do so and shall charge Contractor cost thereof.
- C. Contractor shall be responsible for broken windows and glass, and at completion of the Work shall replace such damaged or broken windows and glass. After replacing damaged or broken windows and glass, Contractor shall remove all labels, wash and polish both sides of all windows and glass.
- D. In addition to general cleaning (sweeping, vacuuming and / or hosing, as is appropriate to work surface), Contractor shall perform following final cleaning for all trades at completion of the Work:
  - 1. Remove temporary protections, and;
  - 2. Remove marks, stains, fingerprints and other soil or dirt from painted and decorated wall surfaces.

## **7. USE OF SITE**

- A. Contractor shall provide County and Engineer access to the Work under all circumstances.
- B. Contractor shall confine operations at site to areas permitted by County, law, ordinance, permits and Construction Documents and shall not unreasonably encumber site with materials or equipment. Contractor shall assure free, convenient, unencumbered, direct and safe access to all properties adjacent to the Work for County, its employees, invitees and guests.

## **8. MATERIALS AND WORKMANSHIP**

- A. Contractor shall perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, necessary to complete the Work required by this Contract, within time specified, in accordance with provisions of Construction Documents.
- B. All equipment and materials incorporated in the Work covered by this Contract are to be new; use recycled and / or recovered materials to extent that such use is technically and economically feasible. Recovered materials are products recovered from solid waste in form identical to original form for use that is same as, or similar to original use. Recycled materials are products manufactured from solid waste.

- C. If requested, Contractor shall furnish satisfactory evidence as to kind and quality of construction materials proposed or used. Contractor shall furnish to Engineer, for approval, manufacturer name and model, performance capacities and other pertinent information of machinery, mechanical, electrical or other types of equipment, which Contractor plans to install.
- D. If not otherwise provided, materials and labor called for in this Contract shall be provided and performed in accordance with established practice and standards recognized by Architects, Engineers, Department, and construction industry.
- E. Reference to "Standard" specifications of any association or manufacturer, or codes of County authorities, intends most recent printed edition or catalog in effect on date that corresponds with date of Construction Documents.
- F. Whenever reference is made in Specifications that work shall be "performed", "applied", in accordance with "manufacturer's directions or instructions", Contractor to whom those instructions are directed shall furnish three (3) printed copies of such instructions to Engineer before execution of the Work.

## **9. CONTRACTOR'S TITLE TO MATERIALS**

- A. Contractor or any subcontractor shall not purchase materials or supplies for the Work subject to any chattel mortgage or under conditional sale contract or other agreement by which seller retains interest. Contractor warrants that all materials and supplies used in the Work are free from all liens, claims or encumbrances and Contractor has good title to them.

## **10. "OR EQUAL" CLAUSE**

- A. Whenever equipment or materials are identified on Drawings or in Specifications by reference to manufacturer's or vendor's name, trade name, catalog number, and other identifying information, it is intended to establish standards; and any equipment or material of other manufacturers and vendors which will perform adequately duties imposed by general design will be considered equally accepted provided equipment or material so proposed is, in opinion of Engineer, of equal substance and function. Engineer and Department shall provide written approval before Contractor may purchase or install it.
- B. Equipment or materials of manufacturers, other than those named, may be used only upon following conditions:
  - 1. That, in opinion of Engineer and Department, proposed material or equipment item is fully equal or superior (in design, materials, construction, workmanship, performance, finish, etc.) to named item. No compromise in quality level, however small, is acceptable.
  - 2. That, in substituting materials or equipment, Contractor assumes responsibility for any changes in system or for modifications required in adjacent or related work to accommodate such substitution despite Engineer's and Department's approval, and all costs growing out of approval of "or equal" items shall be responsibility of Contractor. No extra costs resulting from such approval shall become responsibility of Department, Engineer or any other separate Contractor.
  - 3. It shall be understood that use of materials or equipment other than those specified, or approved equal by Engineer and Department, shall constitute violation of Contract, and that Engineer and Department shall have right to require removal of such materials or

- equipment and their replacement with specified materials or equipment at Contractor's expense.
4. Product and manufacturer named first in Specifications or on information shown on Drawings is basis of selection of manufactured items and equipment, particularly mechanical equipment. In using other than first named products or manufacturers, including those specified as additionally approved or acceptable, Contractor assumes responsibility for any changes in system and for modifications in any work required to accommodate them. Engineer's approval of such additionally acceptable products or manufacturers, either in Specifications or in Addendum, does not relieve Contractor from obligation to coordinate such optional products with other Contractors, whose work may be affected by them, and to pay all additional costs resulting from their inclusion into the Work. Contractor's liability shall include payment of Engineer's fees for any additional services made necessary by or directly connected to such product changes. No extra costs resulting from such changes shall become responsibility of Department, Engineer or any other separate Contractor.
- C. No request for approval of "or equal" materials will be entertained except from Contractor. Identify any request for substitution as substitution on Contractor's letter of transmittal and give reasons for substitution. Department may in its sole discretion allow substitutions of materials.

## **11. PATENTS AND ROYALTIES**

- A. If Contractor uses any design, device or material covered by letters, patent or copyright, it is mutually agreed and understood, that, without exception, contract prices shall include all royalties or costs arising from use of such design, device or materials, in any way involved in the Work.
- B. Contractor shall indemnify and save harmless County from any and all claims for infringement by reason of use of such patent or copyright in connection with the Work agreed to be performed under this Contract, and shall indemnify County for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during prosecution of the Work or after completion of the Work.

## **12. SURVEYS, PERMITS, REGULATIONS AND TAXES**

- A. Department will furnish to Contractor all site, topography and property surveys necessary for execution of the Work.
- B. Contractor shall procure all permits, licenses and approvals necessary for execution of this Contract.
- C. Contractor shall give all notices and comply with all State of Wisconsin, Federal and local laws, codes, rules and regulations relating to performance of the Work, protection of adjacent property, and maintenance of passageways, guard fences or other protective facilities.
- D. Contractor shall pay all Sales, Consumer, Use and other similar taxes required by law.
- E. Contractor shall promptly notify Engineer of any variances of Drawings or Specifications with that of any State of Wisconsin, federal or local law, code, rule or regulation. Upon such notification, Engineer will require correction of variance to comply with applicable law, code, rule or regulation at no additional cost to Contractor.

- F. Work under this Contract shall comply with all applicable State of Wisconsin, Federal and local laws, codes and regulations.
- G. Contractor shall pay charges for water, sewer and other utility connections made by municipalities where required by Specifications.

### **13. CONTRACTOR'S OBLIGATIONS AND SUPERINTENDENCE**

- A. Contractor shall provide and pay for all materials, labor, tools, equipment, transportation and superintendence necessary to execute, complete and deliver the Work within specified time. Contractor agrees to secure at their own expense all personnel necessary to carry out the Work. Such personnel shall not be deemed County employees nor shall they have or be deemed to have any direct contractual relationship with County.
- B. Performance of any work necessary after regular working hours, on Sundays or Legal Holidays shall be without additional expense to County. Performance of any work at site at other than normal working hours must be coordinated with Public Works Project Engineer.
- C. Contractor shall furnish, erect, maintain and remove such temporary works as may be required.
- D. Contractor shall observe, comply with, and be subject to all terms, conditions, requirements and limitations of Construction Documents.
- E. At the Work site, Contractor shall give personal superintendence to the Work or shall employ construction superintendent or foreman, experienced in character of work covered by Contract, who shall have full authority to act for Contractor. Understand that such superintendent or foreman shall be acceptable to Engineer and Department.
- F. Remove from project or take other corrective action upon notice from Engineer or Department for Contractor's employees whose work is considered by Engineer or Department to be unsatisfactory, careless, incompetent, unskilled or otherwise objectionable.
- G. Contractor and subcontractors shall be required to conform to Labor Laws of State of Wisconsin and various acts amendatory and supplementary thereto and to other laws, ordinances and legal requirements applicable to the Work.
- H. Presence and observation of the Work by Engineer or Public Works Project Engineer shall not relieve Contractor of any obligations.

### **14. WEATHER CONDITIONS**

- A. In event of temporary suspension of work, or during inclement weather, or whenever Engineer shall direct, Contractor shall, and shall cause subcontractors to protect carefully all work and materials against damage or injury from weather. If, in opinion of Engineer or Department, any work or materials that have been damaged or injured due to failure on part of Contractor or any subcontractors so to protect the Work, such materials shall be removed and replaced at expense of Contractor.



## **15. PROTECTION OF WORK AND PROPERTY**

- A. Contractor shall at all times safely guard County's property from injury or loss in connection with this Contract. Contractor shall at all times safely guard and protect the Work, and adjacent property, from damage. Contractor shall replace or make good any such damage, loss or injury unless such be caused directly by errors contained in Contract, or by County, or County's duly authorized representative.
- B. Contractor may act diligently, without previous instructions from Engineer and / or Department, in emergency that threatens loss or injury of property, or safety of life. Contractor shall notify Engineer and / or Department immediately thereafter. Promptly submit any claim for compensation by Contractor due to such extra work to Engineer and / or Department for approval as provided for in Article 18 herein.

## **16. INSPECTION AND TESTING OF MATERIALS**

- A. Authorized representatives and agents of County government shall have access at all times to the Work wherever it is in preparation or progress and Contractor shall provide facilities for such access and for inspection.
- B. Should it be considered necessary or advisable at any time before final acceptance of the Work to make examination of work already completed, by removing or tearing out same, Contractor shall upon request, promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any aspect, due to fault of Contractor or subcontractors thereof, Contractor shall assume all expenses of such examination and of satisfactory reconstruction. Contractor will be reimbursed for such examination and replacement in accordance with Article 18 - A.3., of these General Conditions of Contract if such work is found to meet requirements of Contract.
- C. If Specifications, Engineer's, or Public Works Project Engineer's instructions require any work to be specially tested or approved, Contractor shall give Engineer and Public Works Project Engineer timely notice of its readiness for testing or inspection. Test all materials and equipment requiring testing in accordance with accepted or specified standards, as applicable. Engineer shall recommend laboratory or inspection agency and Department will select and pay for all initial laboratory inspection services. Should retesting be required, due to failure of initial testing, cost of such retesting shall be borne by Contractor.
- D. Cost of any testing performed by manufacturers or Contractor for substantiating acceptability of proposed substitution of materials and equipment, or necessary conformance testing in conjunction with manufacturing processes or factory assemblage, shall be borne by Contractor or manufacturer responsible.

## **17. REPORTS, RECORDS AND DATA**

- A. Contractor shall submit to Engineer and Public Works Project Engineer such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, invoices, records and other data as either may request concerning work performed or to be performed under this Contract.

## **18. CHANGES IN THE WORK**

- A. Make no changes, except in cases of emergency, in the Work covered by approved Construction Documents without having prior written approval of Department. Charges or credits for the Work covered by approved change shall be determined by one of these methods:
1. Unit bid prices previously approved.
  2. Agreed lump sum based on actual cost of:
    - a) Labor, including foremen, and all fringe benefits that are associated with their wages.
    - b) Materials entering permanently into the Work.
    - c) Ownership or rental cost of construction tools and equipment during time of use on extra work.
    - d) Power and consumable supplies for operation of power equipment.
    - e) Workmen's Compensation Insurance, Contractor's Public Liability and Property Damage Insurance, and Comprehensive Automobile Liability Insurance.
    - f) Social Security and old age and unemployment contributions.
    - g) Add to cost under (2), fixed fee to be agreed upon, but not to exceed fifteen percent (15%) of actual cost of work performed with their own labor force. Fee shall be compensation to cover cost of supervision, overhead, bond, profit and any other general expense.
    - h) On that portion of the Work under (2) done under subcontract, Contractor may include not over seven and one-half percent (7½%) for supervision, overhead, bond, profit and any other general expense.
    - i) Department may require correct amount of costs with supporting vouchers; Contractor shall keep and present in such form as directed.
  3. Cost-plus work, with not-to-exceed dollar limit, based on actual cost of:
    - a) Labor, including foremen, and all fringe benefits that are associated with their wages.
    - b) Materials entering permanently into the Work.
    - c) Ownership or rental cost of construction tools and equipment during time of use on extra work. Rental cost cannot exceed fifty percent (50%) replacement value of rented equipment.
    - d) Power and consumable supplies for operation of power equipment.
    - e) Workmen's Compensation Insurance, Contractor's Public Liability and Property Damage Insurance, and Comprehensive Automobile Liability Insurance.
    - f) Social Security and old age and unemployment contributions.
    - g) To cost under (3), there shall be added fixed fee to be agreed upon but not to exceed fifteen percent (15%) of actual cost of work performed with their own labor force. Fee shall be compensation to cover cost of supervision, overhead, bond, profit, and any other general expense.
    - h) On that portion of the Work under (3) done under subcontract, Contractor may include not over seven and one-half percent (7½%) for supervision, overhead, bond, profit, and any other general expense.
    - i) Contractor shall keep and present, in such form as directed, correct amount of cost together with such supporting vouchers as may be required by Department.
- B. If Contractor claims that by any instructions given by Engineer, Department, by drawings or otherwise, regarding performance of the Work or furnishing of material under Contract, involves extra cost, Contractor shall give Department written notice of cost thereof within two (2) weeks after receipt of such instructions and in any event before proceeding to execute work, unless delay in executing work would endanger life or property.
- C. No claim for extra work or cost shall be allowed unless it was done in pursuance of written Change Order from Engineer and approved by Department, as previously mentioned, and claim presented with payment request submitted after changed or extra work is completed.

- D. Negotiation of cost for change in the Work shall not be cause for Contractor to delay prosecution of the Work if Contractor has been authorized in writing by Public Works Project Engineer to proceed.

## **19. EXTRAS**

- A. Without invalidating Contract, Department may order extra work or make changes by altering, adding to or deducting from the Work, contract sum being adjusted in accordance with Article 18 herein.

## **20. TIME FOR COMPLETION**

- A. Contractor agrees that the Work shall be prosecuted regularly and diligently and complete the Work as stated in Construction Documents.

## **21. CORRECTION OF WORK**

- A. All work, all materials whether incorporated in the Work or not, and all processes of manufacture shall at all times and places be subject to inspection of Engineer and Public Works Project Engineer who shall be judge of quality and suitability of the Work, materials, and processes of manufacture for purposes for which they are used. Should they fail to meet Engineer's and Public Works Project Engineer's approval they shall be reconstructed, made good, replaced or corrected, by Contractor at Contractor's expense. Immediately remove all rejected material from site.
- B. If Contractor defaults or neglects to carry out the Work in accordance with Construction Documents or fails to perform any provision of Contract, Department may, after ten (10) days' written notice to Contractor and without prejudice to any other remedy County may have, make good such deficiencies. In such case, appropriate Change Order shall be issued deducting from Contractor's payments then or thereafter, cost of correcting such deficiencies, including cost of Engineer's additional services made necessary by such default, neglect or failure.

## **22. SUBSURFACE CONDITIONS FOUND DIFFERENT**

- A. If Contractor encounters subsurface or latent conditions at site materially differing from those shown on Drawings or indicated in Specifications, Contractor shall immediately give notice to Engineer and Public Works Project Engineer of such conditions before they are disturbed. Engineer will thereupon promptly investigate conditions, and if Engineer finds that they materially differ from those shown on Drawings or indicated in Specifications, Engineer will at once make such changes as necessary, any increase or decrease of cost resulting from such changes to be adjusted in manner provided in above Article 18 entitled "Changes in the Work".

## **23. RIGHT OF DEPARTMENT TO TERMINATE CONTRACT**

- A. In event that any provisions of this Contract are violated by Contractor or by any subcontractors, County may serve written notice upon Contractor and Surety of its intention to terminate Contract, such notice to contain reasons for such intention to terminate Contract, and unless within ten (10) days after serving of such notice upon Contractor, such violation or delay shall cease and satisfactory arrangement or correction be made, Contract shall, upon expiration of said ten (10) days, cease and terminate.
- B. In event of any such termination, County shall immediately serve notice thereof upon Surety and Contractor, and Surety shall have right to take over and perform Contract subject to County's approval; provided, however, that if Surety does not commence performance thereof within ten (10) days from date of mailing to such Surety of notice of termination, County may take over the Work and prosecute same to completion by contract, or by force account, at expense of Contractor; Contractor and Surety shall be liable to County for any excess cost occasioned County thereby, and in such event County may take possession of and utilize in completing the Work, such materials and equipment as may be on the Work site and therefore necessary.

#### **24. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES**

- A. Contractor shall be responsible for Construction Schedule and coordination. Immediately after execution and delivery of Contract and before making first payment, Contractor shall notify all subcontractors to furnish all required information to develop Construction Schedule. Contractor and all subcontractors associated with the Work shall furnish following information from each Division of Specifications:
  - 1. List of construction activities;
  - 2. Start, finish and time required for completion of each activity;
  - 3. Sequential relationships between activities;
  - 4. Identify all long lead-time items, key events, meetings or activities such as required submittals, fabrication and delivery, procurement of materials, installation and testing;
  - 5. Weekly definition of extent of work and areas of activity for each trade or Subcontract; and
  - 6. Other information as determined by Public Works Project Engineer.
- B. In addition to above requested items, Contractor shall request delivery dates for all County-furnished equipment, materials or labor. This shall include any work handled by Department under separate contracts such as asbestos abatement, air and water balancing, etc. Indicate on Construction Schedule these associated delivery and installation dates.
- C. Progress Reporting:
  - 1. Contractor shall update and publish Construction Schedule on monthly basis. Revisions to Schedule shall be by Contractor and made in same detail as original Schedule and accompanied by explanation of reasons for revision; and shall be subject to approval by Department.
  - 2. Failure of Contractor to keep Schedule in updated format shall result in County hiring firm specializing in construction schedule development and deducting those costs associated with updating process from payments due Contractor.
  - 3. Contractor shall submit show actual percentage of each activity completed, estimated future progress, and anticipated completion time.
- D. Responsibility for timely completion requires:
  - 1. Contractor and subcontractors understand that performance of each is interdependent upon performance of others.

2. Whenever it becomes apparent from current schedule, that phasing or progress completion dates will not be met, Contractor must take some or all following actions at no additional cost to County:
    - a) Increase construction manpower in such quantities and crafts as will eliminate backlog of work.
    - b) Increase number of working hours per shift, shifts per working day, working days per week, amount of construction equipment, or any combination of foregoing to eliminate backlog of work.
    - c) Reschedule work (yet remain in conformance with Drawings and Specifications).
  3. Prior to proceeding with any of above actions, Contractor shall notify Public Works Project Engineer.
- E. Maintain current Construction Schedule at all times. Revise Construction Schedule in same detail as original and accompany with explanation of reasons for revision. Schedule shall be subject to approval by Engineer and Public Works Project Engineer.

## **25. PAYMENTS TO CONTRACTOR**

- A. Contractor shall provide:
1. Detailed estimate giving complete breakdown of contract price by Specification Division; and
  2. Periodic itemized estimates of work done for purpose of making partial payments thereon.
- Submit these estimates for approval first to Engineer, then to Public Works Project Engineer. Costs employed in making up any of these schedules are for determining basis of partial payments and not considered as fixing basis for additions to or deductions from Contract price.
- B. County will make partial payments to Contractor for value, proportionate to amount of Contract, of all labor and material incorporated in the Work during preceding calendar month upon receipt of Application and Certificate for Payment form from Engineer and approval of Department.
- C. Contractor shall submit for approval first to Engineer, and then to Public Works Project Engineer all Application and Certificate for Payment forms. If requested, Application and Certificate for Payment shall be supported by such additional evidence as may be required, showing Contractor's right to payment claimed.
- D. Application and Certificate for Payment for preparatory work and materials delivered and suitably stored at site to be incorporated into the Work at some future period, will be given due consideration. Requesting payment for materials stored off site, may be rejected, however, if deemed essential for reasons of job progress, protection, or other sufficient cause, requests will be considered, conditional upon submission by Contractor of bills of sale, photographs and such other procedures as will adequately protect County's interest such as storage in bonded warehouse with adequate coverage. If there is any error in payment, Contractor is obligated to notify Department immediately, but no longer than ten (10) days from receipt of payment.
- E. Payments by County will be due within forty-five (45) days after receipt by Department of Application and Certificate for Payment.
- F. County will retain five percent (5%) of each Application and Certificate for Payment until final completion and acceptance of all the Work covered by Contract. However, anytime

after fifty percent (50%) of the Work has been furnished and installed at site, County will make remaining payments in full if Engineer and Public Works Project Engineer find that progress of the Work corresponds with Construction Schedule. If Engineer and Public Works Project Engineer find that progress of the Work does not correspond with Construction Schedule, County may retain up to ten percent (10%) of each Application and Certificate for Payment for the Work completed.

- G. All material and work covered by partial payments made shall become sole property of County, but this provision shall not be construed as relieving Contractor from sole responsibility for care and protection of materials and work upon which payments have been made, or restoration of any damaged work, or as waiver of right of County to require fulfillment of all of terms of Contract.
- H. County will make final payment within sixty (60) days after final completion of the Work, and will constitute acceptance thereof.
- I. County may make payment in full, including retained percentages and less authorized deductions, upon completion and acceptance of each Division where price is stated separately in Contract.
- J. Every contractor engaged in performance of any contract for Department of Public Works, Highway & Transportation shall submit to this Department, as requested and with final application for payment for work under said contract, affidavit(s) as required to prove that all debts and claims against this Work are paid in full or otherwise satisfied, and give final evidence of release of all liens against the Work and County. If Wisconsin Prevailing Wage Rate Determination is required for this Work, use "Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination" and "Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination" (if applicable). If Wisconsin Prevailing Wage Rate Determination is not required for this Work, use "Dane County, Wisconsin Contractor Wage Affidavit". Forms of such affidavits are included in Supplementary Conditions.

## **26. WITHHOLDING OF PAYMENTS**

- A. County, after having served written notice on said Contractor, may either pay directly any unpaid bills of which Department has written notice, or withhold from Contractor's unpaid compensation sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged; whereupon, payment to Contractor shall be resumed in accordance with terms of this Contract, but in no event shall these provisions be construed to impose any obligations upon County to either Contractor or Contractor's Surety.
- B. In paying any unpaid bills of Contractor, County shall be deemed agent of Contractor, and any payment so made by County, shall be considered as payment made under Contract by County to Contractor and County shall not be liable to Contractor for any such payment made in good faith.
- C. Contractor shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives from all claims growing out of lawful demands of subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in performance of this Contract.

- D. At Department's request, Contractor shall furnish satisfactory evidence that all obligations of nature designated above have been paid, discharged or waived.

## **27. ACCEPTANCE OF FINAL PAYMENT AS RELEASE**

- A. Making of final payment shall constitute waiver of all claims by County except those arising from:
1. Unsettled lien;
  2. Faulty or defective work appearing after substantial completion;
  3. Failure of the Work to comply with requirements of Construction Documents; or
  4. Terms of any special guarantees required by Construction Documents.
- B. Acceptance of final payment shall constitute waiver of all claims by Contractor.

## **28. PAYMENTS BY CONTRACTOR**

- A. Contractor shall pay following not later than fifth (5<sup>th</sup>) day following each payment received from County:
1. All transportation and utility services rendered;
  2. All materials, tools, and other expendable equipment that have been delivered at site of the Work to extent of ninety percent (90%) of cost thereof, and balance of cost thereof when said balance is paid to Contractor; and
  3. Each subcontractor, respective amount allowed Contractor because of work performed by subcontractor to extent of subcontractor's interest therein.

## **29. CONTRACT SECURITY**

- A. Contractor shall furnish Performance and Payment Bonds in amount at least equal to one hundred percent (100%) of Contract price as security for faithful performance of this Contract and payment of all persons performing labor on project under this Contract and furnishing materials in connection with this Contract.
- B. Sample Performance and Payment Bonds that Contractor will be required to execute is bound into these Construction Documents. Before construction Contract is consummated, completed Performance and Payment Bonds must be approved by Department.

## **30. ASSIGNMENTS**

- A. Contractor shall not assign whole or any part of this Contract or any moneys due or to become due hereunder without written consent of Department. In case Contractor assigns all or any part of any moneys due or to become due under this Contract, instrument of assignment shall contain clause substantially to effect that it is agreed that right of assignee in and to any moneys due or to become due to Contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for performance of the Work called for in this Contract.

## **31. MUTUAL RESPONSIBILITY OF CONTRACTORS**

- A. If, through acts of neglect on part of Contractor or any subcontractor shall suffer loss or damage on the Work, Contractor agrees to settle with such subcontractor by agreement or arbitration if such other subcontractor will so settle. If such subcontractor shall assert any

claim against County on account of any damage alleged to have been sustained, Department shall notify Contractor, who shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives against any such claim.

### **32. SEPARATE CONTRACTS**

- A. Department may award other contracts for the Work and all Contractors shall fully cooperate with each other and carefully adjust their work to that provided under other contracts as may be directed by Department. No Contractor shall commit or permit any act that will interfere with performance of the Work by any other Contractor.
- B. Contractor shall coordinate the Work with those of other Contractors. Cooperation will be required in arrangement for storage of materials and in detailed execution of the Work. Contractor, including subcontractors, shall keep informed of progress and detail work of others and shall notify Engineer or Department immediately of lack of progress or defective workmanship on part of others. Failure of Contractor to keep informed of the Work progressing on site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by Contractor of status of the Work as being satisfactory for proper coordination with Contractor's own work.

### **33. SUBCONTRACTS**

- A. Contractor may use services of specialty subcontractors on those parts of the Work that, under normal contracting practices, are performed by specialty subcontractors.
- B. Contractor shall not award any work to any subcontractor without prior approval of Department. Qualifications of subcontractors shall be same as qualifications of Contractor. Request for subcontractor approval shall be submitted to Department fifteen (15) days before start of subcontractor's work. If subcontractors are changed or added, Contractor shall notify Department in writing.
- C. Contractor shall be as fully responsible to County for acts and omissions of subcontractors, and of persons either directly or indirectly employed by them, as Contractor is for acts and omissions of persons directly employed by Contractor.
- D. Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind subcontractors to Contractor by terms of General Conditions of Contract and other Construction Documents insofar as applicable to work of subcontractors and to give Contractor same power as regards terminating any subcontract that Department may exercise over Contractor under any provision of Construction Documents.
- E. Nothing contained in this Contract shall create any contractual relation between any subcontractor and County.
- F. Contractor shall insert in all subcontracts, Articles 26, 33, 43 and 45, respectively entitled: "Withholding of Payments", "Subcontracts", "Affirmative Action Provision and Minority / Women / Disadvantaged Business Enterprises", and "Minimum Wages", and shall further require all subcontractors to incorporate physically these same Articles in all subcontracts.

### **34. PUBLIC WORKS PROJECT ENGINEER'S AUTHORITY**



- A. Public Works Project Engineer shall:
  - 1. Review the Engineer's observations of construction and judgment on compliance with Construction Documents;
  - 2. Provide responsible on-site observations of construction and have authority to request work and to stop work whenever necessary to insure proper enforcement of Construction Documents, and;
  - 3. Check and inspect material, equipment and installation procedures of all trades for proper workmanship and for compliance with Drawings, Specifications and Shop Drawings, permit no material on project site that is not satisfactory and reject work not in compliance with Construction Documents.

### **35. ENGINEER'S AUTHORITY**

- A. Engineer is retained by, and is responsible to Department acting for County.
- B. Engineer shall determine amount, quality, acceptability, and fitness of several kinds of work and materials that are provided under this Contract and shall decide all questions that may arise in relation to said work and construction thereof.
- C. Engineer shall decide meaning and intent of any portion of Specifications and of any Drawings where they may be found obscure or be in dispute.
- D. Engineer shall provide responsible observation of construction. Engineer has authority to stop the Work whenever such stoppage may be necessary to insure proper execution of Construction Documents.
- E. Engineer shall be interpreter of conditions of Construction Documents and judge of its performance.
- F. Within reasonable time, Engineer shall make decisions on all matters relating to progress of the Work or interpretation of Construction Documents.
- G. Convene and chair project meetings and foreman's coordination meetings when necessary to coordinate resolution of conflicts between Public Works Project Engineer, Contractors, and necessary County staff.
- H. Engineer's decisions are subject to review by Public Works Project Engineer.

### **36. ESTIMATES OF QUANTITIES**

- A. Whenever estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of Construction Documents, they are given for use in comparing bids and right is especially reserved to increase or diminish them as they may be deemed reasonably necessary or desirable by Department to complete the Work included in this Contract, and cost for such increase or diminution shall be adjusted in manner provided for in General Conditions of Contract Article 18 entitled "Changes in the Work".

### **37. LANDS AND RIGHTS-OF-WAY**

- A. Prior to start of construction, County shall furnish all land and rights-of-way necessary for carrying out and completion of the Work to be performed under this Contract.

### **38. GENERAL GUARANTEE**

- A. Neither final certificate of payment nor any provision in Construction Documents nor partial or entire occupancy of premises by County shall constitute acceptance of work not done in accordance with Construction Documents or relieve Contractor of liability in respect to any expressed warranties or responsibility for faulty materials or workmanship.
  - 1. In no event shall making of any payment required by Contract constitute or be construed as waiver by County of any breach of covenants of Contract or waiver of any default of Contractor and making of any such payment by County while any such default or breach shall exist shall in no way impair or prejudice right of County with respect to recovery of damages or other remedy as result of such breach or default.
- B. Contractor shall remedy and make good all defective workmanship and materials and pay for any damage to other work resulting there from, which appear within period of one (1) year from date of substantial completion, providing such defects are not clearly due to abuse or misuse by County. Department will give notice of observed defects with reasonable promptness.
- C. Guarantee on work executed after certified date of substantial completion will begin on date when such work is inspected and approved by Engineer and Public Works Project Engineer.
- D. Where guarantees or warranties are required in sections of Specifications for periods in excess of one (1) year, such longer terms shall apply; however, Contractor's Performance and Payment Bonds shall not apply to any guarantee or warranty period in excess of one (1) year.

### **39. CONFLICTING CONDITIONS**

- A. Any provision in any of Construction Documents which may be in conflict or inconsistent with any Articles in these General Conditions of Contract or Supplementary Conditions shall be void to extent of such conflict or inconsistency.
- B. In case of ambiguity or conflict between Drawings and Specifications, Specifications shall govern.
- C. Printed dimensions shall be followed in preference to measurements by scale. Large-scale drawings take precedence over small-scale drawings. Dimensions on Drawings and details are subject to field measurements of adjacent work.

### **40. NOTICE AND SERVICE THEREOF**

- A. Any notice to Contractor from Department relative to any part of this Contract shall be in writing and considered delivered and service thereof completed, when said notice is posted, by certified or registered mail, to Contractor at Contractor's last given address, or delivered in person to said Contractor, or Contractor's authorized representative on the Work.

### **41. PROTECTION OF LIVES AND HEALTH**

- A. In order to protect lives and health of Contractor's employees under Contract, Contractor shall comply with all pertinent provisions of Wisconsin Administrative Code, Rules of Department of Commerce, relating to Safety and Health.
- B. Contractor alone shall be responsible for safety, efficiency and adequacy of Contractor's tools, equipment and methods, and for any damage that may result from their failure or their improper construction, maintenance or operation.

**42. AFFIRMATIVE ACTION PROVISION AND MINORITY / WOMEN / DISADVANTAGED BUSINESS ENTERPRISES**

- A. Affirmative Action Provisions.
  - 1. During term of their Contract, Contractor agrees not to discriminate on basis of race, religion, color, sex, handicap, age, sexual preference, marital status, physical appearance, or national origin against any person, whether recipient of services (actual or potential), employee, or applicant for employment. Such equal opportunity shall include but not be limited to following: employment, upgrading, demotion, transfer, recruitment, advertising, layoff, termination, training, rates of pay, and any other form of compensation or level of service(s). Contractor agrees to post in conspicuous places, these affirmative action standards so as to be visible to all employees, service recipients and applicants for this paragraph. Listing of prohibited bases for discrimination shall not be construed to amend in any fashion state or federal law setting forth additional bases and exceptions shall be permitted only to extent allowable in state or federal law.
  - 2. Contractor is subject to this Article only if Contractor has ten (10) or more employees and receives \$10,000.00 or more in annual aggregate contracts with County. Contractor shall file and Affirmative Action Plan with Dane County Contract Compliance Officer in accord with Chapter 19 of Dane County Code of Ordinances. Such plan must be filed within fifteen (15) days of effective date of this Contract and failure to do so by said date shall constitute ground for immediate termination of Contract by County. Contractor shall also, during term of this Contract, provide copies of all announcements of employment opportunities to County's Contract Compliance Office, and shall report annually number of persons, by race, sex and handicap status, who apply for employment and, similarly classified, number hired and number rejected.
  - 3. Contact Dane County Contract Compliance Officer at Dane County Contract Compliance Office, 210 Martin Luther King, Jr. Blvd., Room 421, Madison, WI 53703, 608/266-4114.
  - 4. In all solicitations for employment placed on Contractor's behalf during term of this Contract, Contractor shall include statement to effect Contractor is "Equal Opportunity Employer". Contractor agrees to furnish all information and reports required by County's Contract Compliance Officer as same relate to affirmative action and nondiscrimination, which may include any books, records, or accounts deemed appropriate to determine compliance with Chapter 19, Dane County Code of Ordinances, and provision of this Contract.
- B. Minority / Women / Disadvantaged / Emerging Small Business Enterprises.
  - 1. Chapter 19.508 of Dane County Code of Ordinances is official policy of Dane County regarding utilization of, to fullest extent of, Minority Business Enterprises (MBEs), Women Business Enterprises (WBEs) Disadvantage Business Enterprises (DBEs) and Emerging Small Business Enterprises (ESBEs).
  - 2. Contractor may utilize MBEs / WBEs / DBEs / ESBEs as subcontractors or suppliers. List of subcontractors will be required of low bidder as stated in this Contract. List shall indicate which are MBEs / WBEs / DBEs / ESBEs and percentage of subcontract awarded, shown as percentage of total dollar amount of bid.

#### **43. COMPLIANCE WITH FAIR LABOR STANDARDS**

- A. During term of this Contract, Contractor shall report to County Contract Compliance Officer, within ten (10) days, any allegations to, or findings by National Labor Relations Board (NLRB) or Wisconsin Employment Relations Commission (WERC) that Contractor has violated statute or regulation regarding labor standards or relations. If investigation by Contract Compliance Officer results in final determination that matter adversely affects Contractor's responsibilities under this Contract, and which recommends termination, suspension or cancellation of this Contract, County may take such action.
- B. Contractor may appeal any adverse finding by Contract Compliance Officer as set forth in Dane County Ordinance 25.015(11)(c) through (e).
- C. Contractor shall post this statement in prominent place visible to employees: "As condition of receiving and maintaining contract with Dane County, this employer shall comply with federal, state and all other applicable laws prohibiting retaliation or union organizing."

#### **44. DOMESTIC PARTNERSHIP BENEFITS**

- A. Contractor agrees to provide same economic benefits to all of its employees with domestic partners as it does to employees with spouses, or cash equivalent if such benefit cannot reasonably be provided. Contractor agrees to make available for County inspection Contractor's payroll records relating to employees providing services on or under this Contract or subcontract. If any payroll records of Contractor contain any false, misleading or fraudulent information, or if Contractor fails to comply with provisions of Chapter 25.016, Dane County Ordinances, contract compliance officer may withhold payments on Contract; terminate, cancel or suspend Contract in whole or in part; or, after due process hearing, deny Contractor right to participate in bidding on future County contracts for period of one year after first violation is found and for period of three years after second or subsequent violation is found.

#### **45. USE AND OCCUPANCY PRIOR TO ACCEPTANCE**

- A. Contractor agrees to use and occupancy of portion or unit of the Work before formal acceptance by Department, provided Department:
  - 1. Secures written consent of Contractor; except when in opinion of Public Works Project Engineer, Contractor is chargeable with unwarranted delay in final cleanup of punch list items or other Contract requirements.
  - 2. Secures endorsement from insurance carrier and consent of Surety permitting occupancy of building or use of the Work during remaining period of construction, or, secures consent of Surety.
  - 3. Assumes all costs and maintenance of heat, electricity and water.
  - 4. Accepts all work completed within that portion or unit of the Work to be occupied, at time of occupancy.

#### **46. MINIMUM WAGES**

- A. Contractor shall post, at appropriate conspicuous point on site of project, schedule showing all determined minimum wage rates for various classes of laborers and mechanics to be

engaged in the Work under this Contract and all deductions, if any, required by law to be made from unpaid wages actually earned by laborers and mechanics so engaged.

- B. Supplementary Conditions section in Construction Documents lists wage determinations required by State Law.
- C. If, after award of Contract, it becomes necessary to employ any person in trade or occupation not classified in wage determinations, such person shall be paid at not less than such rate as shall be determined by Wisconsin Department of Workforce Development. Such approved minimum rate shall be retroactive to time of initial employment of such person in such trade or occupation. Contractor shall notify Department of Contractor's intention to employ persons in trades or occupations not so classified in sufficient time for Department to obtain approved rates for such trades or occupations.
- D. Specified wage rates are minimum rates only, and Department will not consider any claims for additional compensation made by Contractor because of payment by Contractor of any wage rate in excess of applicable rate contained in this Contract. Contractor shall adjust any disputes in regard to payment of wages in excess of those specified in this Contract.
- E. Submit required affidavit(s) to Department of Public Works, Highway & Transportation, as requested and with final application for payment for work under said contract. Affidavit(s) shall clearly indicate name, trade or occupation, and paid wages of every laborer, workman or mechanic employed by Contractor and all subcontractors during billing period including accurate record of number of hours worked by each employee and actual wages paid as stipulated in Wisconsin Statute 66.0903. If Wisconsin Prevailing Wage Rate Determination is required for this Work, use "Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination" and "Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination" (if applicable). If Wisconsin Prevailing Wage Rate Determination is not required for this Work, use "Dane County, Wisconsin Contractor Wage Affidavit". Forms of such affidavits are included in Supplementary Conditions.

#### **47. CLAIMS**

- A. No claim may be made until Department's Associate Public Works Director has reviewed Engineer's decision as provided for in Article 35 of General Conditions of Contract. If any claim remains unresolved after such review by Department's Associate Public Works Director, claim may be filed under Wisconsin Statute 893.80. Work shall progress during period of any dispute or claim. Unless specifically agreed between parties, venue will be in Dane County, Wisconsin.

#### **48. ANTITRUST AGREEMENT**

- A. Contractor and County recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by County. Therefore, Contractor hereby assigns to County any and all claims for such overcharges as to goods and materials purchased in connection with this Contract, except as to overcharges which result from antitrust violations commencing after price is established under this Contract and any change order thereto.

#### **49. INSURANCE**

- A. Contractor Carried Insurance:

1. Contractor shall not commence work under this Contract until Contractor has obtained all insurance required under this Article and has provided evidence of such insurance to Risk Manager, 425 City-County Building, 210 Martin Luther King Jr. Blvd., Madison, WI 53703. Contractor shall not allow any subcontractor to commence work until insurance required of subcontractor has been so obtained and approved. Company providing insurance must be licensed to do business in Wisconsin.
2. Worker's Compensation Insurance:
  - a) Contractor shall procure and shall maintain during life of this Contract, Worker's Compensation Insurance as required by statute for all of Contractor's employees engaged in work at site of project under this Contract and, in case of any such work sublet, Contractor shall require subcontractor similarly to provide Worker's Compensation Insurance for all of latter's employees to be engaged in such work unless such employees are covered by protection afforded by Contractor's Worker's Compensation Insurance.
  - b) If any claim of employees engaged in hazardous work on project under this Contract is not protected under Worker's Compensation Statute, Contractor shall provide and shall cause each subcontractor to provide adequate Employer's Liability Insurance for protection of such of Contractor's employees as are not otherwise protected.
3. Contractor's Public Liability and Property Damage Insurance:
  - a) Contractor shall procure and maintain during life of this Contract, Contractor's Public Liability Insurance and Contractor's Property Damage Insurance in amount not less than \$1,000,000 bodily injury, including accidental death, to any one person, and subject to same limit for each person, in amount not less than \$1,000,000 on account of one accident, and Contractor's Property Damage Insurance in amount not less than \$1,000,000 or combined single limit of at least \$1,000,000 with excess coverage over and above general liability in amount not less than \$5,000,000. Contractor shall add "Dane County" as additional insured for each project.
  - b) Contractor's Public Liability and Property Damage Insurance shall include Products, Completed Operation, and Contractual Liability under Insurance Contract. "Contractor shall in all instances save, defend, indemnify and hold harmless County and Engineer against all claims, demands, liabilities, damages or any other costs which may accrue in prosecution of the Work and that Contractor will save, defend, indemnify and hold harmless County and Engineer from all damages caused by or as result of Contractor's operations" and each shall be listed as additional insured on Contractor's and sub-contractors' insurance policies.
  - c) Obligations of Contractor under Article 48.A.2)b) shall not extend to liability of Engineer, agents or employees thereof, arising out of:
    - 1) Preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications; or
    - 2) giving of or failure to give directions or instructions by Engineer, agents or employees thereof provided such giving or failure to give is primary cause of injury or damage.
  - d) Contractor shall procure and shall maintain during life of this Contract, Comprehensive Automobile Liability Insurance covering owned, non-owned and hired automobiles for limits of not less than \$1,000,000 each accident single limit, bodily injury and property damage combined with excess coverage over and above general liability in amount not less than \$5,000,000.
  - e) Contractor shall either:
    - 1) Require each subcontractor to procure and to maintain during life of subcontract, subcontractor's Public Liability Property Damage Insurance, and Comprehensive Automobile Liability Insurance of type and in same amount specified in preceding paragraphs; or
    - 2) Insure activities of subcontractors in Contractor's own policy.

4. Scope of Insurance and Special Hazards: Insurance required under Article 48.A.2 hereof shall provide adequate protection for Contractor and subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operation be by insured or by anyone directly or indirectly employed by insured and also against any of special hazards which may be encountered in performance of this Contract as enumerated in Supplementary Conditions.
5. Proof of Carriage of Insurance: Contractor shall furnish Risk Manager with certificates showing type, amount, class of operations covered, effective dates, dates of expiration of policies and "Dane County" listed as additional insured. Such certificates shall also contain (substantially) following statement: "Insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days written notice has been received by Risk Manager."

**B. Builder's Risk:**

1. County shall provide Builder's Risk policy. Terms of this policy will be made available by County's Risk Manager, upon Contractor's request. By executing this Contract, Contractor warrants it is familiar with terms of said policy.

**C. Indemnification / Hold Harmless:**

1. Contractor shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from performance of the Work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom, and is caused in whole or in part by any act or omission of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by part indemnified hereunder.
2. In any and all claims against Dane County, its boards, commissions, agencies, officers, employees and representatives or by any employee of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, indemnification obligation under this Contract shall not be limited in any way by any limitation on amount or type of damages, compensation or benefits payable by or for Contractor or any subcontractor under worker's compensation acts, disability benefits or other employee benefit acts.
3. Obligations of Contractor under this Contract shall not extend to liability of Engineer, its agents or employees arising out of:
  - a) Preparation or approval of maps, drawings, opinion, reports, surveys, change orders, designs or specifications; or
  - b) Giving of or failure to give directions or instruction by Engineer, its agents or employees provided such giving or failure to give is primary cause of injury or damage.
4. Dane County shall not be liable to Contractor for damages or delays resulting from work by third parties or by injunctions or other restraining orders obtained by third parties.


**50. WISCONSIN LAW CONTROLLING**

- A. It is expressly understood and agreed to by parties hereto that in event of any disagreement or controversy between parties, Wisconsin law shall be controlling.

## SUPPLEMENTARY CONDITIONS

### 1. APPLICATION & CERTIFICATE FOR PAYMENT

- A. Every contractor engaged in performance of any contract for Department of Public Works, Highway & Transportation shall submit partial and final Application & Certificate for Payment for work under said contract. Form shall provide similar information as shown on AIA G702™ and G703™ forms (samples shown below). Forms shall be submitted to [project Architect / Engineer, Public Works Project Engineer] for approval.


**AIA Document G702™ – 1992**

**Application and Certificate for Payment**

<b>TO OWNER:</b>	<b>PROJECT:</b>	<b>APPLICATION NO:</b>	<b>Distribution to:</b>
		<b>PERIOD TO:</b>	OWNER <input type="checkbox"/>
		<b>CONTRACT FOR:</b>	ARCHITECT <input type="checkbox"/>
<b>FROM CONTRACTOR:</b>	<b>VIA ARCHITECT:</b>	<b>CONTRACT DATE:</b>	CONTRACTOR <input type="checkbox"/>
		<b>PROJECT NOS:</b>	FIELD <input type="checkbox"/>
			OTHER <input type="checkbox"/>

**CONTRACTOR'S APPLICATION FOR PAYMENT**  
Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM \$ \_\_\_\_\_

2. Net change by Change Orders \$ \_\_\_\_\_

3. CONTRACT SUM TO DATE (Line 1 + 2) \$ \_\_\_\_\_

4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) \$ \_\_\_\_\_

5. RETAINAGE:

a. % of Completed Work (Column D + E on G703) \$ \_\_\_\_\_

b. % of Stored Material (Column F on G703) \$ \_\_\_\_\_

Total Retainage (Lines 5a + 5b or Total in Column I of G703) \$ \_\_\_\_\_

6. TOTAL EARNED LESS RETAINAGE \$ \_\_\_\_\_  
(Line 4 less Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$ \_\_\_\_\_  
(Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE \$ \_\_\_\_\_  
(Line 7 less Line 6)

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:  
 By: \_\_\_\_\_ Date: \_\_\_\_\_  
 State of \_\_\_\_\_  
 County of \_\_\_\_\_  
 Subscribed and sworn to before me this \_\_\_\_\_ day of \_\_\_\_\_

Notary Public:  
 My Commission expires: \_\_\_\_\_

**ARCHITECT'S CERTIFICATE FOR PAYMENT**  
In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED \$ \_\_\_\_\_  
(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:  
 By: \_\_\_\_\_ Date: \_\_\_\_\_

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$	\$
Total approved this Month	\$	\$
<b>TOTALS</b>	<b>\$</b>	<b>\$</b>
<b>NET CHANGES by Change Order</b>	<b>\$</b>	<b>\$</b>

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**AIA** Document G703™ – 1992

**Continuation Sheet**

AIA Document G703. APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.  
 In tabulations below, amounts are stated in the nearest dollar.  
 Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:  
 APPLICATION DATE:  
 PERIOD TO:  
 ARCHITECT'S PROJECT NO.:

A LINE NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (NET) (GROSS) (DATE)	G TOTAL COMPLETED AND STORED TO DATE (D+E+F)	H % (G ÷ C)	I BALANCE TO FINISH (C - G)	J RETAINAGE (@ VARIABLE RATE)
			E FROM PREVIOUS APPLICATION (D + E)	F THIS PERIOD					

**CAUTION:** You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.  
 AIA Document G703™ – 1992. Copyright © 1993, 1995, 1997, 1970, 1976, 1982 and 1992 by The American Institute of Architects. All rights reserved. (AIA/INHS). This AIA® Document is protected by U.S. Copyright Law and International Treaties. Unauthorized reproduction or distribution of this AIA® Document, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law. Purchasers are permitted to reproduce for their own use copies of this document when completed. To report copyright violations of AIA Contract Documents, e-mail The American Institute of Architects legal counsel, copyright@aia.org.

**2. DAVIS-BACON WAGE RATE DETERMINATION**

- A. These supplements shall modify, delete, and / or add to General Conditions of Contract. Where any article, paragraph, or subparagraph in General Conditions of Contract is supplemented by one of these paragraphs, provisions of such article, paragraph, or subparagraph shall remain in effect and supplementary provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in General Conditions of Contract is amended, voided, or superseded by any of these paragraphs, provisions of such article, paragraph, or subparagraph not so amended, voided, or superseded shall remain in effect.
  - 1. General Conditions of Contract Article 45, “Minimum Wages”, paragraph B. Following Davis-Bacon Wage Rate Determination is added to General Conditions of Contract.
- B. These Davis-Bacon forms, hereinafter set forth in this section, shall be filled out and submitted to Department of Public Works, Highway & Transportation:
  - 1. Certified Payroll Request (Form WH – 347),  
<http://webapps.dol.gov/libraryforms/go-us-dol-form.asp?FormNumber=38>
  - 2. Statement of Compliance

**3. PREVAILING WAGE RATE DETERMINATION**

- A. These supplements shall modify, delete, and / or add to General Conditions of Contract. Where any article, paragraph, or subparagraph in General Conditions of Contract is supplemented by one of these paragraphs, provisions of such article, paragraph, or

subparagraph shall remain in effect and supplementary provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in General Conditions of Contract is amended, voided, or superseded by any of these paragraphs, provisions of such article, paragraph, or subparagraph not so amended, voided, or superseded shall remain in effect.

1. General Conditions of Contract Article 45, "Minimum Wages", paragraph B. Following Prevailing Wage Rate Determination No. 201003877 is added to General Conditions of Contract.
- B. These State of Wisconsin forms, hereinafter set forth in this section, shall be filled out and submitted to Department of Public Works, Highway & Transportation:
1. Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination (ERD-5724)
  2. Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination (ERD-10584)
  3. Disclosure of Ownership (ERD-7777)
  4. Request To Employ Subjourneyperson (ERD-10880)

# Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination

**NOTICE REQUIRED UNDER Section 15.04(1)(m), Wisconsin Statutes.** Authorization for this form is provided under Sections, 66.0903(9)(b) and 103.49(4r)(9b) Wisconsin Statutes. The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes. Personally identifiable information may be used for secondary purposes.

This form must **ONLY** be filed with the **Awarding Agency** indicated below.

State Of            )    )SS  County Of            )	Project Name		
	Project Number		Determination Number
	Date Determination Issued		Date of Contract
	Awarding Agency		
	Date Work Completed		

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below and have recently completed all of the work required under the terms and conditions of a contract with the above-named awarding agency and make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(c) or 103.49(4r)(c), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding agency.
- **I have** fully complied with all of the wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding agency indicated above.

Name of Corporation, Partnership, Sole Proprietorship or Business				
Street Address or P O Box	City	State	Zip Code	Telephone Number (    )    -
Print Name of Authorized Officer			Date Signed	
Signature of Authorized Officer				

**List of Agents and Subcontractors**

Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( ) -			Telephone Number ( ) -		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( ) -			Telephone Number ( ) -		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( ) -			Telephone Number ( ) -		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( ) -			Telephone Number ( ) -		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( ) -			Telephone Number ( ) -		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( ) -			Telephone Number ( ) -		

**If you have any questions call (608) 266-0028**

#### **4. BUY AMERICAN PROVISIONS**

- A. The Buy American provision in the American Recovery and Reinvestment Act of 2009 (section 1605 of Title XVI), provides that, unless one of three listed exceptions applies (nonavailability, unreasonable cost, and inconsistent with the public interest), and a waiver is granted, none of the funds appropriated or otherwise made available by the Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all the iron, steel, and manufactured goods used are produced in the United States.
- B. To certify that a manufactured good meets the Buy American Act Requirements, fill out and submit the following Buy American Affidavit to Department of Public Works, Highway & Transportation. The Buy American Standards are further outlined in the ARRA Reporting Requirements section in Attachment A-2.

**SAMPLE**

GENERAL DECISION: WI20100005 09/03/2010 WI5

Date: September 3, 2010

General Decision Number: WI20100005 09/03/2010

Superseded General Decision Number: WI20080005

State: Wisconsin

Construction Type: Building

County: Dane County in Wisconsin.

BUILDING CONSTRUCTION PROJECTS (does not include residential construction consisting of single family homes and apartments up to and including 4 stories)

Modification Number	Publication Date
0	03/12/2010
1	04/02/2010
2	06/04/2010
3	07/02/2010
4	08/06/2010
5	08/13/2010
6	09/03/2010

ASBE0205-001 06/01/2001

	Rates	Fringes
Asbestos Removal worker/hazardous material handler Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not.....	\$ 17.90	4.45

BOIL0107-001 07/01/2009

	Rates	Fringes
BOILERMAKER Boilermaker.....	\$ 33.64	19.27
Small Boiler Repair (under 25,000 lbs/hr).....	\$ 26.91	16.00

BRWI0013-001 06/01/2009

	Rates	Fringes
BRICKLAYER Bricklayer.....	\$ 31.46	15.15
Terrazzo Finisher.....	\$ 25.73	13.45
Terrazzo Worker.....	\$ 32.16	13.45
Tile Finisher.....	\$ 22.93	13.45
Tile Layer.....	\$ 28.66	13.45

-----  
 CARP0252-007 06/01/2010

	Rates	Fringes
CARPENTER (Including Acoustical work and Drywall hanging; Excluding Batt Insulation)		
CARPENTER & SOFT FLOOR LAYER.....		
	\$ 30.56	13.36
MILLWRIGHT.....		
	\$ 32.16	13.36
PILEDRIVERMAN.....		
	\$ 31.06	13.36

-----  
 ELEC0014-005 06/04/2007

	Rates	Fringes
Teledata System Installer		
Installer/Technician.....	\$ 20.69	17%+6.65

Low voltage construction, installation, maintenance and removal of teledata facilities (voice, data, and video) including outside plant, telephone and data inside wire, interconnect, terminal equipment, central offices, PABX, fiber optic cable and equipment, micro waves, V-SAT, bypass, CATV, WAN (wide area networks), LAN (local area networks), and ISDN (integrated systems digital network).

-----  
 ELEC0159-002 06/01/2009

	Rates	Fringes
ELECTRICIAN.....	\$ 31.61	28%+8.95

-----  
 ELEV0132-001 01/01/2009

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 41.31	18.285

FOOTNOTE:

PAID VACATION: Employer contributes 8% of basic hourly rate as vacation pay for employees with more than 5 years or more of service, and 6% for less than 5 years of service.  
 PAID HOLIDAYS: New Years Day, Memorial Day, Independence Day, Labor Day, Veterans Day, Thanksgiving Day, Friday after Thanksgiving, and Christmas Day.

-----  
 \* ENGI0139-002 06/01/2010

	Rates	Fringes
OPERATOR: Power Equipment		
Group 1.....	\$ 34.62	17.75
Group 2.....	\$ 33.62	17.75
Group 3.....	\$ 32.42	17.75
Group 4.....	\$ 31.89	17.75
Group 5.....	\$ 29.82	17.75
Group 6.....	\$ 29.19	17.75

HAZARDOUS WASTE PREMIUMS:

EPA Level "A" Protection: \$3.00 per hour  
EPA Level "B" Protection: \$2.00 per hour  
EPA Level "C" Protection: \$1.00 per hour

#### POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of over 100 tons; Cranes, Tower Cranes, and Derricks with boom, leads and/or jib lengths 176 ft or longer.

GROUP 2: Backhoes (Excavators) weighing 130,000 lbs & over; Cranes, Tower Cranes and Derricks with or without attachments with a lifting capacity of 100 tons or less; Cranes, Tower Cranes, and Derricks with boom, leads, and/or jib lengths 175 ft or less; Caisson Rigs; Pile Driver

GROUP 3: Backhoes (Excavators) weighing under 130,000 lbs; Travelling Crane (bridge type); Milling Machine; Concrete Paver over 27 E; Concrete Spreader and Distributor; Concrete Laser Screed; Concrete Grinder and Planing Machine; Slipform Curb and Gutter Machine; Boring Machine (Directional); Dredge Operator; Skid Rigs; Over 46 meter Concrete Pump.

GROUP 4: Hydraulic Backhoe (tractor or truck mounted); Hydraulic Crane, 10 tons or less; Tractor, Bulldozer, or End Loader (over 40 hp); Motor Patrol; Scraper Operator; Bituminous Plant and Paver Operator; Screed-Milling Machine; Roller over 5 tons; Concrete Pumps 46 meter & under; Grout Pumps; Rotec Type Machine; Hydro Blaster, 10,000 psi and over; Rotary Drill Operator; Percussion Drilling Machine; Air Track Drill with or without integral hammer; Blaster; Boring Machine (vertical or horizontal); Side Boom; Trencher, wheel type or chain type having 8 inch or larger bucket; Rail Leveling Machine (Railroad); Tie Placer; Tie Extractor; Tie Tamper; Stone Leveler; Straddle Carrier; Material Hoists; Stack Hoist; Man Hoists; Mechanic and Welder; Off Road Material Haulers

GROUP 5: Tractor, Bulldozer, or Endloader (under 40 hp); Tampers -Compactors, riding type; Stump Chipper, large; Roller, Rubber Tire; Backfiller; Trencher, chain type (bucket under 8 inch); Concrete Auto Breaker, large; Concrete Finishing Machine (road type); Concrete Batch Hopper; Concrete Conveyor Systems; Concrete Mixers, 14S or over; Pumps, Screw Type and Gypsum); Hydrohammers, small; Brooms and Sweepers; Lift Slab Machine; Roller under 5 tons; Industrial Locomotives; Fireman (Pile Drivers and Derricks); Pumps (well points); Hoists, automatic; A-Frames and Winch Trucks; Hoists (tuggers); Boats (Tug, Safety, Work Barges and Launches); Assistant Engineer

GROUP 6: Shouldering Machine Operator; Farm or Industrial Tractor mounted equipment; Post Hole Digger; Auger (vertical and horizontal); Skid Steer Loader with or without attachments; Robotic Tool Carrier with or without attachments; Power Pack Vibratory/Ultra Sound Driver and Extractor; Fireman (Asphalt Plants); Screed Operator; Stone Crushers and Screening Plants; Air, Electric, Hydraulic Jacks (Slip Form); Prestress Machines; Air Compressor, 400 CFM or over; Refrigeration Plant/Freeze Machine; Boiler Operators (temporary heat); Forklifts; Welding Machines;



Generators; Pumps over 3"; Compressors, under 400 CFM;  
 Heaters, Mechanical; Combination small equipment operator;  
 Winches, small electric; Oiler; Greaser; Rotary Drill  
 Tender; Conveyor; Elevator Operator

-----  
 IRON0383-002 06/01/2010

	Rates	Fringes
IRONWORKER.....	\$ 30.90	19.13

-----  
 LABO0464-001 06/01/2009

	Rates	Fringes
Laborer: Asbestos/hazardous material remover (Preparation, removal, and encapsulation of hazardous materials from non-mechanical systems).....	\$ 23.06	12.38
Laborers: (Excluding Blown Insulation; Including General Laborer, Carpenter Tender, Bottom Man, Brick Mason Tender, Cement Mason Tender, Formsetter, Pipelayer, Shoveler).....	\$ 22.59	11.73

-----  
 PAIN0802-001 06/01/2009

	Rates	Fringes
PAINTER Brush, Roller.....	\$ 25.65	13.10

PREMIUM RATES [Add to Basic Hourly Rate]  
 Swing Work \$0.25  
 Drywall Taper \$0.30  
 Paperhanger \$0.40  
 Steel, Spray \$1.00

-----  
 PAIN0941-001 06/01/2010

	Rates	Fringes
GLAZIER.....	\$ 36.28	11.17

-----  
 PLAS0599-001 06/01/2008

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER....	\$ 29.78	13.38
PLASTERER.....	\$ 25.28	12.91

-----  
 \* PLUM0075-007 07/01/2010

	Rates	Fringes
PLUMBER (Including HVAC work)....	\$ 35.78	14.76

-----  
 \* PLUM0601-007 07/12/2010

	Rates	Fringes
PIPEFITTER (Including HVAC work).....	\$ 38.05	15.49
-----		
SFWI0669-002 04/01/2010		

	Rates	Fringes
SPRINKLER FITTER.....	\$ 36.39	16.60
-----		
SHEE0018-009 06/01/2010		

	Rates	Fringes
Sheet Metal Worker (Including HVAC Duct work and Technicians).....	\$ 33.23	19.57
-----		
SUWI2002-011 01/23/2002		

	Rates	Fringes
Asbestos Worker/Heat and Frost Insulator.....	\$ 25.36	8.37
Laborers:		
Concrete Worker.....	\$ 16.34	3.59
Landscape.....	\$ 8.73	4.90
ROOFER, Including Built Up, Composition and Single Ply Roofs.....	\$ 18.01	3.28
Tile & Marble Finisher.....	\$ 13.89	7.58
-----		
TEAM0039-004 05/01/2009		

	Rates	Fringes
TRUCK DRIVER		
1 & 2 Axles.....	\$ 23.84	14.70
3 or more Axles.....	\$ 23.99	14.70
-----		

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.  
=====

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

-----  
In the listing above, the "SU" designation means that rates listed under the identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.  
-----

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====  
END OF GENERAL DECISION

Jim Doyle  
Governor  
Roberta Gassman  
Secretary  
Jennifer A. Ortiz  
Division Administrator



EQUAL RIGHTS DIVISION  
201 East Washington Avenue, Room A300  
P.O. Box 8928  
Madison, WI 53708  
Telephone: (608) 266-6860  
Fax: (608) 267-4592  
TTY: (608) 264-8752  
<http://www.dwd.state.wi.us/>

State of Wisconsin  
Department of Workforce Development

DEPARTMENTAL ORDER

JOHN SCHRAUFNAGEL, ASST. DIRECTOR  
DANE COUNTY DEPT PUBLIC WORKS  
1919 ALLIANT CENTER WAY  
MADISON, WI 53713

RE: SOLAR PHOTOVOLTAIC FACILITIES - MULTIPLE LOCATIONS  
CITY OF MADISON, DANE COUNTY, WISCONSIN  
Determination No. 201003877 Project No. 310034

The application which you filed or was filed on your behalf, by the person copied below, for a prevailing wage rate determination applicable to the above-referenced project has been received.

A survey was conducted to determine the prevailing wage rate for the trade(s) or occupation(s) needed to complete the project. The findings of the survey are set forth in the enclosed determination.

If you believe that the wage rate for any trade or occupation does not accurately reflect the prevailing wage rate in the city, village or town in which the project is located, you have the right to request the department to conduct an administrative review regarding such wage rate.

Your request must be made, in writing, within 30 days from the date indicated below and at least 10 days before the date a construction contract(s) is to be awarded or negotiated. Your request must also include wage rate information on at least three (3) similar projects located in the city, village or town where the proposed project is located on which some work was performed by the contested trade(s) or occupation(s) during the current survey period and which was previously considered by the department in issuing the enclosed determination. See s. DWD 290.10 of the Wisconsin Administrative Code and either s. 66.0903 (3)(br) or s. 103.49 (3)(c), Stats. for a complete explanation of the administrative review process.

Now, therefore, it is hereby ORDERED that the prevailing wage rates set forth in the enclosed determination shall only be applicable to the above referenced project. This ORDER shall be deemed a FINAL ORDER of this department unless a timely request for an administrative review is filed with the department or a construction contract(s) is not awarded or negotiated before the determination's expiration date.

DATED

11/08/2010

Enclosures

FOR THE DEPARTMENT

A handwritten signature in black ink, appearing to read 'Matthew Hammer', is written over a horizontal line.

Matthew Hammer, Investigator  
Labor Standards Bureau  
Construction Wage Standards Section  
(608) 266-7537

cc: TOM PETERSEN, PROJECT MANAGER  
HARWOOD ENGINEERING CONSULTANTS  
7420 W STATE ST  
MILWAUKEE, WI 53213

# PREVAILING WAGE RATE DETERMINATION

Issued by the State of Wisconsin  
Department of Workforce Development  
Pursuant to s. 66.0903, Stats.  
Issued On: 11/08/2010

**DETERMINATION NUMBER:** 201003877

**EXPIRATION DATE:** Prime Contracts MUST Be Awarded Or Negotiated On Or Before 5/06/2011. If NOT, You MUST Reapply.

**DESCRIPTION OF PROJECT:** SOLAR PHOTOVOLTAIC FACILITIES - MULTIPLE LOCATIONS  
PROJECT NO: 310034

**LOCATION OF PROJECT:** CITY OF MADISON, DANE COUNTY, WISCONSIN

**CONTRACTING AGENCY:** DANE COUNTY DEPT PUBLIC WORKS

**CLASSIFICATION:** Contractors are required to call the Department of Workforce Development if there are any questions regarding the proper trade or classification to be used for any worker on a public works project.

**OVERTIME:** Time and one-half must be paid for all hours worked over 10 hours per day and 40 hours per calendar week and for all hours worked on Saturday, Sunday and the following six (6) holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; the day before if January 1, July 4 or December 25 falls on a Saturday; the day following if January 1, July 4 or December 25 falls on a Sunday.

**FUTURE INCREASE:** If indicated for a specific trade or occupation, the full amount of such increase MUST be added to the "TOTAL" indicated for such trade or occupation on the date(s) such increase(s) becomes effective.

**PREMIUM PAY:** If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.

**SUBJOURNEY:** Wage rates may be available for some of the classifications indicated below with the exception of laborers, truck drivers and heavy equipment operators. Any employer that desires to use any subjourney classification on this project MUST request the applicable wage rate from this department PRIOR to the date such classification is used on this project. Form ERD-10880 is available for this purpose.

## BUILDING OR HEAVY CONSTRUCTION

Includes sheltered enclosures with walk-in access for the purpose of housing persons, employees, machinery, equipment or supplies and non-sheltered work such as canals, dams, dikes, reservoirs, storage tanks, etc. A sheltered enclosure need not be "habitable" in order to be considered a building. The installation of machinery and/or equipment, both above and below grade level, does not change a project's character as a building. On-site grading, utility work and landscaping are included within this definition. Residential buildings of four (4) stories or less, agricultural buildings, parking lots and driveways are NOT included within this definition.

Fringe Benefits Must Be Paid On All Hours Worked

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
Acoustic Ceiling Tile Installer	27.51	13.46	40.97
Boilermaker	32.14	17.87	50.01
Bricklayer, Blocklayer or Stonemason	31.46	15.45	46.91
Future Increase(s): Add \$1.95 05/31/2010			
Cabinet Installer	27.51	13.46	40.97
Carpenter	27.51	13.46	40.97
Carpet Layer or Soft Floor Coverer	27.51	13.46	40.97
Cement Finisher	29.78	13.38	43.16
Drywall Taper or Finisher	25.95	13.10	39.05

<b>Fringe Benefits Must Be Paid On <u>All</u> Hours Worked</b>			
<b><u>TRADE OR OCCUPATION</u></b>	<b><u>HOURLY BASIC RATE OF PAY</u></b>	<b><u>HOURLY FRINGE BENEFITS</u></b>	<b><u>TOTAL</u></b>
	<b>\$</b>	<b>\$</b>	<b>\$</b>
Electrician Future Increase(s): Add \$1.70/hr on 6/1/2010.	31.61	17.90	49.51
Elevator Constructor	42.73	16.47	59.20
Fence Erector	22.50	2.78	25.28
Fire Sprinkler Fitter	35.69	15.32	51.01
Glazier	36.83	6.68	43.51
Heat or Frost Insulator	31.63	18.26	49.89
Insulator (Batt or Blown)	22.87	11.40	34.27
Ironworker	30.30	15.71	46.01
Lather	27.51	13.46	40.97
Line Constructor (Electrical)	34.57	14.43	49.00
Marble Finisher Future Increase(s): Add \$1.78 on 6/1/2010; Add \$1.78 on 6/1/2011	27.66	14.92	42.58
Marble Mason Future Increase(s): Add \$1.95 on 6/1/2010	34.58	14.92	49.50
Metal Building Erector	30.30	15.71	46.01
Millwright	29.11	13.46	42.57
Overhead Door Installer	25.94	13.63	39.57
Painter Premium Pay: Add \$.25/hr. sandblasting; Add \$.40/hr. paperhanging; Add \$1.00/hr. spray/structural steel.	25.65	13.10	38.75
Pavement Marking Operator	23.46	9.45	32.91
Piledriver	28.01	13.46	41.47
Pipeline Fuser or Welder (Gas or Utility)	29.27	15.89	45.16
Plasterer	26.68	10.71	37.39
Plumber Future Increase(s): Add \$1/hr on 6/1/10; Add \$1/hr on 12/1/10.	35.78	13.76	49.54
Refrigeration Mechanic	31.43	14.46	45.89
Roofer or Waterproofing	28.85	10.06	38.91
Sheet Metal Worker	33.23	18.53	51.76
Steamfitter	38.05	14.76	52.81
Teledata Technician or Installer	21.08	5.52	26.60
Temperature Control Installer	31.00	16.80	47.80
Terrazzo Finisher	25.50	4.21	29.71
Terrazzo Mechanic	31.16	15.98	47.14
Tile Finisher	20.00	0.18	20.18
Tile Setter Future Increase(s): Add \$1.65 05/31/2010	29.21	14.85	44.06
Tuckpointer, Caulker or Cleaner	31.48	11.46	42.94
Underwater Diver (Except on Great Lakes)	33.00	13.26	46.26
Well Driller or Pump Installer	24.22	14.80	39.02
Siding Installer	30.51	18.41	48.92
Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	34.57	15.39	49.96
Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	37.16	14.82	51.98
Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	34.57	15.39	49.96

**Fringe Benefits Must Be Paid On All Hours Worked**

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	22.47	11.78	34.25
Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	31.11	15.39	46.50

**TRUCK DRIVERS**

Single Axle or Two Axle	22.22	14.67	36.89
Three or More Axle	17.50	12.16	29.66
Articulated, Euclid, Dumptror, Off Road Material Hauler Future Increase(s): Add \$1.80/hr on 5/31/2010.	30.89	17.16	48.05
Pavement Marking Vehicle	19.25	10.84	30.09
Truck Mechanic	17.50	12.16	29.66

**LABORERS**

General Laborer Future Increase(s): Add \$1.65/hr on 5/31/2010 Premium Pay: Add \$1.00/hr for certified welder; Add \$.25/hr for mason tender	23.54	12.40	35.94
Asbestos Abatement Worker	15.00	5.11	20.11
Landscaper	13.15	0.00	13.15
Gas or Utility Pipeline Laborer (Other Than Sewer and Water)	19.44	11.15	30.59
Fiber Optic Laborer (Outside, Other Than Concrete Encased)	21.49	3.11	24.60
Railroad Track Laborer	18.00	1.19	19.19

**HEAVY EQUIPMENT OPERATORS  
SITE PREPARATION, UTILITY AND LANDSCAPING WORK ONLY**

Crane; Backhoe (Track Type); Tractor or Truck Mounted Hydraulic Backhoe; Gradall (Cruz-Aire Type); Mechanic or Welder; Bulldozer or Endloader; Grader or Motor Patrol; Scraper (Self Propelled or Tractor Drawn) 5cu yards or more capacity; Power Subgrader; Asphalt Milling Machine; Boring Machine (Horizontal, Vertical or Directional); Air Track, Rotary or Percussion Drilling Machine; Trencher; Post Hole Digger or Driver; Tug or Launch (not performing work on the Great Lakes)	29.89	16.83	46.72
Farm or Industrial Type Tractor; Greaser; Compactor (Self-Propelled); Broom or Sweeper; Environmental Burner Future Increase(s): Add \$1.70/hr on 6/1/2010; Add \$1.85/hr on 6/1/2011.	31.32	16.05	47.37
Crusher, Screening or Wash Plant; Air Compressor (400 CFM or Over); Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Skid Steer Loader (With or Without Attachments); Skid Rig; Stump Chipper; Mulcher; Vibratory Hammer or Extractor Future Increase(s): Add \$1.80/hr on 5/31/2010.	28.82	17.16	45.98

**HEAVY EQUIPMENT OPERATORS  
EXCLUDING SITE PREPARATION, UTILITY, PAVING AND LANDSCAPING WORK**

Crane, Tower Crane or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons; Crane, Tower Crane or Derrick, With Boom, Leads and/or Jib Lengths Measuring 176 Feet or Over	33.37	17.16	50.53
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**Fringe Benefits Must Be Paid On All Hours Worked**

<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
	\$	\$	\$
Future Increase(s): Add \$2.05/hr on 5/31/2010. Premium Pay: Add \$.50/hr for cranes with lifting capacity at 200 ton; Add \$1.00/hr. at 300 ton; Add \$1.50/hr at 400 ton; Add \$2.00/hr at 500 ton.			
Crane, Tower Crane or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under; Crane, Tower Crane or Derrick, With Boom, Leads and/or Jib Lengths Measuring 175 Feet or Under; Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Traveling Crane (Bridge Type); Caisson Rig; Pile Driver; Dredge (Not Performing Work on the Great Lakes)	34.81	16.41	51.22
Crane (Go-Devil Type) or Truck Mounted Hydraulic Crane (10 Tons or Under); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs.; Tractor or Truck Mounted Hydraulic Backhoe; Gradall (Cruz-Aire Type); Mechanic or Welder; Bulldozer or Endloader; Grader or Motor Patrol; Scraper (Self Propelled or Tractor Drawn) 5 cu yards or more capacity; Concrete Pump, Grout Pump or Concrete Conveyor (Rotec or Bidwell Type); Concrete Breaker (Manual or Remote); Concrete Batch Plant; Power Subgrader; Concrete Spreader; Concrete Paver; Concrete Grinder or Planing Machine; Concrete Conveyor System; Concrete Slipform Placer; Curb and Gutter Machine; Roller (Over 5 Ton); Shouldering Machine; Boring Machine (Horizontal, Vertical or Directional); Air Track, Rotary or Percussion Drilling Machine; Straddle Carrier or Travel Lift; Forklift (Machinery Moving or Steel Erection); Manhoist or Elevator; Material or Stack Hoist; Trencher; Sideboom; Hydro-Blaster (10,000 PSI or Over); Post Hole Digger or Driver; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment	30.42	16.41	46.83
Farm or Industrial Type Tractor; Greaser; Compactor (Self-Propelled); Concrete Saw (Vermeer Type); Concrete Bump Cutter or Grooving Machine; Tining or Curing Machine; Roller (5 Tons or Under); Broom or Sweeper; Hoist (Tugger); Environmental Burner	30.63	6.37	37.00
Crusher, Screening or Wash Plant; Air, Electric or Hydraulic Jacking System; Air Compressor (400 CFM or Over); Generator (150 KW or Over); Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Skid Steer Loader (With or Without Attachments); Robotic Tool Carrier (With or Without Attachments); Skid Rig; Stump Chipper; Mulcher; Vibratory Hammer or Extractor	30.63	8.93	39.56
Oiler; Forklift	27.19	16.57	43.76
Gas or Utility Pipeline, Except Sewer and Water (Primary Equipment)	32.71	18.53	51.24
Gas or Utility Pipeline, Except Sewer and Water (Secondary Equipment)	28.12	16.40	44.52
Future Increase(s): Add \$1.60/hr on 6/1/2010; Add \$1.60/hr on 6/1/2011.			
Fiber Optic Cable Equipment	37.05	3.69	40.74

This document **MUST BE POSTED** by the **CONTRACTING AGENCY** in at least one conspicuous and easily accessible place **on the site of the project**. A local governmental unit may post this document at the place normally used to post public notices if there is no common site on the project. This document **MUST** remain posted during the entire time any worker is employed on the project and **MUST** be physically incorporated into the specifications and all contracts and most subcontracts. If you have any questions, please write to the Equal Rights Division, Labor Standards Bureau, P.O. Box 8928, Madison, Wisconsin 53708 or call (608) 266-7537.



**The following statutory provisions apply to local governmental unit public works projects and are set forth below pursuant to the requirements of s. 66.0903 (8), Stats.**

Each contractor, subcontractor or agent thereof performing work on a project that is subject to this section shall keep full and accurate records clearly indicating the name and trade or occupation of every person described in sub. (4) and an accurate record of the number of hours worked by each of those persons and the actual wages paid therefor.

Any contractor, subcontractor or agent thereof, who fails to pay the prevailing wage rate determined by the department under sub.(3) or who pays less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor determined under sub.(3), shall be liable to any affected employe in the amount of his or her unpaid wages or his or her unpaid overtime compensation and in an additional equal amount as liquidated damages. An action to recover the liability may be maintained in any court of competent jurisdiction by any employe for and in behalf of that employe and other employes similarly situated. No employe may be a party plaintiff to any such action unless the employe consents in writing to become such a party and the consent is filed in the court in which the action is brought. Notwithstanding s. 814.04 (1), the court shall, in addition to any judgment awarded to the plaintiff, allow reasonable attorney fees and costs to be paid by the defendant.

**DANE COUNTY, WISCONSIN**  
**BUY AMERICAN AFFIDAVIT**

COMPANY NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CONTRACT NO.: \_\_\_\_\_ DIVISION(S) OF WORK: \_\_\_\_\_

**AFFIDAVIT**

STATE OF WISCONSIN)

) ss.

DANE COUNTY )

I, \_\_\_\_\_, being  
name and title of person signing affidavit  
first duly sworn at \_\_\_\_\_,  
city & state of company incorporation

on oath, depose and say that with respect to the Buy American requirement have used American, Steel, and Manufactured Goods as required under Section 1605 of the American Recovery and Reinvestment ACT of 2009 by the

\_\_\_\_\_, subcontractors on the \_\_\_\_\_  
contractor company name division(s) of work  
\_\_\_\_\_, at the \_\_\_\_\_  
building or site of project

that during the period commencing \_\_\_\_\_, and ending \_\_\_\_\_

Product(s) Description: (If necessary add attachment)

Item or product	Manufacture	Specification Section

\_\_\_\_\_  
Print Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

Sworn to before me this \_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

My Commission expires \_\_\_\_\_  
Date

## ARRA Reporting Requirements

### Period of Performance:

This contract becomes effective on the date it is signed by the Dane County Executive.

An acknowledgment of Federal support and a disclaimer must appear in the publication of any material, whether copyrighted or not, based on or developed under this project, as follows:

Acknowledgment: "This material is based upon work supported by the Department of Energy under Award Number *DE-EE0000842*."

Disclaimer: "This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

### Reporting Requirements:

The American Recovery and Reinvestment Act require that the public be informed of how money is used for economic recovery. The law ensures accountability and transparency through a number of reporting requirements. Under the guidelines in the law, **The Contractor** will be required to:

- Report on the use of recovery funds in Wisconsin for this program;
- Ensure the funds are used appropriately as defined by the law;
- Provide the number of jobs that were created or saved by the funds.

**The Contractor is responsible for supplying all required monthly and quarterly reporting for Contractor's work and for all sub-contractors' work.**

Reporting requirements detailed below are subject to changes by U.S. DOE throughout the period of performance. Compliance with any changes to reporting is required.

#### MONTLHY:

**The Contractor** is required to submit to Dane County on the third of each month;

1. Information on vendors utilized (including, amount paid, complete address, DUNS and CCR identifiers); and
2. Metric Activities:
  - a. Energy Cost Savings
  - b. Renewable Energy Capacity and Generation
  - c. Job Creation/retained the prior month, as a direct result of ARRA funding.
  - d. Energy Savings
  - e. Emissions and Green House Gas Reductions
3. Prior monthly expenditures staff hours, and infrastructure requirements
4. Number of Public Buildings Retrofit
5. Square FT of Retrofit Work Completed

## ARRA Reporting Requirements

6. Number of Renewable Energy Systems installed
7. Capacity of Renewable Energy Systems Installed

### QUARTERLY:

**The Contractor** is required to submit quarterly reports via the following timeline, until December 31, 2013.

Reporting Period	Report Due
January 1 <sup>st</sup> – March 31 <sup>st</sup>	April 3 <sup>rd</sup>
April 1 <sup>st</sup> – June 30 <sup>th</sup>	July 3 <sup>rd</sup>
July 1 <sup>st</sup> – September 30 <sup>th</sup>	October 3 <sup>rd</sup>
October 1 <sup>st</sup> – December 31 <sup>st</sup>	January 3 <sup>rd</sup>

Reports should contain information specific to each activity in the program, as well as each infrastructure project, if applicable. Specifically, the report should contain the following information:

1. Project Development/Status Information
2. Quarterly Activities/Project Description
3. Metric Activities:
  - a. Energy Cost Savings
  - b. Renewable Energy Capacity and Generation
  - c. Job Creation
  - d. Energy Savings
  - e. Emissions and Green House Gas Reductions
4. Major activities, significant results, major findings, and key outcomes.
5. Are you following the Plan? If not, describe the change in approach, and reasons for the change.
6. Actual or anticipated problems or delays and corrective action plan.
7. Products produced or technology transfer activities accomplished during the reporting period.
8. What you planned to accomplish this period.
9. Efficiency improvements (behavioral, simple adjustments)
10. Economic improvements
11. Environmental benefits achieved as a result of this program
12. Promotions and public education activities
13. Training activities
14. Lessons learned and continuous improvement efforts
15. If applicable, provide a listing of the manufacturers of the equipment purchased to perform activities funded by the Energy Efficiency Block Grant Program, in compliance with the Buy American (see Attachment A-2) requirements; and
16. If applicable, provide written assurance (i.e. payroll records) that all construction, laborers and mechanics on projects funded directly or assisted in whole or in part by and through this program are paid wages at

### **ARRA Reporting Requirements**

rates not less than those prevailing on projects of a character similar in the locality as determined by the Davis-Bacon Act (see attachments A-3).

17. Contractor will use WasteCap for waste reuse and recycling. (see attachment A-4)

#### **SPECIAL STATUS REPORTS:**

A report is required (via email), as soon as possible, after any of the following events occur:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the ability to meet the objectives of the award or which may require the Dane County or the U.S. DOE to respond to questions relating to such events from the public.

Report on any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:

- a. Any single fatality or injuries requiring hospitalization of five or more individuals.
- b. Any significant environmental permit violation.
- c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
- d. Any incident which causes a significant process or hazard control system failure.
- e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
- f. Any damage to Government-owned equipment in excess of \$50,000.
- g. Any other incident that has the potential for high visibility in the media.

#### **FINAL REPORT:**

Provide all information for a final report that is due 60 days after the contract terminates.

## ARRA Reporting Requirements

### ATTACHMENT A-1

#### SPECIAL PROVISIONS RELATING TO WORK FUNDED UNDER AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

##### Preamble

The American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, (Recovery Act) was enacted to preserve and create jobs and promote economic recovery, assist those most impacted by the recession, provide investments needed to increase economic efficiency by spurring technological advances in science and health, invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits, stabilize State and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive State and local tax increases. Recipients shall use grant funds in a manner that maximizes job creation and economic benefit.

The Recipient shall comply with all terms and conditions in the Recovery Act relating generally to governance, accountability, transparency, data collection and resources as specified in Act itself and as discussed below.

Recipients should begin planning activities for obtaining a DUNS number (or updating the existing DUNS record), and registering with the Central Contractor Registration (CCR).

Be advised that Recovery Act funds can be used in conjunction with other funding as necessary to complete projects, but tracking and reporting must be separate to meet the reporting requirements of the Recovery Act and related guidance. For projects funded by sources other than the Recovery Act, Contractors must keep separate records for Recovery Act funds and to ensure those records comply with the requirements of the Act.

The Government has not fully developed the implementing instructions of the Recovery Act, particularly concerning specific procedural requirements for the new reporting requirements. The Recipient will be provided these details as they become available. The Recipient must comply with all requirements of the Act. If the recipient believes there is any inconsistency between ARRA requirements and current award terms and conditions, the issues will be referred to the Contracting Officer for reconciliation.

## ARRA Reporting Requirements

### Definitions

For purposes of this clause, Covered Funds means funds expended or obligated from appropriations under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5. Covered Funds will have special accounting codes and will be identified as Recovery Act funds in the grant, cooperative agreement or TIA and/or modification using Recovery Act funds. Covered Funds must be reimbursed by September 30, 2015.

Non-Federal employer means any employer with respect to covered funds – the contractor, subcontractor, grantee, or recipient, as the case may be, if the contractor, subcontractor, grantee, or recipient is an employer; and any professional membership organization, certification of other professional body, any agent or licensee of the Federal government, or any person acting directly or indirectly in the interest of an employer receiving covered funds; or with respect to covered funds received by a State or local government, the State or local government receiving the funds and any contractor or subcontractor receiving the funds and any contractor or subcontractor of the State or local government; and does not mean any department, agency, or other entity of the federal government.

Recipient means any entity that receives Recovery Act funds directly from the Federal government (including Recovery Act funds received through grant, loan, or contract) other than an individual and includes a State that receives Recovery Act Funds.

### A. Flow Down Requirement

As required by the US Department of Energy, the Office of Energy Independence must include these special terms and conditions in any sub-recipient. All sub-recipients are held to the following special provisions and requirements as the main recipient.

### b. Segregation of Costs

Recipients must segregate the obligations and expenditures related to funding under the Recovery Act. Financial and accounting systems should be revised as necessary to segregate, track and maintain these funds apart and separate from other revenue streams. No part of the funds from the Recovery Act shall be commingled with any other funds or used for a purpose other than that of making payments for costs allowable for Recovery Act projects.

### C. Prohibition on Use of Funds

None of the funds provided under this agreement derived from the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, may be used by any State or local

## **ARRA Reporting Requirements**

government, or any private entity, for any casino or other gambling establishment, aquarium, zoo, golf course, or swimming pool.

### D. Access to Records

With respect to each financial assistance agreement awarded utilizing at least some of the funds appropriated or otherwise made available by the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, any representative of an appropriate inspector general appointed under section 3 or 8G of the Inspector General Act of 1988 (5 U.S.C. App.) or of the Comptroller General is authorized –

- (1) to examine any records of the contractor or grantee, any of its subcontractors or subgrantees, or any State or local agency administering such contract that pertain to, and involve transactions relation to, the subcontract, subcontract, grant, or subgrant; and
- (2) to interview any officer or employee of the contractor, grantee, subgrantee, or agency regarding such transactions.

### E. Publication

An application may contain technical data and other data, including trade secrets and/or privileged or confidential information, which the applicant does not want disclosed to the public or used by the Government for any purpose other than the application. To protect such data, the applicant should specifically identify each page including each line or paragraph thereof containing the data to be protected and mark the cover sheet of the application with the following Notice as well as referring to the Notice on each page to which the Notice applies:

#### Notice of Restriction on Disclosure and Use of Data

The data contained in pages ---- of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data here to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

Information about this agreement will be published on the Internet and linked to the website [www.recovery.gov](http://www.recovery.gov), maintained by the Accountability and Transparency Board. The Board may exclude posting contractual or other information on the website on a case-by-case basis when necessary to protect national security or to protect information that is not subject to disclosure under sections 552 and 552a of title 5, United States Code.

### F. Protecting State and Local Government and Contractor Whistleblowers.

The requirements of Section 1553 of the Act are summarized below. They include, but are not limited to:



## ARRA Reporting Requirements

**Prohibition on Reprisals:** An employee of any non-Federal employer receiving covered funds under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, may not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing, including a disclosure made in the ordinary course of an employee's duties, to the Accountability and Transparency Board, an inspector general, the Comptroller General, a member of Congress, a State or Federal regulatory or law enforcement agency, a person with supervisory authority over the employee (or other person working for the employer who has the authority to investigate, discover or terminate misconduct, a court or grant jury, the head of a Federal agency, or their representatives information that the employee believes is evidence of:

- gross management of an agency contract or grant relating to covered funds;
- a gross waste of covered funds
- a substantial and specific danger to public health or safety related to the implementation or use of covered funds;
- an abuse of authority related to the implementation or use of covered funds; or
- as violation of law, rule, or regulation related to an agency contract (including the competition for or negotiation of a contract) or grant, awarded or issued relating to covered funds.

**Agency Action:** Not later than 30 days after receiving an inspector general report of an alleged reprisal, the head of the agency shall determine whether there is sufficient basis to conclude that the non-Federal employer has subjected the employee to a prohibited reprisal. The agency shall either issue an order denying relief in whole or in part or shall take one or more of the following actions:

- Order the employer to take affirmative action to abate the reprisal.
- Order the employer to reinstate the person to the position that the person held before the reprisal, together with compensation including back pay, compensatory damages, employment benefits, and other terms and conditions of employment that would apply to the person in that position if the reprisal had not been taken.
- Order the employer to pay the employee an amount equal to the aggregate amount of all costs and expenses (including attorneys' fees and expert witnesses' fees) that were reasonably incurred by the employee for or in connection with, bringing the complaint regarding the reprisal, as determined by the head of a court of competent jurisdiction.

**Nonenforceability of Certain Provisions Waiving Rights and Remedies or Requiring Arbitration:** Except as provided in a collective bargaining agreement, the rights and remedies provided to aggrieved employees by this section may not be waived by any agreement, policy, form, or condition of employment, including any predispute arbitration agreement. No predispute arbitration agreement shall be valid or enforceable if it requires arbitration of a dispute arising out of this section.

**Requirement to Post Notice of Rights and Remedies:** Any employer receiving covered funds under the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, shall post notice of the rights and remedies as required therein. (Refer to section 1553 of the American Recovery and Reinvestment Act of 2009, Pub. L. 111-5, [www.Recovery.gov](http://www.Recovery.gov), for specific requirements of this section and prescribed language for the notices.).

## **ARRA Reporting Requirements**

G. RESERVED.

H. False Claims Act

Recipient and sub-recipients shall promptly refer to the DOE or other appropriate Inspector General any credible evidence that a principal, employee, agent, contractor, sub-grantee, subcontractor or other person has submitted a false claim under the False Claims Act or has committed a criminal or civil violation of laws pertaining to fraud, conflict or interest, bribery, gratuity or similar misconduct involving those funds.

I. Information in supporting of Recovery Act Reporting

Recipient may be required to submit backup documentation for expenditures of funds under the Recovery Act including such items as timecards and invoices. Recipient shall provide copies of backup documentation at the request of the Contracting Officer or designee.

### **ATTACHMENT A-2**

#### REQUIRED USE OF AMERICAN IRON, STEEL, AND MANUFACTURED GOODS -- SECTION 1605 OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009

(a) Definitions. As used in this award term and condition--

(1) Manufactured good means a good brought to the construction site for incorporation into the building or work that has been--

(i) Processed into a specific form and shape; or

(ii) Combined with other raw material to create a material that has different properties than the properties of the individual raw materials.

(2) Public building and public work means a public building of, and a public work of, a governmental entity (the United States; the District of Columbia; commonwealths, territories, and minor outlying islands of the United States; State and local governments; and multi-State, regional, or interstate entities which have governmental functions). These buildings and works may include, without limitation, bridges, dams, plants, highways, parkways, streets, subways, tunnels, sewers, mains, power lines, pumping stations, heavy generators, railways, airports, terminals, docks, piers, wharves, ways, lighthouses, buoys, jetties,

## ARRA Reporting Requirements

breakwaters, levees, and canals, and the construction, alteration, maintenance, or repair of such buildings and works.

(3) Steel means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.

(b) Domestic preference.

(1) This award term and condition implements Section 1605 of the American Recovery and Reinvestment Act of 2009 (Recovery Act) (Pub. L. 111--5), by requiring that all iron, steel, and manufactured goods used in the project are produced in the United States except as provided in paragraph (b)(3) and (b)(4) of this section and condition.

(2) This requirement does not apply to the material listed by the Federal Government as follows: none

(3) The award official may add other iron, steel, and/or manufactured goods to the list in paragraph (b)(2) of this section and condition if the Federal Government determines that--

(i) The cost of the domestic iron, steel, and/or manufactured goods would be unreasonable. The cost of domestic iron, steel, or manufactured goods used in the project is unreasonable when the cumulative cost of such material will increase the cost of the overall project by more than 25 percent;

(ii) The iron, steel, and/or manufactured good is not produced, or manufactured in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(iii) The application of the restriction of section 1605 of the Recovery Act would be inconsistent with the public interest.

(c) Request for determination of inapplicability of Section 1605 of the Recovery Act .

(1)(i) Any recipient request to use foreign iron, steel, and/or manufactured goods in accordance with paragraph (b)(3) of this section shall include adequate information for Federal Government evaluation of the request, including--

(A) A description of the foreign and domestic iron, steel, and/or manufactured goods;

(B) Unit of measure;

(C) Quantity;

(D) Cost;

## ARRA Reporting Requirements

- (E) Time of delivery or availability;
- (F) Location of the project;
- (G) Name and address of the proposed supplier; and
- (H) A detailed justification of the reason for use of foreign iron, steel, and/or manufactured goods cited in accordance with paragraph (b)(3) of this section.
  - (ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed cost comparison table in the format in paragraph (d) of this section.
  - (iii) The cost of iron, steel, and/or manufactured goods material shall include all delivery costs to the construction site and any applicable duty.
  - (iv) Any recipient request for a determination submitted after Recovery Act funds have been obligated for a project for construction, alteration, maintenance, or repair shall explain why the recipient could not reasonably foresee the need for such determination and could not have requested the determination before the funds were obligated. If the recipient does not submit a satisfactory explanation, the award official need not make a determination.

(2) If the Federal Government determines after funds have been obligated for a project for construction, alteration, maintenance, or repair that an exception to section 1605 of the Recovery Act applies, the award official will amend the award to allow use of the foreign iron, steel, and/or relevant manufactured goods. When

the basis for the exception is nonavailability or public interest, the amended award shall reflect adjustment of the award amount, redistribution of budgeted funds, and/or other actions taken to cover costs associated with acquiring or using the foreign iron, steel, and/or relevant manufactured goods. When the basis for the exception is the unreasonable cost of the domestic iron, steel, or manufactured goods, the award official shall adjust the award amount or redistribute budgeted funds by at least the differential established in 2 CFR 176.110(a).

(3) Unless the Federal Government determines that an exception to section 1605 of the Recovery Act applies, use of foreign iron, steel, and/or manufactured goods is noncompliant with section 1605 of the American Recovery and Reinvestment Act.

(d) Data. To permit evaluation of requests under paragraph (b) of this section based on unreasonable cost, the Recipient shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Items Cost Comparison

### ARRA Reporting Requirements

Description	Unit of measure	Quantity
Cost(dollars)*		
Item 1:		
Foreign steel, iron, or manufactured good _____	_____	_____
_____		
Domestic steel, iron, or manufactured good _____	_____	_____
_____		
Item 2:		
Foreign steel, iron, or manufactured good _____	_____	_____
_____		
Domestic steel, iron, or manufactured good _____	_____	_____
_____		

[List name, address, telephone number, email address, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.] [Include other applicable supporting information.] [\*Include all delivery costs to the construction site.]

### ATTACHMENT A-3

#### DAVIS BACON ACT AND CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

#### WAGE RATE REQUIREMENTS UNDER SECTION 1606 OF THE RECOVERY ACT

(a) Section 1606 of the Recovery Act requires that all laborers and mechanics employed by contractors and subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government pursuant to the Recovery Act shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 of title 40, United States Code.

Pursuant to Reorganization Plan No. 14 and the Copeland Act, 40 U.S.C. 3145, the Department of Labor has issued regulations at 29 CFR parts 1, 3, and 5 to implement the Davis-Bacon and related Acts. Regulations in 29 CFR 5.5 instruct agencies concerning application of the standard Davis-Bacon contract clauses set forth in that section. Federal agencies providing grants, cooperative agreements, and loans under the Recovery Act shall ensure that the standard Davis-Bacon contract clauses found in 29 CFR 5.5(a) are incorporated in any resultant covered contracts that are in excess of \$2,000 for construction, alteration or repair (including painting and decorating).

(b) For additional guidance on the wage rate requirements of section 1606, contact your awarding agency. Recipients of grants, cooperative agreements and loans should direct their initial inquiries concerning the application of Davis-Bacon requirements to a

## ARRA Reporting Requirements

particular federally assisted project to the Federal agency funding the project. The Secretary of Labor retains final coverage authority under Reorganization Plan Number 14.

**Definitions:** For purposes of this article, Davis Bacon Act and Contract Work Hours and Safety Standards Act, the following definitions are applicable:

(1) “Award” means any grant, cooperative agreement or technology investment agreement made with Recovery Act funds by the Department of Energy (DOE) to a Recipient. Such Award must require compliance with the labor standards clauses and wage rate requirements of the Davis-Bacon Act (DBA) for work performed by all laborers and mechanics employed by Recipients (other than a unit of State or local government whose own employees perform the construction) Subrecipients, Contractors and subcontractors.

(2) “Contractor” means an entity that enters into a Contract. For purposes of these clauses, Contractor shall include (as applicable) prime contractors, Recipients, Subrecipients, and Recipients’ or Subrecipients’ contractors, subcontractors, and lower-tier subcontractors. “Contractor” does not mean a unit of State or local government where construction is performed by its own employees.”

(3) “Contract” means a contract executed by a Recipient, Subrecipient, prime contractor or any tier subcontractor for construction, alteration, or repair. It may also mean (as applicable) (i) financial assistance instruments such as grants, cooperative agreements, technology investment agreements, and loans; and, (ii)

Sub awards, contracts and subcontracts issued under financial assistance agreements. “Contract” does not mean a financial assistance instrument with a unit of State or local government where construction is performed by its own employees.

(4) “Contracting Officer” means the DOE official authorized to execute an Award on behalf of DOE and who is responsible for the business management and non-program aspects of the financial assistance process.

(5) “Recipient” means any entity other than an individual that receives an Award of Federal funds in the form of a grant, cooperative agreement or technology investment agreement directly from the Federal Government and is financially accountable for the use of any DOE funds or property, and is legally responsible for carrying out the terms and conditions of the program and Award.

(6) “Subaward” means an award of financial assistance in the form of money, or property in lieu of money, made under an award by a Recipient to an eligible Subrecipient or by a Subrecipient to a lower- tier subrecipient. The term

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includes financial assistance when provided by any legal agreement, even if the agreement is called a contract, but does not include the Recipient's procurement of goods and services to carry out the program nor does it include any form of assistance which is excluded from the definition of "Award" above.

(7) "Subrecipient" means a non-Federal entity that expends Federal funds received from a Recipient to carry out a Federal program, but does not include an individual that is a beneficiary of such a program.

### (a) Davis Bacon Act

(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3) ), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may

be alleged to exist between the Contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section;

also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon

## **ARRA Reporting Requirements**

poster (WH-1321) shall be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The Contracting Officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the Contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour

Division, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of

receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.

(C) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the 30-day period that additional time is necessary.



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(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this Contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the Contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding. The Department of Energy or the Recipient or Subrecipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and

mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the Contract, the Department of Energy, Recipient, or Subrecipient, may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as

may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of

## ARRA Reporting Requirements

the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii) (A) The Contractor shall submit weekly for each week in which any Contract work is performed a copy of all payrolls to the Department of Energy if the agency is a party to the Contract, but if the agency is not such a party, the Contractor will submit the payrolls to the Recipient or Subrecipient (as applicable), applicant, sponsor, or owner, as the case may be, for transmission to the Department of Energy. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on

weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional

**Form WH-347 is available for this purpose from the Wage and Hour Division Web site at**

**<http://www.dol.gov/whd/forms/wh347instr.htm> or its successor site.** The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall

maintain the full social security number and current address of each covered worker, and shall provide them upon request to the Department of Energy if the agency is a party to the Contract, but if the agency is not such a party, the Contractor will submit them to the

## **ARRA Reporting Requirements**

Recipient or Subrecipient (as applicable), applicant, sponsor, or owner, as the case may be, for transmission to the Department of Energy, the Contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the Recipient or Subrecipient (as applicable), applicant, sponsor, or owner).

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for

the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 3729 of title 31 of the United States Code.

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(iii) The Contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Department of Energy or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

### (4) Apprentices and trainees--

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not

less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the

applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the

## **ARRA Reporting Requirements**

apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the

Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize

trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the

## **ARRA Reporting Requirements**

equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this Contract.

(6) Contracts and Subcontracts. The Recipient, Subrecipient, the Recipient's and Subrecipient's contractors and subcontractor shall insert in any Contracts the clauses contained herein in(a)(1) through (10) and such other clauses as the Department of Energy may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The Recipient shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of the paragraphs in this clause.

(7) Contract termination: debarment. A breach of the Contract clauses in 29 CFR 5.5 may be grounds for termination of the Contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this Contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Recipient, Subrecipient, the Contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this Contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

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**(b) Contract Work Hours and Safety Standards Act.** As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No Contractor or subcontractor contracting for any part of the Contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the Contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The Department of Energy or the Recipient or Subrecipient shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to

satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Contracts and Subcontracts. The Recipient, Subrecipient, and Recipient's and Subrecipient's contractor or subcontractor shall insert in any Contracts, the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier

subcontracts. The Recipient shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

### **ARRA Reporting Requirements**

(5) The Contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the Contract for all laborers and mechanics, including guards and watchmen, working on the Contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. The records to be maintained under this paragraph shall be made available by the Contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Department of Energy and the Department of Labor, and the Contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

### **ATTACHMENT A-4**

#### **SECTION 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**



# ARRA Reporting Requirements

BASED ON DSF MASTER SPECIFICATION DATED 12/11/2007

## INDEX:

### Part 1 - General

Description  
Related Documents  
Preconstruction and Prebid Meetings  
Recycling Goal  
Submittals  
Construction Waste Management Plan

### Part 2 - Products

(Not Applicable)

### Part 3 - Execution

Construction Waste Management Plan Implementation

## PART 1 - GENERAL

### DESCRIPTION

Applicable provisions of Division 01 shall govern all work under this Section.

This Section specifies requirements for salvaging, recycling and disposing of construction waste.

### RELATED DOCUMENTS

The following related resource documents are available:

- i. Recycling Evaluation Tools
- ii. Construction Waste Management Appendix

### PRECONSTRUCTION AND PREBID MEETINGS

The Pre-bid Conference (if conducted) and Preconstruction Conference will include discussion of construction waste management requirements. Prior to the commencement of the Work, the Lead Contractor should schedule and conduct a meeting with Dane County and the Architect to discuss the proposed Construction Waste Management Plan to develop a mutual understanding regarding details of construction waste management implementation.

### WASTE MANAGEMENT GOALS

The recycling goal (including reuse) to be achieved at Substantial Completion of the Project shall be at least [70 percent] by weight or volume of total waste generated by the Project and includes reuse.

**Reduce:** The Project shall generate the least amount of waste and methods shall be used that minimize waste due to error, poor planning, breakage, mishandling, contamination, or similar factors. Promote the resourceful use of materials to the greatest extent possible.

**Reuse:** All Contractors and Subcontractors shall reuse materials to the greatest extent possible. Salvage reusable materials for resale, for reuse on this Project, or for storage

## **ARRA Reporting Requirements**

for use on future projects. Return reusable items (e.g., pallets or unused products) to the material suppliers.

**Recycle:** As many of the waste materials not able to be eliminated in the first place or salvaged for reuse shall be recycled. Waste disposal in landfills shall be minimized to greatest extent possible.

### **SUBMITTALS**

**Construction Waste Management Plan:** Prior to commencing demolition or construction activities, the Lead Contractor, with input from all Prime & Subcontractors, shall develop and submit a Construction Waste Management Plan to Dane County for approval within 15 working days after Contract award or prior to any waste removal. The construction waste management plan can be generated by WasteCapTRACE based on information entered by the Lead Contractor.

**Summary of Waste Progress Reports:** Throughout the duration of the Project, the Lead Contractor shall report to Dane County with their periodic Applications for Payment a Summary of Waste including the quantity of each material recycled, reused, or salvaged, the receiving party, and the applicable diversion rates. This reporting shall take place using WasteCapTRACE, an on-line documentation system. There is a fee, to be included in the bid, of .02 cents per gross square foot of the project for use of WasteCapTRACE. Lead Contractor and Prime Contractors shall maintain a record of related weight tickets, manifests, receipts, and invoices for review by Dane County on request.

**Summary of Waste Final Documentation:** At Substantial Completion of the Project, the Lead Contractor shall submit a final summary of reuse and recycling results for all Prime & Subcontractors, including the quantity of each material recycled, reused, or salvaged, the receiving party and the applicable diversion rates. The final report will be generated by WasteCapTRACE based on information entered throughout the project by the Lead Contractor.

### **CONSTRUCTION WASTE MANAGEMENT PLAN**

The purpose of the Construction Waste Management Plan is to achieve successful reuse and recycling with the highest possible reuse and recycling rates. The Plan shall include the following:

A schedule identifying milestones and key reporting dates of Construction Waste Management.

A list of waste materials expected to be generated from the Project as debris.

A list of each material proposed to be salvaged, reused, recycled and discarded. Identify applicable markets for reuse and/or recycling. At a minimum, all materials required by State law to be recycled shall be recycled (e.g., cardboard, cans, bottles, office paper, fluorescent tubes, refrigerants, mercury, etc.) and scrap metal shall be recycled.

## **ARRA Reporting Requirements**

**Separation and Materials Handling Procedures:** Description of how waste materials identified above will be separated, cleaned (if necessary) and protected from contamination.

**Educational and Motivational Procedures:** Meetings to be held and other proposed methods for educating construction personnel regarding waste reduction and recycling.

**Waste Auditing Procedures:** Methods of monitoring and enforcing the Plan.

**Documentation Procedures:** Methods of documenting materials leaving the Project site as waste, for reuse or recycling to allow Summary of Waste Progress Reports to be submitted with Applications for Payment.

The Lead Contractor shall distribute copies of the Construction Waste Management Plan to Dane County's Project Manager & Project Representative, each Prime Contractor, and the Architect.

### **PART 2 – PRODUCTS (Not Applicable)**

### **PART 3 – EXECUTION**

#### **CONSTRUCTION WASTE MANAGEMENT PLAN IMPLEMENTATION**

The Lead Contractor shall be responsible for coordinating the separation, handling, recycling, salvage, reuse, and return methods to be used by all construction personnel. The Lead Contractor shall be responsible for reporting the results of the Construction Waste Management Plan. The Lead Contractor shall designate a "Waste Manager" who is responsible for instructing construction personnel and overseeing and documenting results of the Construction Waste Management Plan.

**Instruction:** The Lead Contractor shall provide on-site instruction regarding appropriate separation, handling, recycling, salvage, reuse, and return methods to be used by all construction personnel throughout the duration of the Project.

**Separation Facilities:** The Lead Contractor shall lay out and identify a specific area on the Project site for separating materials for recycling, salvage, reuse, and return. The Lead Contractor shall provide waste bins and shall keep these bins & the recycling area neat, clean and clearly marked to avoid contamination of materials.

**Sorting:** The following sorting methods are acceptable:

Sorting recyclable materials at the Project site and transporting them to recycling markets directly from the Project site.

Employing haulers who make use of a materials-recovery facility or a transfer station where recyclable materials are sorted from the waste and recycled before disposing of the remainder. If using a hauler or recycling facility to sort out recyclables, verify that the hauler sorts out all construction waste loads and is not limited to those that are not acceptable at the landfill. Also,

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verify that the hauler or recycling facility recycles at least three types of materials.

**Hazardous Waste:** Hazardous waste shall be disposed of according to General Requirements Article 31 "Cleaning and Waste Disposal." (Hazardous Waste is a separate category and not part of the basis on which the recycling percentage is calculated.)

**Application for Payments:** The Contractor shall submit the Summary of Waste with the Applications for Payment according to a schedule outlined in the Construction Waste Management Plan approved by Dane County. Failure to submit this information shall render the Application for Payment null and void, thereby delaying the Progress Payment.

The following resources are provided for information only, to aid the Contractor in managing the Project's construction waste:

The Wisconsin DNR, Bureau of Waste Management  
<http://www.dnr.state.wi.us/org/aw/wm/>

The UW-Extension's Solid and Hazardous Waste Education Center  
<http://www1.uwex.edu/ces/shwec/>, email [shwec@uwm.edu](mailto:shwec@uwm.edu) or telephone: 608-262-0385.

WasteCap Resource Solutions, Inc.  
<http://www.wastecap.org> or telephone: 414-961-1100 or 608-245-1100.

\* \* \*

## ARRA Reporting Requirements

### Construction and Demolition Waste Management Appendix

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for the evaluation of recycling operations.

#### 1.3 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, sealant (caulk), or the like.
- B. Construction Waste: Used as an umbrella term in the construction waste management specifications and evaluation tools to encompass construction waste, demolition waste and remodeling waste.
- C. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- D. Construction Waste Management Plan: A project-related plan for the collection, transportation, and disposal of waste generated at the construction site. The purpose of the plan is to reduce the amount of material being landfilled.
- E. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitability, corrosiveness, toxicity or reactivity.
- F. Landfill Tipping Fees: Monies paid for burying non-recyclable waste in the landfills.
- G. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitability, corrosiveness, toxicity, or reactivity.
- H. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- I. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse.
- J. Recycle: To remove a waste material from the Project site to another site for remanufacture into a new product for reuse.
- K. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- L. Return: To give back reusable items or unused products to vendors for credit.
- M. Reuse: To reuse a construction waste material in some manner on the Project site.
- N. Scrap Revenue: Monies received by the hauler for recyclable materials.
- O. Sediment: Soil and other debris that has been eroded and transported by storm, or well production runoff water.
- P. Trash: A product or material unable to be reused, returned, recycled, or salvaged.
- Q. Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through out-gassing: Solvents in paints and other coatings, wood preservatives, strippers and household cleaners, adhesives in particleboard, fiberboard, and some plywoods, and foam insulation. When released, VOC's can contribute to the formation of

## ARRA Reporting Requirements

smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.

- R. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

### 1.4 RECYCLING SERVICES AND EQUIPMENT

#### A. Recycling Service Options

- iii. Identify businesses that provide recycling services, determine which recycling services hauler(s) can provide, and identify other organizations that provide recycling or waste reduction services, such as education and documentation.
- iv. Option No. 1: Hire A Full-Service Recycling Contractor
  - a. Many or all source-separation and collection tasks are subcontracted to a recycling contractor. These contractors can provide training and on-site sorting services. Seek out the best service and the best fees (or prices) for materials targeted for recycling.
  - v. Option No. 2: Use A Hauler's Recycling Service
  - b. A hauler may offer recycling services. These services will generally be less complete than those of a full-service recycling contractor, but may be sufficient if the Contractor's own personnel can perform tasks the waste hauler does not. If the waste hauler does not provide re-sorting services or training to prevent future mis-sorting, establish an in-house training program to prevent mis-sorting. Mis-sorted materials will be treated as waste by the hauler, and recycling savings will be lost.
  - c. Ensure that the recycling goals are indicated in the Agreement made with the waste hauler. The Agreement shall include a list of materials intended to be recycled, the recycling markets to be used, the landfill that will be used for construction waste, acceptable contamination levels, a rate schedule, amount of time needed to respond to calls for pickup, and a requirement for monthly reports of quantities collected by volume and weight of each material, charges/revenues, and markets.
  - vi. Option No. 3: Operate An In-House Recycling Program
  - d. The Contractor shall be responsible for source-separation, collection, and the ordering of drop-offs and pick-ups. This option employs waste haulers that provide direct recycling services of certain recyclables and may include pick-up. Their services, fees, and/or rebates may vary depending on the material involved and other applicable factors. Other recycling services may be negotiated with the hauler.
  - vii. Recycling by Major Subcontractors
  - e. Major Subcontractors, (e.g., Mechanical and Electrical Subcontractors), may assume responsibility for their respective recycling and waste reduction programs, including but not limited to source separating, maintaining bins, and arranging drop-offs and pick-ups. These major Subcontractors may participate in any of the options listed above.
  - f. Subcontractors who do their own recycling shall report applicable recycling/waste amounts to the General Contractor monthly. The General Contractor shall be

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responsible for tabulating quantities and submitting the results to the Owner and Architect at **[Substantial]** **[Final]** Completion of the Project.

- B. Required Services and Equipment
1. Provide services and equipment necessary for successful recycling including the following, without limitation:
    - a. Materials sorting.
    - b. Bins.
    - c. Signs.
    - d. Education and training.
    - e. Monitoring.
    - f. Pick-ups.
    - g. Documentation.
    - viii. If an in-house recycling program using a waste hauler is used, identify materials intended to be recycled off-site and document all recycling accomplished.

### 1.5 APPLICATIONS FOR RECYCLED MATERIALS

- A. Reuse and Recycling Information: Agencies having information regarding applications and destinations for reuse and recycling construction and demolition waste materials include the following:
1. Construction Material Recycling Association. <http://www.cdrecycling.org>.
  2. Dane County Dept. of Public Works. <http://www.co.dane.wi.us/pubworks/recyc/markets.htm>.
  3. Habitat for Humanity. <http://www.restoredane.org>.
  4. Solid & Hazardous Waste Education Center, UW Extension. <http://www.uwex.edu/shwec>.
  5. WasteCap Wisconsin, Inc. [www.wastecapwi.org](http://www.wastecapwi.org).
  6. Wisconsin Department of Natural Resources, <http://www.dnr.state.wi.us/org/aw/wm/condemo/index.htm>
- B. Examples of materials and potential applications for recyclable materials include the following, without limitation:
1. Aluminum Cans, Straps, and Sheet: Recycle as a metal.
  2. Asphalt: Break up and transport asphalt-to-asphalt recycling facility or recycle on site.
  3. Brick: Can be reused if whole, crushed for use as landscape cover, sub-base material, or fill.
  4. Building Components And Fixtures: Windows, doors, cabinets, hardware, plumbing and electrical fixtures may be salvaged. Porcelain plumbing fixtures may be crushed for fill.
  5. Carpet and Carpet Pad: Store clean, dry carpet and pad in a closed container or trailer. Carpet may be able to be reused or recycled if sufficient quantities are generated.
  6. Ceiling Panels: If sufficient quantities are generated, sort by size, palletize, and shrink-wrap for shipment to and recycling by a ceiling tile manufacturer.
  7. Concrete: Can be crushed and graded for use as riprap, aggregate, sub-base material, or fill. Neutralize alkalinity if planting above. Remove reinforcement and other metals from concrete and sort with other metals.
  8. Concrete Block: Can be reused if whole, crushed for use as sub-base material or fill.
  9. Copper Pipe and Accessories: Recycle as a metal.
  10. Corrugated Cardboard and Paper: Separate for recycling into new paper products. Painted, waxed or muddy cardboard or paper is unsuitable for recycling and should be discarded.

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11. Dimensional Lumber, Oriented Strand Board, Plywood, Crates, and Pallets: Sort larger pieces for reuse. Wood unsuitable for reuse may be used to manufacture particleboard and other composite wood products. Chip or shred wood for use as animal bedding, landscape use, groundcover, mulch, compost, pulp, or process fuel. Do not chip or shred stained, painted or treated wood. Some recyclers have equipment to remove nails.
12. Doors and Hardware: If separated for reuse, brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
13. Glass Containers: Recycle as glass.
14. Gypsum Board: Gypsum wallboard to be processed and land spread must be new and clean construction scrap free of tape, joint compounds, paint, nails, screws, or other contaminants. Only regular ½” drywall, Type X drywall, and Plaster Base (standard blue board) may be used for a soil amendment. The following paper-faced gypsum panel can not be used as a soil amendment: WR (Green Board), Sheathing (Brown/Black Board), Mold Resistant Panels or Specialty Type X. These contain additives which may not be suitable as a soil amendment.
15. Land Clearing Debris: Can be chipped or shredded for use as ground cover, mulch, compost, pulp, or process fuel.
16. Lighting Fixtures: Separate lamps by type and protect from breakage. Fluorescent tubes must be recycled by law.
17. Miscellaneous Ferrous and Nonferrous Metals: Separate for recycling: banding, stud cut-offs, ceiling grid, ductwork, conduit, rebar, roofing, pipe, sheet metals, extruded metals, castings, miscellaneous steel shapes, and other metal parts.
18. Piping: If separated for reuse, reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinkler heads, and other components by type and size.
19. Precast Concrete Panels: May be able to be crushed and used for erosion control or landscape features.
20. Sheet Metal Scrap and Metal Duct Accessories: Recycle as a metal.
21. Structural Steel: Can be used in the manufacture of structural steel.
22. Vinyl: Siding, window extrusions, floor tiles, and sheet flooring may be able to be separated for recycling into new vinyl products.

**END OF APPENDIX**



SECTION 01 00 00  
BASIC REQUIREMENTS

PART 1 GENERAL

1.1 SECTION SUMMARY

- A. Section Includes:
1. Section Summary
  2. Summary of the Work
  3. Contractor Use of Premises
  4. Applications for Payment
  5. Alternates
  6. Coordination
  7. Cutting and Patching
  8. Conferences
  9. Progress Meetings
  10. Submittal Procedures
  11. Proposed Products List
  12. Shop Drawings
  13. Product Data
  14. Samples
  15. Manufacturers' Instructions
  16. Manufacturers' Certificates
  17. Quality Assurance / Quality Control of Installation
  18. References
  19. Interior Enclosures
  20. Protection of Installed Work
  21. Parking
  22. Staging Areas
  23. Occupancy During Construction and Conduct of Work
  24. Protection
  25. Progress Cleaning
  26. Products
  27. Transportation, Handling, Storage and Protection
  28. Product Options
  29. Substitutions
  30. Starting Systems
  31. Demonstration and Instructions
  32. Contract Closeout Procedures
  33. Final Cleaning
  34. Adjusting
  35. Operation and Maintenance Data
  36. Spare Parts and Maintenance Materials
  37. Record Drawings and Specifications

## 1.2 SUMMARY OF THE WORK

- A. Project Description: Perform the Work as specified and detailed in Construction Documents package. Contractor to provide solar photovoltaic system and associated controls for each site.
- B. Work by Owner: Concrete Slab for ground mount option for the Springfield Highway Garage.
- C. Permits: Prior to commencement of the Work, Contractor to secure any and all necessary permits for completion of the Work and facility occupancy.

## 1.3 CONTRACTOR USE OF PREMISES

- A. Limit use of premises to allow work by Contractors or Subcontractors and access by Owner.

## 1.4 APPLICATIONS FOR PAYMENT

- A. Submit two (2) copies of each application on AIA G702™ and G703™ forms or approved contractors invoice form.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: Monthly.

## 1.5 ALTERNATES

- A. Alternates quoted on Bid Form shall be reviewed and accepted or rejected at the Owner's option.
- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates:
  - 1. Alternate Bid A - Lump Sum.
    - a. Deduct price for installing a roof mounted 5 kW solar photovoltaic facility (in lieu of 10 kW) at the Dane County Highway Garage.
  - 2. Alternate Bid B - Lump Sum.
    - a. Deduct for installing a roof mounted 5 kW solar photovoltaic facility (in lieu of 10 kW) at the Dane County Job Center.
  - 3. Alternate Bid C - Lump Sum.
    - a. Deduct for installing a roof mounted 5 kW solar photovoltaic facility (in lieu of 10 kW) at the Springfield Corners Highway Garage.
  - 4. Alternate Bid D - Lump Sum.
    - a. Add price for installing a solar photovoltaic facility at the Badger Salt Shed, 3650 CTH T, Madison, WI 53718, pole/tracker option.

5. Alternate Bid E - Lump Sum.
  - a. Add price for installing a solar photovoltaic facility at the Landfill Main Garage, 7102 USH 12 & 18, Madison, WI 53718, roof mount option.

#### 1.6 COORDINATION

- A. Coordinate scheduling, submittals, and work of various sections of Specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify utility requirement characteristics of operating equipment are compatible with building utilities.
- C. Coordinate space requirements and installation of electrical work that are indicated diagrammatically on Drawings.

#### 1.7 CUTTING AND PATCHING

- A. Employ a skilled and experienced installer to perform cutting and patching new work; restore work with new Products.
- B. Submit written request in advance of cutting or altering structural or building enclosure elements.
- C. Fit work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- D. Refinish surfaces to match adjacent finishes.

#### 1.8 CONFERENCES

- A. Dane County Department Public Works, Highway & Transportation will schedule a preconstruction conference after Award of Contract for all affected parties.
- B. When required in individual Specification section, convene a pre-installation conference at project site prior to commencing work of the section.

#### 1.9 PROGRESS MEETINGS

- A. Engineer shall schedule and administer meetings throughout progress of the Work at minimum of twice (2) per month
- B. Engineer shall preside at meetings, record minutes, and distribute copies within two (2) days to those affected by decisions made.

#### 1.10 SUBMITTAL PROCEDURES

- A. Submittal form to identify Project, Contractor, Subcontractor or supplier; and pertinent Construction Documents references.

- B. Apply Contractor's stamp, signed or initialed, certifying that review, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with requirements of the Work and Construction Documents.
- C. Identify variations from Construction Documents and Product or system limitations that may be detrimental to successful performance of completing the Work.
- D. Revise and resubmit submittals as required; identify all changes made since previous submittal.

#### 1.11 PROPOSED PRODUCTS LIST

- A. Within fifteen (15) days after date of Award of Contract, submit complete list of major Products proposed for use, with name of manufacturer, trade name, and model number of each Product.

#### 1.12 SHOP DRAWINGS

- A. Submit number of copies that Contractor requires, plus two (2) copies that shall be retained by Public Works Project Engineer and one (1) copy to be retained by the Engineer.

#### 1.13 PRODUCT DATA

- A. Submit number of copies that Contractor requires, plus two (2) copies that shall be retained by Public Works Project Engineer and one (1) copy to be retained by the Engineer.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to this Project.

#### 1.14 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product.
- B. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Public Works Project Engineer's selection.

#### 1.15 MANUFACTURERS' INSTRUCTIONS

- A. When specified in individual Specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.

#### 1.16 MANUFACTURERS' CERTIFICATES

- A. When specified in individual Specification sections, submit manufacturers' certificate to Public Works Project Engineer for review, in quantities specified for Product Data.

- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

#### 1.17 QUALITY ASSURANCE / QUALITY CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply fully with manufacturers' instructions.
- C. Comply with specified standards as minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

#### 1.18 REFERENCES

- A. Conform to reference standard by date of issue current as of date for receiving bids.
- B. Should specified reference standard conflict with Construction Documents, request clarification from Public Works Project Engineer before proceeding.

#### 1.19 INTERIOR ENCLOSURES

- A. Provide temporary partitions as required to separate work areas from Owner occupied areas, to prevent distribution of dust and moisture into Owner occupied areas, and to prevent damage to existing materials and equipment.

#### 1.20 PROTECTION OF INSTALLED WORK

- A. Protect installed work and provide special protection where specified in individual Specification sections.

#### 1.21 PARKING

- A. Limited parking shall be available at each Work site. Arrangements will have to be made with site supervisor at each location.

#### 1.22 STAGING AREAS

- A. Coordinate staging areas with Public Works Project Engineer prior to starting the Work.
- B. On-site space for use as staging areas and storage of materials is will vary by site. Contractor shall be responsible for safety of equipment and materials that are stored on site.

### 1.23 OCCUPANCY DURING CONSTRUCTION AND CONDUCT OF WORK

- A. Areas of existing facility will be occupied during period when the Work is in progress. Work may be done during normal business hours (8:00 am to 4:30 pm), but confer with Owner, schedule work and store materials so as to interfere as little as possible with normal use of premises. Notify Owner when coring or similar noise making work is to be done and obtain Owner's written approval of schedule. If schedule is not convenient for Owner, reschedule and resubmit new times for Owner approval. Coring of floor along with other noisy work may have to be done on second and third shifts.
- B. Work shall be done and temporary facilities furnished so as not to interfere with access to any occupied area and so as to cause least possible interference with normal operation of facility or any essential service thereof.
- C. Contractor shall, at all times, provide approved, safe walkways and facility entrances for use by Owner, employees and public.
- D. Contractor shall provide adequate protection for all parts of facility, its contents and occupants wherever the Work under this contract is to be performed.
- E. Each Contractor shall arrange with Owner to make necessary alterations, do new work, make connections to all utilities, etc., at such times as will not cause interruption of utility services to facility. Contractor doing this work shall protect, cap, cut off and / or replace and relocate existing pipes, electrical work and other active utilities encountered which may interfere with new construction work.
- F. New work in extension of existing work shall correspond in all respects with that to which it connects or similar existing work unless otherwise indicated or specified.
  - 1. Existing work shall be cut, altered, removed or replaced as necessary for performance of contract obligations.
  - 2. Work remaining in place, damaged or defaced by reason of work done under this contract shall be restored equal to its condition at time of Award of Contract.
  - 3. If removal of work exposes discolored or unfinished surfaces or work out of alignment, such surfaces shall be refinished or materials replaced as necessary to make continuous work uniform and harmonious.

### 1.24 PROTECTION

- A. Contractor shall protect from injury all trees, shrubs, hedges, walks and driveways and pay for any damage to same resulting from insufficient or improper protection.
- B. Guard Light: Contractor shall provide and maintain guard lights at all barricades, railings, obstructions in streets, roads or sidewalks and at all trenches adjacent to public walks or roads.

### 1.25 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

## 1.26 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components specifically identified for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by Construction Documents.

## 1.27 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

- A. Transport, handle, store and protect Products in accordance with manufacturer's instructions.

## 1.28 PRODUCT OPTIONS

- A. Where definite material is specified, it is not intention to discriminate against "equal" product made by another manufacturer. Intention is to set definite standard of material quality. Should bidder choose to bid materials other than those specified, bidder shall submit said materials specifications to Department of Public Works, Highway & Transportation for approval at least seven (7) days prior to Bid Opening.
- B. Products and materials that are not specified, but have been approved for use by Public Works Project Engineer shall be identified in addenda to all bidding contractors.
- C. Requests for material or product substitutions submitted after Bid Opening may be considered. Dane County reserves right to approve or reject substitutions based on Specification requirements and intended use.

## 1.29 SUBSTITUTIONS

- A. Public Works Project Engineer shall consider requests for Substitutions only within fifteen (15) days after date of Public Works Contract.
- B. Document each request with complete data substantiating compliance of proposed Substitution with Construction Documents.
- C. Submit three (3) copies of requests for Substitution for consideration. Limit each request to one (1) proposed Substitution.
- D. Substitutions shall not change contract price established at Bid Opening.

## 1.30 STARTING SYSTEMS

- A. Provide written notification prior to start-up of each equipment item or system.
- B. Ensure that each piece of equipment or system is ready for operation.

- C. Execute start-up under supervision of responsible persons in accordance with manufacturers' instructions.
- D. Submit written report that equipment or system has been properly installed and is functioning correctly.

#### 1.31 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel prior to date of final inspection.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at designated location.
- C. Owner may choose to videotape demonstration session; demonstration and demonstrator shall be to level of satisfaction of Owner.

#### 1.32 CONTRACT CLOSEOUT PROCEDURES

- A. Submit written certification that Construction Documents have been reviewed, the Work has been inspected, and the Work is complete in accordance with Construction Documents and ready for Public Works Project Engineer's inspection.
- B. Submit final Application for Payment identifying total adjusted Contract Sum / Price, previous payments, and amount remaining due.

#### 1.33 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean interior and exterior surfaces exposed to view.
- C. Remove waste and surplus materials, rubbish, and construction facilities from site.

#### 1.34 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

#### 1.35 OPERATION AND MAINTENANCE DATA

- A. Provide operation and maintenance data for all mechanical and electrical equipment supplied and installed in project.

#### 1.36 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.



B. Deliver to the Work site and place in location as directed.

#### 1.37 RECORD DRAWINGS AND SPECIFICATIONS

A. Contractor-produced Drawings and Specifications shall remain property of Contractor whether Project for which they are made is executed or not. Contractor shall furnish Public Works Project Engineer with original tracings of drawings and prints of specifications in reproducible format, one set of Drawings and Specifications and one set of record drawings in AutoCAD 2007 (or lower), manually drafted format and entire record specification in Word 2000 (or lower) format on CD.

#### PART 2 PRODUCTS

Not Used.

#### PART 3 EXECUTION

Not Used.

END OF SECTION

## Construction and Demolition Waste Management Appendix

### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. This section specifies administrative and procedural requirements for the evaluation of recycling operations.

### 1.3 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, sealant (caulk), or the like.
- B. Construction Waste: Used as an umbrella term in the construction waste management specifications and evaluation tools to encompass construction waste, demolition waste and remodeling waste.
- C. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- D. Construction Waste Management Plan: A project-related plan for the collection, transportation, and disposal of waste generated at the construction site. The purpose of the plan is to reduce the amount of material being landfilled.
- E. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitability, corrosiveness, toxicity or reactivity.
- F. Landfill Tipping Fees: Monies paid for burying non-recyclable waste in the landfills.
- G. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitability, corrosiveness, toxicity, or reactivity.
- H. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- I. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse.
- J. Recycle: To remove a waste material from the Project site to another site for remanufacture into a new product for reuse.
- K. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- L. Return: To give back reusable items or unused products to vendors for credit.
- M. Reuse: To reuse a construction waste material in some manner on the Project site.
- N. Scrap Revenue: Monies received by the hauler for recyclable materials.
- O. Sediment: Soil and other debris that has been eroded and transported by storm, or well production runoff water.
- P. Trash: A product or material unable to be reused, returned, recycled, or salvaged.
- Q. Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through out-gassing: Solvents in paints and other coatings, wood preservatives, strippers and household cleaners, adhesives in particleboard, fiberboard, and some plywoods, and foam insulation. When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.
- R. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

## 1.4 RECYCLING SERVICES AND EQUIPMENT

### A. Recycling Service Options

1. Identify businesses that provide recycling services, determine which recycling services hauler(s) can provide, and identify other organizations that provide recycling or waste reduction services, such as education and documentation.
2. Option No. 1: Hire A Full-Service Recycling Contractor
  - a. Many or all source-separation and collection tasks are subcontracted to a recycling contractor. These contractors can provide training and on-site sorting services. Seek out the best service and the best fees (or prices) for materials targeted for recycling.
3. Option No. 2: Use A Hauler's Recycling Service
  - a. A hauler may offer recycling services. These services will generally be less complete than those of a full-service recycling contractor, but may be sufficient if the Contractor's own personnel can perform tasks the waste hauler does not. If the waste hauler does not provide re-sorting services or training to prevent future mis-sorting, establish an in-house training program to prevent mis-sorting. Mis-sorted materials will be treated as waste by the hauler, and recycling savings will be lost.
  - b. Ensure that the recycling goals are indicated in the Agreement made with the waste hauler. The Agreement shall include a list of materials intended to be recycled, the recycling markets to be used, the landfill that will be used for construction waste, acceptable contamination levels, a rate schedule, amount of time needed to respond to calls for pickup, and a requirement for monthly reports of quantities collected by volume and weight of each material, charges/revenues, and markets.
4. Option No. 3: Operate An In-House Recycling Program
  - a. The Contractor shall be responsible for source-separation, collection, and the ordering of drop-offs and pick-ups. This option employs waste haulers that provide direct recycling services of certain recyclables and may include pick-up. Their services, fees, and/or rebates may vary depending on the material involved and other applicable factors. Other recycling services may be negotiated with the hauler.
5. Recycling by Major Subcontractors
  - a. Major Subcontractors, (e.g., Mechanical and Electrical Subcontractors), may assume responsibility for their respective recycling and waste reduction programs, including but not limited to source separating, maintaining bins, and arranging drop-offs and pick-ups. These major Subcontractors may participate in any of the options listed above.
  - b. Subcontractors who do their own recycling shall report applicable recycling/waste amounts to the General Contractor monthly. The General Contractor shall be responsible for tabulating quantities and submitting the results to the Owner and Architect at **[Substantial]** **[Final]** Completion of the Project.

### B. Required Services and Equipment

1. Provide services and equipment necessary for successful recycling including the following, without limitation:
  - a. Materials sorting.
  - b. Bins.
  - c. Signs.
  - d. Education and training.
  - e. Monitoring.
  - f. Pick-ups.
  - g. Documentation.
2. If an in-house recycling program using a waste hauler is used, identify materials intended to be recycled off-site and document all recycling accomplished.

## 1.5 APPLICATIONS FOR RECYCLED MATERIALS

- A. Reuse and Recycling Information: Agencies having information regarding applications and destinations for reuse and recycling construction and demolition waste materials include the following:
1. Construction Material Recycling Association. <http://www.cdrecycling.org>.
  2. Dane County Dept. of Public Works. <http://www.co.dane.wi.us/pubworks/recyc/markets.htm>.
  3. Habitat for Humanity. <http://www.restoredane.org>.
  4. Solid & Hazardous Waste Education Center, UW Extension. <http://www.uwex.edu/shwec>.
  5. WasteCap Wisconsin, Inc. [www.wastecapwi.org](http://www.wastecapwi.org).
  6. Wisconsin Department of Natural Resources, <http://www.dnr.state.wi.us/org/aw/wm/condemo/index.htm>
- B. Examples of materials and potential applications for recyclable materials include the following, without limitation:
1. Aluminum Cans, Straps, and Sheet: Recycle as a metal.
  2. Asphalt: Break up and transport asphalt-to-asphalt recycling facility or recycle on site.
  3. Brick: Can be reused if whole, crushed for use as landscape cover, sub-base material, or fill.
  4. Building Components And Fixtures: Windows, doors, cabinets, hardware, plumbing and electrical fixtures may be salvaged. Porcelain plumbing fixtures may be crushed for fill.
  5. Carpet and Carpet Pad: Store clean, dry carpet and pad in a closed container or trailer. Carpet may be able to be reused or recycled if sufficient quantities are generated.
  6. Ceiling Panels: If sufficient quantities are generated, sort by size, palletize, and shrink-wrap for shipment to and recycling by a ceiling tile manufacturer.
  7. Concrete: Can be crushed and graded for use as riprap, aggregate, sub-base material, or fill. Neutralize alkalinity if planting above. Remove reinforcement and other metals from concrete and sort with other metals.
  8. Concrete Block: Can be reused if whole, crushed for use as sub-base material or fill.
  9. Copper Pipe and Accessories: Recycle as a metal.
  10. Corrugated Cardboard and Paper: Separate for recycling into new paper products. Painted, waxed or muddy cardboard or paper is unsuitable for recycling and should be discarded.
  11. Dimensional Lumber, Oriented Strand Board, Plywood, Crates, and Pallets: Sort larger pieces for reuse. Wood unsuitable for reuse may be used to manufacture particleboard and other composite wood products. Chip or shred wood for use as animal bedding, landscape use, groundcover, mulch, compost, pulp, or process fuel. Do not chip or shred stained, painted or treated wood. Some recyclers have equipment to remove nails.
  12. Doors and Hardware: If separated for reuse, brace open end of door frames. Except for removing door closers, leave door hardware attached to doors.
  13. Glass Containers: Recycle as glass.
  14. Gypsum Board: Gypsum wallboard to be processed and land spread must be new and clean construction scrap free of tape, joint compounds, paint, nails, screws, or other contaminants. Only regular ½” drywall, Type X drywall, and Plaster Base (standard blue board) may be used for a soil amendment. The following paper-faced gypsum panel can not be used as a soil amendment: WR (Green Board), Sheathing (Brown/Black Board), Mold Resistant Panels or Specialty Type X. These contain additives which may not be suitable as a soil amendment.
  15. Land Clearing Debris: Can be chipped or shredded for use as ground cover, mulch, compost, pulp, or process fuel.
  16. Lighting Fixtures: Separate lamps by type and protect from breakage. Fluorescent tubes must be recycled by law.

17. Miscellaneous Ferrous and Nonferrous Metals: Separate for recycling: banding, stud cut-offs, ceiling grid, ductwork, conduit, rebar, roofing, pipe, sheet metals, extruded metals, castings, miscellaneous steel shapes, and other metal parts.
18. Piping: If separated for reuse, reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinkler heads, and other components by type and size.
19. Precast Concrete Panels: May be able to be crushed and used for erosion control or landscape features.
20. Sheet Metal Scrap and Metal Duct Accessories: Recycle as a metal.
21. Structural Steel: Can be used in the manufacture of structural steel.
22. Vinyl: Siding, window extrusions, floor tiles, and sheet flooring may be able to be separated for recycling into new vinyl products.

**END OF APPENDIX**

**SECTION 01 74 19**  
**CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**  
BASED ON DSF MASTER SPECIFICATION DATED 12/11/2007

**INDEX:**

**Part 1 - General**

- Description
- Related Documents
- Preconstruction and Prebid Meetings
- Recycling Goal
- Submittals
- Construction Waste Management Plan

**Part 2 - Products**

(Not Applicable)

**Part 3 - Execution**

Construction Waste Management Plan Implementation

**PART 1 - GENERAL**

**DESCRIPTION**

Applicable provisions of Division 01 shall govern all work under this Section.

This Section specifies requirements for salvaging, recycling and disposing of construction waste.

**RELATED DOCUMENTS**

The following related resource documents are available:

1. Recycling Evaluation Tools
2. Construction Waste Management Appendix

**PRECONSTRUCTION AND PREBID MEETINGS**

The Pre-bid Conference (if conducted) and Preconstruction Conference will include discussion of construction waste management requirements. Prior to the commencement of the Work, the Lead Contractor should schedule and conduct a meeting with Dane County and the Architect to discuss the proposed Construction Waste Management Plan to develop a mutual understanding regarding details of construction waste management implementation.

**WASTE MANAGEMENT GOALS**

The recycling goal (including reuse) to be achieved at Substantial Completion of the Project shall be at least [70 percent] by weight or volume of total waste generated by the Project and includes reuse.

**Reduce:** The Project shall generate the least amount of waste and methods shall be used that minimize waste due to error, poor planning, breakage, mishandling, contamination, or similar factors. Promote the resourceful use of materials to the greatest extent possible.

**Reuse:** All Contractors and Subcontractors shall reuse materials to the greatest extent possible. Salvage reusable materials for resale, for reuse on this Project, or for storage for use on future projects. Return reusable items (e.g., pallets or unused products) to the material suppliers.

**Recycle:** As many of the waste materials not able to be eliminated in the first place or salvaged for reuse shall be recycled. Waste disposal in landfills shall be minimized to greatest extent possible.

## SUBMITTALS

**Construction Waste Management Plan:** Prior to commencing demolition or construction activities, the Lead Contractor, with input from all Prime & Subcontractors, shall develop and submit a Construction Waste Management Plan to Dane County for approval within 15 working days after Contract award or prior to any waste removal. The construction waste management plan can be generated by WasteCapTRACE based on information entered by the Lead Contractor.

**Summary of Waste Progress Reports:** Throughout the duration of the Project, the Lead Contractor shall report to Dane County with their periodic Applications for Payment a Summary of Waste including the quantity of each material recycled, reused, or salvaged, the receiving party, and the applicable diversion rates. This reporting shall take place using WasteCapTRACE, an on-line documentation system. There is a fee, to be included in the bid, of .02 cents per gross square foot of the project for use of WasteCapTRACE. Lead Contractor and Prime Contractors shall maintain a record of related weight tickets, manifests, receipts, and invoices for review by Dane County on request.

**Summary of Waste Final Documentation:** At Substantial Completion of the Project, the Lead Contractor shall submit a final summary of reuse and recycling results for all Prime & Subcontractors, including the quantity of each material recycled, reused, or salvaged, the receiving party and the applicable diversion rates. The final report will be generated by WasteCapTRACE based on information entered throughout the project by the Lead Contractor.

## CONSTRUCTION WASTE MANAGEMENT PLAN

The purpose of the Construction Waste Management Plan is to achieve successful reuse and recycling with the highest possible reuse and recycling rates. The Plan shall include the following:

A schedule identifying milestones and key reporting dates of Construction Waste Management.

A list of waste materials expected to be generated from the Project as debris.

A list of each material proposed to be salvaged, reused, recycled and discarded. Identify applicable markets for reuse and/or recycling. At a minimum, all materials required by State law to be recycled shall be recycled (e.g., cardboard, cans, bottles, office paper, fluorescent tubes, refrigerants, mercury, etc.) and scrap metal shall be recycled.

Separation and Materials Handling Procedures: Description of how waste materials identified above will be separated, cleaned (if necessary) and protected from contamination.

Educational and Motivational Procedures: Meetings to be held and other proposed methods for educating construction personnel regarding waste reduction and recycling.

Waste Auditing Procedures: Methods of monitoring and enforcing the Plan.

Documentation Procedures: Methods of documenting materials leaving the Project site as waste, for reuse or recycling to allow Summary of Waste Progress Reports to be submitted with Applications for Payment.

The Lead Contractor shall distribute copies of the Construction Waste Management Plan to Dane County's Project Manager & Project Representative, each Prime Contractor, and the Architect.

## **PART 2 – PRODUCTS (Not Applicable)**

## **PART 3 – EXECUTION**

### **CONSTRUCTION WASTE MANAGEMENT PLAN IMPLEMENTATION**

The Lead Contractor shall be responsible for coordinating the separation, handling, recycling, salvage, reuse, and return methods to be used by all construction personnel. The Lead Contractor shall be responsible for reporting the results of the Construction Waste Management Plan. The Lead Contractor shall designate a “Waste Manager” who is responsible for instructing construction personnel and overseeing and documenting results of the Construction Waste Management Plan.

**Instruction:** The Lead Contractor shall provide on-site instruction regarding appropriate separation, handling, recycling, salvage, reuse, and return methods to be used by all construction personnel throughout the duration of the Project.

**Separation Facilities:** The Lead Contractor shall lay out and identify a specific area on the Project site for separating materials for recycling, salvage, reuse, and return. The Lead Contractor shall provide waste bins and shall keep these bins & the recycling area neat, clean and clearly marked to avoid contamination of materials.

**Sorting:** The following sorting methods are acceptable:

Sorting recyclable materials at the Project site and transporting them to recycling markets directly from the Project site.

Employing haulers who make use of a materials-recovery facility or a transfer station where recyclable materials are sorted from the waste and recycled before disposing of the remainder. If using a hauler or recycling facility to sort out recyclables, verify that the hauler sorts out all construction waste loads and is not limited to those that are not acceptable at the landfill. Also, verify that the hauler or recycling facility recycles at least three types of materials.

**Hazardous Waste:** Hazardous waste shall be disposed of according to General Requirements Article 31 “Cleaning and Waste Disposal.” (Hazardous Waste is a separate category and not part of the basis on which the recycling percentage is calculated.)

**Application for Payments:** The Contractor shall submit the Summary of Waste with the Applications for Payment according to a schedule outlined in the Construction Waste Management Plan approved by Dane County. Failure to submit this information shall render the Application for Payment null and void, thereby delaying the Progress Payment.

The following resources are provided for information only, to aid the Contractor in managing the Project’s construction waste:

The Wisconsin DNR, Bureau of Waste Management

<http://www.dnr.state.wi.us/org/aw/wm/>

The UW-Extension’s Solid and Hazardous Waste Education Center

<http://www1.uwex.edu/ces/shwec/>, email [shwec@uwm.edu](mailto:shwec@uwm.edu) or telephone: 608-262-0385.

WasteCap Resource Solutions, Inc.

<http://www.wastecap.org> or telephone: 414-961-1100 or 608-245-1100.

\* \* \*



## **Recycling Evaluation Tools**

### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 1 Specification Sections, apply to this Section.

### 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for the evaluation of recycling operations.

### 1.3 CONSTRUCTION OR DEMOLITION WASTE MANAGEMENT PLAN FORM

- A. The purpose of the Construction Waste Management Plan Form is to identify construction waste reduction goals, identify targeted materials, and explain specific waste reduction actions to be taken, by whom, and when.

### 1.4 SITE MONITORING FORM

The most effective construction waste management programs include methods for providing feedback on how successful the program has worked. Tracking project costs may indicate whether money is being saved, but may not indicate why money is being saved. Furthermore, it cannot indicate whether the savings are the maximum possible. Waste audits, on the other hand, reveal opportunities for increased savings, such as significant amounts of recyclables ending up in waste bins, or non-recyclables ending up in bins designated for recyclables. Waste audits provide feedback throughout the duration of the Project.

- A. Allows the Contractor to quantify the amount of recyclables being discarded and to identify missed opportunities.
- B. Guides the Contractor through the removal and sorting process of materials.
- C. Provides a listing of potential categories of materials for sorting the waste dumpster.
- D. A photographic record taken during a waste audit of recyclables found in the waste dumpster can be very effective.
- E. Requires the Contractor to identify major subcontractors on site contributing to the waste stream.
- F. Takes approximately 15 minutes to fill out.
- G. Should be used weekly, or at a minimum, during major shifts in construction activities.
- H. Identifies specific items that may be hindering the recycling program and can be addressed for immediate results.
- I. Creates a record over time to show improvements in sorting or identifies phases of the Project that need extra attention.

### 1.5 MONITORING RESULTS

Waste audit results indicate whether a change in the Construction Waste Management Plan is necessary. An audit may indicate that more of a particular material waste is being generated than originally anticipated. If so, the material should be targeted for the remainder of the Project. The waste audit serves as a reminder to seek new recycling options that have become available since the commencement of the Project.

## Construction or Demolition Waste Management Plan Form

Project Name: \_\_\_\_\_

Contractor: \_\_\_\_\_

Construction Waste Management Plan Manager (Contractor's Representative):

\_\_\_\_\_

Project Location: \_\_\_\_\_

Estimated Construction Dates: \_\_\_\_\_

PROJECT SCOPE - indicate type of structure (e.g., steel, concrete, etc.), building size, project cost, space constraints, etc.

RECYCLING GOAL - To recycle \_\_\_\_\_ % of waste generated on the site by weight. (Minimum goal 50%)

### Goals and Intent:

**Reduce:** The Project shall generate the least amount of waste and methods shall be used that minimize waste due to error, poor planning, breakage, mishandling, contamination, or similar factors. Promote the resourceful use of materials to the greatest extent possible.

**Reuse:** The Contractor and Subcontractors shall reuse materials to the greatest extent possible. Reuse includes the following:

1. Salvage reusable materials for resale, for reuse on this Project, or for storage for use on future projects.
2. Return reusable items (e.g., pallets or unused products) to the material suppliers.

**Recycle:** As many of the waste materials not able to be eliminated in the first place or salvaged for reuse shall be recycled. Waste disposal in landfills shall be minimized to greatest extent possible.

### ANALYSIS OF ESTIMATED CONSTRUCTION WASTE TO BE GENERATED

#### A. Projected waste materials

- Asphalt
- Brick
- Cans and bottles
- Cardboard
- Carpet
- Carpet pad
- Ceiling tile scrap
- Concrete
- Glass
- Gypsum board
- Insulation scrap
- Land clearing wood
- Metal – wire, pipe cutoffs, etc.
- Pallets
- Paper
- Plastics including stretch wrap, plastic bags and Styrofoam
- Untreated wood, plywood, OSB, particleboard
- Structural steel
- Vinyl
- Other (specify) \_\_\_\_\_

- B. Produce a preliminary list of materials that may be targeted for reuse or recycling (based on size and type of construction and other relevant information). Complete the list based on the availability of recycling and waste reduction services and on feedback from key Subcontractors who will be working on the Project. Focus recycling efforts on high potential materials and practices. Select materials that are generated in greatest volume, that have the most market value, that can be easily separated and that are recycled locally.
  
- C. Estimated quantities of waste materials, by type (use Project estimates or commercial construction weight estimates below, compiled by WasteCap Wisconsin based on WI State Averages and commercial construction projects. Actual percentages will vary based on the project and type of construction.)

Material	Estimated % (by weight)	Estimated Tons
Total Estimated		
Trash (25%)		
Cans & Bottles (2%)		
Cardboard (5%)		
Concrete/masonry (21%)		
Drywall (11%)		
Metal (11%)		
Wood (25%)		
Reuse (0%)		
Other		
Total (100%)		

**TYPE OF RECYCLING SERVICE PROVIDERS AND TARGETED MATERIALS**  
 (Refer to Construction Waste Management Appendix)  
 Evaluate Cost and Services Offered      Service Provider Agreements in Place

**Company #1** \_\_\_\_\_  
**Company #2** \_\_\_\_\_  
**Company #3** \_\_\_\_\_

Company #	Material	How and where waste is disposed or diverted
	Trash	
	Cans & Bottles	
	Cardboard	
	Concrete/Masonry	
	Scrap Metal	
	Wood	
	Other	
	Other	
	Other	

**MATERIALS-HANDLING PROCEDURES**  
Contractors and Subcontractors will separate and handle materials as stated below.

*Example: Cardboard: Separate and flatten clean cardboard and boxboard and place in designated containers on the Project site. Do not include waxed cardboard, tissue, paper plates or towels, pizza boxes or any item that is not paper. Separate plastic, Styrofoam and other items which may be stuck to the cardboard boxes. Staples may be left in cardboard. Cardboard that is over 50% covered in mud, paint or other contaminants should be disposed of as trash. The cardboard will be sorted, sold and made into new paper products.*

**RECYCLING OPERATIONS**

Action ***	Who
Order dumpsters - oversee delivery _____	
Site dumpsters/collection sites for optimum convenience _____	
Educate Project site personnel on recycling requirements _____	
Order signs for dumpsters and other recycling bins _____	
Sort or process recyclables on site _____	
Take trash and recyclables to the dumpsters _____	
Schedule dumpster pickups/drop offs _____	
Monitor dumpsters for contamination _____	
Document recycling results _____	

\*\*\* Depending on the service option chosen, these may be the responsibility of the field personnel, construction waste manager, the hauler, a recycling contractor, or the Subcontractors.

**EDUCATIONAL AND MOTIVATIONAL PLAN – Check all items intended to be used**

Actions

- Complete Construction Waste Management Plan
- Hold Orientation/Kick Off Meeting
- Update & Progress in Weekly Project-Site Meetings
- Encourage Just-in-time deliveries
- Post Targeted Materials (signage)
- Distribute tip sheets to Project-site personnel
- Post goals/progress (signage)
- Use formal agreements committing subs to program
- Require those who contaminate dumpsters to re-sort
- Provide stickers, t-shirts, hats or other incentives
- Public recognition of participating subs
- Take photos to document progress and share
- At site visits, discuss waste management with Project-site personnel
- Conduct periodic presentations for Project-site personnel on waste issues
- \_\_\_\_\_

**WASTE AUDITING PROCEDURES – Describe how the recycling program will be monitored so that recycling and trash containers are kept free of contamination. Include frequency of monitoring**

**DOCUMENTATION PROCEDURES**

- |   |     |
|---|-----|
|   | Who |
| <input type="checkbox"/> Perform monthly cost and materials tracking (required) _____ |     |
| <input type="checkbox"/> Perform final evaluation (required) _____                    |     |

### Site Waste and Recyclables Monitoring Form

Project Name: \_\_\_\_\_

Date/Time: \_\_\_\_\_

Monitor Name: \_\_\_\_\_

- 1. Are all containers (trash and recycling) together in one area?     Yes     No
- 2. Do all containers have clear signs for the materials that belong in them?     Yes     No
- 3. Are the signs clearly visible to workers who approach them?     Yes     No
- 4. Is there easy access to all containers? (Is there anything in the way?)     Yes     No  
(If "No," describe measures to be taken to eliminate the obstructions)
- 5. Is the dumpster area dry and firm?     Yes     No
- 6. Is the dumpster area (check one):
  - Neat and tidy
  - Somewhat messy
  - Dirty (needs to be cleaned)

Comment: \_\_\_\_\_

7. Check individual dumpsters

**TRASH**

Contamination (Check all applicable items)

- |  |                                    |
|--|------------------------------------|
| <input type="checkbox"/> Auto batteries  | <input type="checkbox"/> Paper     |
| <input type="checkbox"/> Cans or bottles | <input type="checkbox"/> Tires     |
| <input type="checkbox"/> Cardboard       | <input type="checkbox"/> Waste Oil |
| <input type="checkbox"/> Concrete        | <input type="checkbox"/> Wood      |
| <input type="checkbox"/> Metal           |                                    |
| <input type="checkbox"/> Other _____     |                                    |

Comments: \_\_\_\_\_  
\_\_\_\_\_

**CARDBOARD**

Contamination (Check all applicable items)

- |  |  |
|--|--|
| <input type="checkbox"/> Muddy or painted cardboard                          | <input type="checkbox"/> Boxes with trash or sweepings in them |
| <input type="checkbox"/> Oily cardboard                                      | <input type="checkbox"/> Beverage containers                   |
| <input type="checkbox"/> Pizza boxes or other food containers                | <input type="checkbox"/> Metal                                 |
| <input type="checkbox"/> Waxed cardboard                                     | <input type="checkbox"/> Plastic                               |
| <input type="checkbox"/> Mortar and cement bags                              | <input type="checkbox"/> Wood                                  |
| <input type="checkbox"/> Boxes with plastic, wood, or other packing material | <input type="checkbox"/> Trash                                 |
| <input type="checkbox"/> Other _____   |  |

Does this container require cleaning?     Yes     No  
(Note: Small amounts – up to 5% -- of these materials are acceptable)

Comments:

---

**CONCRETE**

Contamination (Check all applicable items)

- Dirt
- Organic materials (brush, grass, etc.)
- Wire mesh
- Other \_\_\_\_\_

Does this container require cleaning?       Yes     No

Comments:

---

**METAL**

Contamination (Check all applicable items)

- |  |   |
|--|---|
| <input type="checkbox"/> Loose welding rods            | <input type="checkbox"/> Aerosol cans                         |
| <input type="checkbox"/> Aluminum cans                 | <input type="checkbox"/> Batteries (any kind)                 |
| <input type="checkbox"/> Electrical ballast            | <input type="checkbox"/> Freon bottles (or other gas bottles) |
| <input type="checkbox"/> Electrical capacitors         | <input type="checkbox"/> Lead                                 |
| <input type="checkbox"/> Insulated electric wire       | <input type="checkbox"/> Barrels and drums                    |
| <input type="checkbox"/> Metal painted with lead paint | <input type="checkbox"/> Oil cans and filters                 |
| <input type="checkbox"/> Glass                         | <input type="checkbox"/> Paint cans                           |
| <input type="checkbox"/> Light bulbs                   | <input type="checkbox"/> Closed containers of any kind        |
| <input type="checkbox"/> Other _____                   |   |

Does this container require cleaning?       Yes     No

Comments:

---

**GYPSUM BOARD**

Contamination (Check all applicable items)

- Painted gypsum board
- Cement board
- Moisture-resistant gypsum board (green board)
- Reinforced-type gypsum boards
- Other specialty gypsum board(s)
- Corner bead (or other metal strips)
- Nails, screws or other metal fasteners
- Does this container require cleaning?       Yes     No

Comments:

---

**WOOD**

Contamination: (Check all applicable items)

Very small amounts (about 2% or less) of the following materials are acceptable in the wood containers. Document their presence in writing.

- Cardboard
- Paper or paper cups
- Other \_\_\_\_\_

The following items, if present in the wood container, require immediate removal. Notify the Lead Contractor's representative.

- Treated lumber
- Painted or varnished lumber
- Metal strapping
- Reinforcing rod
- Pallets or wooden spools with bolts and fasteners 1/4-inch or larger
- Truss plates
- Any metal other than nails and staples
- Glass bottles

Try to determine where the contaminants came from and how they got in the dumpster. Possible source of contamination:

\_\_\_\_\_

Does this container require cleaning?       Yes     No

Comments:

\_\_\_\_\_

**OTHER**

Material being recycled: \_\_\_\_\_

Contamination (List contaminants) \_\_\_\_\_

Does this container require cleaning?       Yes     No

Comments:

\_\_\_\_\_

**8. Mark the areas that need attention to help meet the Project's recycling goals:**

- Lack of space to place containers
- Subcontractors not knowledgeable of recycling requirements
- Subcontractors not cooperative
- Recycling bins are not provided
- Recycling markets are not available
- Dumpsters are not in fenced area
- Other \_\_\_\_\_

# Final Construction Waste Management Plan Form

Project Name: \_\_\_\_\_  
 Plan Manager: \_\_\_\_\_  
 Representing: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Date: \_\_\_\_\_

### Construction Waste Reduction Goals

To evaluate the quantitative success of your program summarize the data on your monthly tracking form, measured against goals set in your Construction Waste Management Plan.

Percent Reduction Goal: \_\_\_\_\_ Actual Percent Reduction: \_\_\_\_\_

Cost Savings Goal: \_\_\_\_\_ Actual Cost Savings: \_\_\_\_\_

### Construction Waste Management Program Strengths and Weaknesses

Please evaluate the strengths and weaknesses of each aspect of the Construction Waste Management Plan in the charts below. Space is also provided to list any original ideas implemented and/or suggest improvements to the existing aspects and tools.

#### Methods to Reduce, Reuse and Recycle

Strengths	Weaknesses	Suggested/implemented Improvements
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

#### Communication and Motivation Tools

Strengths	Weaknesses	Suggested/implemented Improvements
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

#### Evaluation Tools

Strengths	Weaknesses	Suggested/implemented Improvements
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____





**Section 26 00 01 - Electrical General Requirements****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. Work Includes:
1. This project involves the installation of solar photovoltaic systems at various sites including a roof mounted, ground mounted and pole mounted panels, inverters and other equipment for connection of each system to the utility's grid and the building's electrical distribution system. A single contractor shall be responsible for the complete installation at all of the sites.
  2. Furnish all labor materials, tools, equipment, and services for all electrical work as indicated, in accord with provisions of Contract Documents.
  3. Completely coordinate with work of all other trades.
  4. Although such work is not specifically called out on drawing, the contractor shall furnish and install all miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
  5. See Division 1 for General Requirements.
  6. This project is funded, in whole or in part, by a federal Energy Efficiency Conservation Block Grant (EECBG) through the American Recovery and Reinvestment Act of 2009 (ARRA). For further information regarding ARRA funded project requirements for Davis-Bacon Wage Rates, Buy American Provisions, and required reporting see the Supplementary Conditions section and ARRA Reporting Requirements section of Procurement and Contracting Requirements of the specification.
  7. This project is eligible for incentive monies from Focus on Energy and Madison Gas and Electric (MG&E). The contractor will be required to apply for all applicable program incentives on behalf of Dane County. See section 48 14 02(A)(7).
- B. Drawings Use and Interpretation:
1. Drawings are diagrammatic and indicate general arrangement of systems and equipment, except when specifically dimensioned or detailed.
  2. For exact locations of building elements, refer to dimensioned architectural/structural drawings.
  3. Field measurements take precedence over dimensioned drawings.
  4. Intention is to show size, capacity, approximate location, direction and general relationship of one work phase to another, but not exact detail or arrangement.
  5. Field verify locations and arrangement of all existing systems and equipment.
  6. Omissions no later than ten (10) days before bid opening, the Contractor shall call the attention of the Architect/Engineer (A/E) to any materials or apparatus the Contractor believes to be inadequate and to any necessary items of work omitted.

7. If any errors or omissions appear in Drawings, Specifications, or other documents, bidding Contractor shall notify Engineer no later than ten (10) days prior to submitting bid. Should conflict occur in or between drawings and specifications, bidding contractor is deemed to have estimated more expensive way of doing work, unless he shall have asked for and obtained written decision (addendum) before submission of bid as to which method or materials will be required.
- C. Installation of all systems and equipment is subject to clarification as indicated in reviewed shop drawings and field coordination drawings.
- D. Dimensions indicated are limiting dimensions.
- E. Do not use equipment exceeding dimensions indicated or equipment or arrangements that reduce required clearances or exceed specified maximum dimensions.
- F. Description of systems: Furnish and install all materials to provide functioning systems in compliance with performance requirements specified, and any modifications required by reviewed shop drawings and field coordinated drawings.

#### **1.02 WEATHERPROOF EQUIPMENT**

- A. Where weatherproof (WP) equipment is indicated, use NEMA 3R enclosures.
1. All exterior devices and equipment shall be weather-proof.

#### **1.03 CORROSIVE ENVIRONMENTS**

- A. In areas noted with corrosive atmosphere; use NEMA 4X reinforced fiberglass watertight enclosures.

#### **1.04 QUALITY ASSURANCE**

- A. Perform all work and install materials and equipment in full accordance with the latest applicable rules, regulations, requirements, and specifications of the following:

State and Federal Laws  
 National Electrical Code (NEC)  
 Life Safety Code (NFPA-101)  
 National Electrical Safety Code (NESC)  
 American National Standards Institute (ANSI)  
 National Electrical Manufacturers Association (NEMA)  
 Institute of Electrical and Electronic Engineers (IEEE)  
 Insulated Power Cable Engineers Association (ICEA)  
 The Occupational Safety and Health Act (OSHA)  
 American Society for Testing and Materials (ASTM)  
 Underwriters' Laboratory (UL)  
 Wisconsin Administrative Code, Chapter E1 (Electrical),  
 Chapter 19 (Illumination)  
 Department of Natural Resources NR-101  
 Local laws, codes and ordinances

- B. Conflicts, if any, that may exist between the above items, the more restrictive shall govern.

#### 1.05 SUBMITTALS

- A. General:
  - 1. The Architect/Engineer's (A/E)'s review of shop drawings or samples shall not relieve the Electrical Contractor (EC) of responsibility for any deviation from the contract documents. The EC shall include with the shop drawings an index sheet detailing all deviations from the contract documents, and will be held responsible for all deviations unless he has received written approval from the A/E for the specific deviation, separate from general shop drawing approval. The A/E's review shall not relieve the EC from responsibility for errors or omissions in the shop drawings or samples.
- B. Shop Drawings:
  - 1. As indicated in each 26 00 00 Section.
  - 2. Provide scale layout of electrical rooms/spaces showing electrical equipment placement and clearances.
- C. Product Data:
  - 1. Product list
  - 2. Submittals indicated in each 26 00 00 Section.
- D. Samples:
  - 1. As indicated in each 26 00 00 Section.
- E. Project Information:
  - 1. As indicated in each 26 00 00 Section.

#### 1.06 PROTECTION

- A. Provide covering and shielding for all equipment to protect from damage.
- B. Repair, restore or replace damaged, corroded and rejected items.

#### 1.07 JOB CONDITIONS

- A. Cause as little interference or interruption of existing utilities and services as possible.
  - 1. Schedule work which will cause interference or interruption in advance with Owner, Architect, authorities having jurisdiction and all affected trades.
- B. Examine Contract Documents to determine how other work will affect execution of electrical work.
- C. Determine and verify locations of all existing utilities on or near site.
- D. Make arrangements for and pay for necessary permits, licenses, and inspections.

- E. Record drawings:
1. Keep a complete set of all electrical drawings in job site office for showing actual installation of electrical systems and equipment.
  2. Use this set of drawings for no other purpose.
  3. Where any material, equipment, or system components are installed differently from that shown, indicate differences clearly and neatly using ink or indelible pencil.
  4. At project completion, submit record set of drawings.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. Acceptable manufacturers:
1. Individual items:
    - a. Base: As noted.
    - b. Optional: As noted.
  2. Other manufacturers desiring approval comply with Instruction to Bidders.
- B. Use only prime quality, new materials, apparatus and equipment.
- C. Use U/L labeled electrical materials where listing has been established for materials or devices in question.
1. Manufactured items and fabricated assemblies of electrically operating equipment: U/L approval or U/L reexamination listing.
- D. Structural steel for supports: ASTM A36.
1. Galvanize members installed in areas of high humidity or condensation.
  2. Furnish other members with shop coat of rust inhibiting primer.
  3. Shop fabricate for field assembly using bolts.
  4. Minimize field welding.
  5. Retouch primer and galvanizing after field welding.

### **2.02 FIRESTOPPING**

- A. Firestop all penetrations of fire rated walls, floors and assemblies.

## **PART 3 - EXECUTION**

### **3.01 GENERAL**

- A. Use only thorough, highly skilled, and experienced workmen.
1. 26 00 00 Section equipment shall be installed in a neat and workmanlike manner.
- B. When changes in location of any work are required, obtain approval of Architect before making change.
1. Make changes at no extra cost.
- C. Do not change indicated sizes without written approval of Architect.

- D. Provide all necessary offsets and crossovers in conduits, raceways, cable trays and ducts.
- E. Install exposed conduits parallel to walls and ceilings and vertically plumb, unless otherwise indicated.
- F. Where electrical items penetrate fire and/or smoke rated walls, ceilings and floors.

### **3.02 INSTALLATION OF EQUIPMENT**

- A. Install all equipment in accord with manufacturer's recommendations.
- B. Provide all necessary anchoring devices and supports.
  - 1. Use structural supports suitable for equipment.
  - 2. Check loadings and dimensions of equipment with shop drawings.
  - 3. Do not cut, or weld to, building structural members.
- C. Verify that equipment will fit support layouts indicated.
  - 1. Where substitute equipment is used, revise indicated supports to fit at no additional cost.

### **3.03 REMODELING**

- A. Do not cut into existing services without first verifying with Owner that service has been correctly identified.
  - 1. Perform work that interrupts any service this include cutting into existing lines for new connection) during premium time to cause least interference to normal operation of building.
  - 2. Inform building engineering staff in advance of any shut off that will occur and give estimate of duration.
  - 3. Begin work only after engineering staff is fully informed and has agreed to schedule of shut offs.

### **3.04 FIELD QUALITY CONTROL**

- A. Perform indicated tests to demonstrate workmanship, operation, and performance.
  - 1. Conduct tests in presence of A/E and, if required, inspectors or agencies having jurisdiction.
  - 2. Arrange date of tests in advance with A/E, manufacturer and installer.
  - 3. Give all inspectors minimum of 24 hours notice.
  - 4. Furnish or arrange for use of electrical energy, steam, water, diesel fuel, or gas required for tests.
  - 5. Furnish all lubricating materials required for test.
  - 6. Provide written report on all tests.
- B. Repair or replace equipment and systems found inoperative or defective and retest.
  - 1. If equipment or system fails retest, replace it with products conforming with Contract Documents.
  - 2. Continue remedial measures and retests until satisfactory results are obtained.

- C. Test equipment and systems as indicated for each item, unless otherwise recommended by manufacturer.

**3.05 FINAL PERFORMANCE TEST**

- A. At completion of installation, test for operation, panel load balance, short circuits, and ground.
  - 1. Provide written report on final performance test.

**3.06 ADJUST AND CLEAN**

- A. Inspect all equipment and put in good working order.
- B. Clean all exposed and concealed items.
- C. Where new work occurs in existing areas where no other work has been done, clean area and restore to original condition.

**3.07 PUTTING SYSTEMS IN OPERATION - START UP**

- A. Prior to final acceptance, at time agreed to by Owner and A/E, put all systems in to satisfactory operation.
- B. Operate all systems in good working order for period of 5 working days.

**3.09 TRAINING**

- A. Electrical Contractor (EC) shall be responsible for owner training as specified in other sections of this specification. See Section 48 14 00, page 4.

\* \* \*

**Section 26 05 19 - Wire and Cable - 600 Volt and Below****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. General:
1. Furnish all labor, materials, tools, equipment, and services for all wire and cable (600 V and below) as indicated, in accord with provisions of Contract Documents.
  2. Completely coordinate with work of all other trades.
  3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
  4. See Section 26 00 01 for General Electrical Requirements.
  5. See Division 1 for General Requirements.

**1.02 WORK INCLUDED**

- A. Building wire and cable.
- B. Control wire and cable.
- C. Underground wire and cable.
- D. Wiring connectors and connections.

**1.03 RELATED SECTIONS**

Section 26 05 33 - Raceways  
Section 26 05 35 - Boxes  
Section 26 05 53 - Identification

**1.04 REFERENCES**

- A. ANSI/NFPA 70- National Electrical Code.

**1.05 SHOP DRAWING SUBMITTALS**

- A. Submit under provisions of General conditions and Section 26 00 01.
- B. Submit product data: Provide for each cable assembly type.
- C. Submit factory test reports: Indicate procedures and values obtained.
- D. Submit manufacturer's installation instructions: Indicate application conditions and limitations of use stipulated by product testing agency specified under Regulatory Requirements.



**1.06 QUALIFICATIONS**

- A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years documented experience.

**1.07 REGULATORY REQUIREMENTS**

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed and classified by Underwriters Laboratories, Inc. or testing firm acceptable to DFD Electrical Section as suitable for purpose specified and shown.

**1.08 PROJECT CONDITIONS**

- A. Verify that field measurements are as shown on Drawings.
- B. Conductor sizes are based on copper.
- C. Wire and cable routing shown on Drawings is approximate unless dimensioned. Route wire and cable as required to meet Project Conditions.
- D. Where wire and cable routing is not shown, and destination only is indicated, determine exact routing and lengths required.

**1.09 COORDINATION**

- A. Coordinate Work under provisions of General conditions and Section 16010.
- B. Determine required separation between cable and other work.
- C. Determine cable routing to avoid interference with other work.

**PART 2 - PRODUCTS****2.01 GENERAL**

- A. All wire shall be new, delivered to the site in unbroken cartons and shall be less than one year old out of manufacturer's stock.
- B. Conductor shall be copper.
- C. Insulation shall have a 600 volt rating and be rated at 90°C.
- D. All conductors must be suitable for the application intended. Conductors #12 and larger must be stranded.
- E. All conductors terminated with crimp type devices must be stranded.

- F. Stranded conductors may only be terminated with UL or ETL Listed type terminations or methods: e.g. stranded conductors may not be wrapped around a terminal screw but must be terminated with a crimp type device if a terminal screw is used or must be terminated in an approved back wired method.

## **2.02 BUILDING WIRE**

- A. Description: Single conductor insulated wire.
- B. Insulation: Type THW, THHN/THWN, XHHW insulation for feeders and branch circuits.

## **2.03 WIRING CONNECTORS**

- A. Split Bolt Connectors: Not acceptable.
- B. Solderless Pressure Connectors: High copper alloy terminal. May be used only for cable termination to equipment pads. Not approved for splicing.
- C. Spring Wire Connectors: Solderless spring type pressure connector with insulating covers for copper wire splices and taps. Use for conductor sizes 10 AWG and smaller.
- D. Mechanical Connectors: Bolted type tin-plated; high conductivity copper alloy; spacer between conductors; belled cable entrances.
- E. Compression (crimp) Connectors: Long barrel; seamless, tin-plated electrolytic copper tubing; internally beveled barrel ends. Connector shall be clearly marked with the wire size and typed and proper number and location of crimps.

## **PART 3 - EXECUTION**

### **3.01 GENERAL WIRING METHODS**

- A. All wire and cable shall be installed in conduit.
- B. Do not use wire smaller than 12 AWG for power circuits.
- C. All conductors shall be sized to prevent excessive voltage drop at rated circuit ampacity. As a minimum use 10 AWG conductor for 20 ampere, 120 volt branch circuit home runs longer than 100 feet, and for 20 ampere, 277 volt branch circuit home runs longer than 200 feet.
- D. Make conductor lengths for parallel conductors equal.
- E. Splice only in junction or outlet boxes.

### **3.02 WIRING INSTALLATION IN RACEWAYS**

- A. Pull all conductors into a raceway at the same time. Use Listed wire pulling lubricant for pulling 4 AWG and larger wires and for other conditions when necessary.

- B. Install wire in raceway after interior of building has been physically protected from the weather and all mechanical work likely to injure conductors has been completed.
- C. Completely and thoroughly swab raceway system before installing conductors.
- D. Place all conductors of a given circuit (this includes phase wires, neutral (if any), and ground conductor) in the same raceway. If parallel phase and/or neutral wires are used, then place an equal number of phase and neutral conductors in same raceway or cable.

### **3.03 WIRING CONNECTIONS AND TERMINATIONS**

- A. Splice only in accessible junction boxes.
- B. Wire splices and taps shall be made firm, and adequate to carry the full current rating of the respective wire without soldering and without perceptible temperature rise.
- C. Use solderless spring type pressure connectors with insulating cover for wire splices and taps, 10 AWG and smaller.
- D. Use mechanical or compression connectors for wire splices and taps, 8 AWG and larger. Tape uninsulated conductors and connectors with electrical tape to 150 percent of the insulation value of conductor.
- E. Thoroughly clean wires before installing lugs and connectors.
- F. At all splices and terminations, leave tails long enough to cut splice out and completely resplice.

### **3.04 FIELD QUALITY CONTROL**

- A. Feeders and branch circuits shall have their insulation tested after installation and before connection to utilization devices such as fixtures, motors, or appliances.
- B. Test shall be performed by meggar and conductors shall test free from short-circuits and grounds.
- C. Test conductors phase-to-phase and phase-to-ground.
- D. The contractor shall furnish the instruments, materials, and labor for these tests.

### **3.05 WIRE AND CABLE INSTALLATION SCHEDULE**

- A. Interior Locations: Building and control wire in raceways.
- B. Above Accessible Ceiling: Building and control wire in raceways.
- C. Exterior Locations: Building and control wire rated 90°C in raceways.

- D. High Temperature Areas: Building wire rated 90°C in raceways.

### 3.06 WIRE COLOR

- A. General:
  - 1. For wire sizes 10 AWG and smaller - Wire shall be colored as indicated below.
  - 2. For wire sizes 8 AWG and larger - Identify wire with colored tape at all terminals, splices and boxes. Colors to be as indicated below.
  - 3. In existing facilities, use existing color scheme.
  - 4. In new facilities, use black and red for single phase circuits at 120/240 volts, use black, red and blue for circuits at 120/208 volts single or three phase, and use orange, brown and yellow for circuits at 277/480 volts single or three phase.
- B. Neutral Conductors: White. Where there are two or more neutrals in one conduit, each shall be individually identified with the proper circuit. See requirements of NEC 200-6, 200-7, 210-4, and 310-12.
- C. Branch Circuit Conductors: Three or four wire home runs shall have each phase uniquely color coded.
- D. Feeder Circuit Conductors: Each phase shall be uniquely color coded.
- E. Ground Conductors: Green for 6 AWG and smaller. For 4 AWG and larger, identify with green tape at both ends and all visible points including in all junction boxes. See requirements of NEC 210-5 and 310-12.

### 3.08 BRANCH CIRCUITS

- A. In general, the use of multiwire branch circuits with a common neutral feeding loads producing a high level of harmonics is discouraged due to the problems with overheating of the common neutral.
- B. Therefore, if multiwire branch circuits used for loads producing harmonics (such as fluorescent lighting, and computer receptacles) then the neutral shall be sized two times phase conductor overcurrent protection.

\* \* \*

**Section 26 05 33 - Raceways****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. Work Includes:
1. Furnish all labor, materials, tools, equipment and services for all raceways as indicated, in accord with provisions of Contract Documents.
  2. Completely coordinate with work of all other trades.
  3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
  4. See Section 26 00 01 for General Electrical Requirements.
  5. See Division 1 for General Requirements.

**1.02 WORK INCLUDED**

- A. Rigid metal conduit.
- B. Electrical metallic tubing.
- C. Liquidtight flexible metal conduit.
- D. Rigid nonmetallic conduit and fittings.

**1.03 RELATED WORK**

Section 26 00 01 - Cutting and Patching  
Section 26 05 35 - Boxes  
Section 26 05 53 - Electrical Identification  
Section 07270 - Fire Stopping

**1.04 QUALITY ASSURANCE**

- A. National Electrical Contractors Association (NECA)
1. NECA - Standard of Installation
- B. National Electrical Code (NEC)
1. Including State of Wisconsin and local supplements.

**PART 2 - PRODUCTS****2.01 GALVANIZED RIGID AND INTERMEDIATE METAL CONDUIT**

- A. Manufactured lengths, full weight, heavy wall, rigid steel conduit, protected inside and out by hot-dipped galvanized or electro-galvanized coating.
- B. Minimum conduit size shall be 3/4 inch.

**2.02 ELECTRICAL METALLIC TUBING (EMT)**

- A. Standard lengths and size.

- B. Minimum conduit size shall be 3/4 inch.

### **2.03 LIQUID-TIGHT FLEXIBLE CONDUIT**

- A. Galvanized flexible steel.
- B. Standard conduit sizes.
- C. Heavy wall PVC jacket.

### **2.04 POLYVINYL CHLORIDE CONDUIT (PVC)**

### **2.05 ELECTRICAL METALLIC TUBING (EMT) AND FITTINGS**

- A. EMT: Steel, galvanized tubing.
- B. Fittings and conduit Bodies: All steel, compression gland, water tight, concrete tight, insulated throat type. No set screw, push-on or indenter types permitted.

### **2.06 SUPPORTS, SLEEVES AND SEALS**

- A. Conduit Hangers - General: Threaded rods, with straps or clamp conduit holder.
  - 1. Do not use perforated strap hangers or wire.
  - 2. Use trapeze assemblies for multiple conduits.
    - a. Trapeze assembly to consist of threaded rod hangers, Unistrut P1000 strut and Caddy SCH conduit clips.
  - 3. Provide sufficient hangers for support of electrical work and equipment to limit load on single hanger to 25 LB, max.; space not over 8 FT off.
  - 4. Hangers in metal roof deck: Do not extend above tops of ribs, or otherwise interfere with vapor barrier, insulation or roofing.
- B. Hangers for joint between precast units: Fehr Bros., T-Hanger; Heckman Building Prod., No. 480; and Dayton Sure-Grip, F-68.
  - 1. Space minimum 4 IN from walls and minimum 2 IN apart.
- C. Hanger fasteners: Provide inserts or fasteners to attach hangers to structure.
  - 1. Do not use drilled or explosive driven inserts in precast-prestressed concrete construction.
  - 2. Drilled or explosive driven inserts may not extend more than 1 IN into post-tensioned concrete construction.
  - 3. Attachment to metal roof deck may be by means of prepunched tabs, prepunched holes, or with screws in sides of ribs or toggle bolts in bottom of ribs.
  - 4. Do not use concrete nails in masonry walls.
- D. Support for conduit in GWB walls:
  - 1. Vertical support:
    - a. If conduit is to be fastened to wall stud, provide conduit support clip mounted to stud.
    - b. If conduit is to be supported between studs provide bar hanger and bar hanger conduit clips.

2. Horizontal support:
    - a. Provide conduit clips to secure conduit to studs when passing through studs horizontally.
    - b. Space clips as indicated for support.
  3. Do not use wire as means of anchor or support.
- E. Sleeves: Rigid steel conduit sized to accommodate work passing through.
- F. Sealer for sleeves and openings around conduit: UL listed for assembly.
- G. All penetrations of floor slab at mechanical rooms above grade shall be sealed off and waterproofed.

### **PART 3 - EXECUTION**

#### **3.01 GENERAL**

- A. Conduits 4" diameter and smaller for electrical wiring may be electrical metallic tubing (EMT). Exceptions to the requirements stated above area as follows:
1. Conduits in poured concrete construction shall be IMC or GRC regardless of size.
  2. Conduits installed in corrosive areas shall be PVC coated rigid conduit. Corrosive areas are identified on the drawings.
- B. Cut joints shall be square, reamed smooth, and drawn up tight.
- C. Keep conduit plugged, clean, and dry during construction.
- D. Install No. 12 pull wire in empty conduit.
- E. Cap spare conduits.
- F. Provide riser clamps around all conduits 1-1/4" or larger that are routed between floors.
- G. Provide a watertight conduit system where installed in wet locations such as underground, or where embedded in concrete.

#### **3.02 INSTALLATION**

- A. Run exposed conduit in straight lines at right angles to or parallel with walls, beams or columns.
- B. Keep conduit away from waterlines or heating duct lines. Where crossings are unavoidable, leave minimum 6 IN clearances.

#### **3.03 CONDUIT INSTALLATION**

- A. Support all conduit systems from building structure or structure with approved hangers or supports.
1. Do not support form piping, ducts or support systems for piping or ducts.

2. Do not install to prevent ready removal of piping, ducts or ceiling tiles.
  3. Do not support from ceiling or ceiling support systems.
- B. Do not install more than the equivalent of three 90° bends (270 degrees total) in any conduit run.
1. Where more bends are necessary, install junction box or pullbox.
  2. Make all bends in 1/2 IN and 3/4 IN conduit (1 IN EMT) with a conduit bender.
  3. Use machine bends for larger sizes.
- C. Make joints in threaded conduit watertight with white nonleaded compound applied to male threads only.
1. Cut square, ream smooth, and properly thread field joints to receive couplings.
  2. Do not use running threads.
- D. Remove moisture and debris from conduit before wire is drawn into place. Tightly plug ends of conduit with tapered wood plugs inserts until wire is pulled.
- E. Neatly seal openings around conduits, etc., where they pass through fire rated construction or exterior walls or roof.

#### **3.04 CONNECTIONS AND FITTINGS**

- A. Make motor and equipment connections with flexible steel conduit not exceeding 24 IN length.
1. Use PVC coated type with liquid tight connectors in damp locations.
  2. Damp locations include: dishwashing, mechanical equipment pumps on or below grade and exterior applications.
- B. Install expansion joint fittings on conduit at all building expansion joints where conduit is in slab or rigidly attached to the structure.
- C. Use sealing fittings on rigid galvanized conduit in hazardous areas. Install in accord with NEC.

#### **3.05 FIRE STOPS AND PENETRATION SEALS**

- A. All penetrations through fire rated floors and walls due to the electrical installation shall be sealed with CHASE-FOAM PR-855 Fire Resistant foam Sealant, to prevent the spread of smoke, fire, toxic gas or water through the penetration either before, during or after a fire. The fire rating of the penetration seal shall be at least that of the floor or wall into which it is installed, so that the original fire rating of the floor or wall is maintained as required by Article 300-21 of the National Electrical Code. Equivalent foam sealant manufactured by Dow Corning approved.
- B. The sealant shall remain soft and pliable to allow for the removal and/or addition of cables without the necessity of drilling holes. It shall adhere to itself perfectly to allow any and all repairs to be made with the same material.



It shall permit the vibration, expansion and/or contraction of anything going through the penetration without the seal cracking or crumbling.

- C. When damming materials are to be left in place after the seal is complete then all such materials shall be nonflammable.
- D. When sealant is injected into a penetration, the foam shall expand to surround all the items within the penetration and maintain pressure against the walls of the penetration. The foam shall cure within five minutes and be fire resistant at that time. No heat shall be required to further expand the foam to block the passage of fire and smoke or water.
- E. All wall or floor penetration openings shall be as small as possible.
- F. The foam sealant shall meet all of the fire test and hose stream test requirements of ASTM E119-73 and shall be UL Classified as a Wall Opening Protective Device.

\* \* \*

**Section 26 05 34 - Conduit Fittings****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. Work Includes:
1. Furnish all labor, materials, tools, equipment and services for all raceways as indicated, in accord with provisions of Contract Documents.
  2. Completely coordinate with work of all other trades.
  3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
  4. See Section 26 00 01 for General Electrical Requirements.
  5. See Division 1 for General Requirements.

**1.02 SCOPE**

- A. Provide conduit fittings to form a complete raceway system as specified herein.

**1.03 QUALITY ASSURANCE**

- A. Reference Standards:
1. National Electrical Contractors Association (NECA)
    - a. NECA - Standard of Installation

**1.04 RELATED WORK**

- A. Section 26 05 33 - Raceways

**PART 2 - PRODUCTS****2.01 MATERIAL**

- A. Fittings shall be steel or malleable iron and shall be zinc galvanized, or cadmium plated.
- B. Do not use aluminum or die cast fittings.
- C. Do not use running threads.
- D. Do not use set screw or indentor type fittings.

**2.02 CONNECTORS AND COUPLINGS**

- A. Rigid metal conduit and intermediate metal conduit.
1. Threaded
  2. Liquid Tight
  3. Insulated Throat
- B. EMT
1. Threaded
  2. Insulated Throat
  3. Gland Compression Type
  4. Rain and Concrete Tight

- C. Liquid-Tight Flexible Conduit
  - 1. Liquid Tight
  - 2. Suitable for Grounding
  - 3. Suitable for Wet Locations
  - 4. Tapered Threaded Hub
  - 5. Non-metallic Materials
- D. PVC
  - 1. Schedule 40 or 80.

### 2.03 EXPANSION FITTINGS

- A. Expansion fittings: Copper bonding jumper, Crouse-Hinds Type XJ.
- B. Expansion/Deflection fittings: Copper bonding jumper, Crouse-Hinds Type XD.

### 2.04 CONDUIT BODIES

- A. Galvanized or Cadmium Plated
- B. Threaded Hubs
- C. Removable Cover, with Gasket
- D. Corrosion-resistant Screws

### 2.05 SEALS

- A. Wall entrance seals, Appleton Type FSK or FSC. Equivalents by O-Z Gedney approved.

## PART 3 - EXECUTION

### 3.01 INSTALLATION

- A. Install electrical fittings in accordance with the manufacturer's written instructions and with recognized industry practices to ensure that fittings serve intended purposes.
- B. Rigidly secure connectors at cabinets and boxes with galvanized lock nut and bushing.
- C. Seal conduits that run through different temperature or atmospheric conditions to prevent condensations or moisture from entering electrical equipment and devices.
- D. Install wall entrance seal where conduits or direct burial conductors pass through foundation walls below grade.
- E. Install conduit expansion fittings complete with bonding jumper in following locations:
  - 1. Conduit runs which cross a structural expansion joint.
  - 2. Conduit runs where movement perpendicular to axis of conduit may be encountered.
- F. Locate conduit bodies so as to assure accessibility of electrical wiring.

- G. Install fittings designed for use with flexible liquid-tight conduit to ensure continuity of ground throughout the fittings and conduit and prevent entrance of moisture.

\* \* \*

**Section 26 05 35 - Boxes****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. Work Includes:
1. Furnish all labor, materials, tools, equipment, and services for all boxes and fittings as indicated, in accord with provisions of Contract Documents.
  2. Completely coordinate with work of all other trades.
  3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
  4. See Section 26 00 01 for General Electrical Requirements.
  5. See Division 1 for General Requirements.

**1.02 SUBMITTALS (See General Requirements)**

- A. Shop Drawings: Not required.
- B. Product Data: Not required.
- C. Samples: Not required.
- D. Project Information: Not Required.

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Acceptable manufacturers:
1. Galvanized boxes:
    - a. Base: Appleton Electric Co.; Steel City; and Raco.
  2. Corrosion resistant boxes and fittings:
    - a. Base: Crouse-Hinds; and Appleton Electric Co.
  3. Junction box and conduit supports:
    - a. Base: CADDY.
  4. Other manufacturers desiring approval comply with Instruction to Bidders.
- B. Pull and junction boxes: Code-sized galvanized steel boxes provided with plain blank removable covers held in place with screws unless otherwise indicated.
1. Where sizes are not indicated, use 4 IN square or NEC size.

**PART 3 - EXECUTION****3.01 COORDINATION OF BOX LOCATIONS**

- A. Provide electrical boxes as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and code compliance.

- B. Electrical box locations shown on Contract Drawings are approximate unless dimensioned.
- C. No outlet shall be located where it will be obstructed by other equipment, piping.
- D. It shall be the Contractor's responsibility to study drawings pertaining to other trades, to discuss location of outlets with workmen installing other piping and equipment and to fit all electrical outlets to job conditions.
- E. In case of any question or argument over the location of an outlet, the Contractor shall refer the matter to the A/E and install outlet as instructed by the A/E.
- F. The proper location of each outlet is considered a part of this contract and no additional compensation will be paid to the Contractor for moving outlets which were improperly located.
- G. Locate and install boxes to allow access to them. Where installation is inaccessible, coordinate locations and provide 18 inch (450 mm) by 24 inch (600 mm) access doors.

### **3.02 OUTLET BOX INSTALLATION**

- A. Provide knockout closures for unused openings.
- B. Support boxes independently of conduit.
- C. Install boxes in wall without damaging wall insulation.
- D. Provide cast outlet boxes in exterior locations exposed to the weather and wet locations.
- E. Surface wall outlets shall be 4 inch square with raised covers for one and two gang requirements. For three gang or larger requirements, use gang boxes with non-overlapping covers.

### **3.03 PULL AND JUNCTION BOX INSTALLATION**

- A. Locate pull boxes and junction boxes above accessible ceilings or in unfinished areas.
- B. Support pull and junction boxes independent of conduit.

\* \* \*

**Section 26 05 36 - Pull and Junction Boxes****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. Work Includes:
1. Furnish all labor, materials, tools, equipment, and services for all boxes and fittings as indicated, in accord with provisions of Contract Documents.
  2. Completely coordinate with work of all other trades.
  3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
  4. See Section 16010 for general electrical requirements.
  5. See Division 1 for General Requirements.

**1.02 SUBMITTALS (See General Requirements)**

- A. Shop Drawings: required.
- B. Product Data: required.
- C. Samples: Not required.
- D. Project Information: Not required.

**PART 2 - PRODUCTS****2.01 ACCEPTABLE MANUFACTURERS**

- A. For interior work, provide galvanized sheet metal boxes of code thickness with lapped and welded joints, 3/4" flanges and screw covers.
- B. For exterior work, provide galvanized sheet metal boxes of code thickness with lapped and welded joints, 3/4" flanges, bolted covers with full gaskets forming a completely raintight assembly, equal to Keystone 19000 series.
- C. For exterior work in areas outside the building, provide heavy duty in-ground junction boxes externally flanged for flush mounting. Covers shall be fully gasketed, watertight and secured with plated screws or bolts equal to Quazite Type PC.

**PART 3 - EXECUTION****3.01 INSTALLATION REQUIREMENTS**

- A. Provide junction boxes as shown on drawings and otherwise where required, sized according to number of conductors in box or type of service to be provided. Minimum junction box size 4" square and 2-1/8" deep. Provide screw covers for junction boxes.

- B. Use minimum 16 gauge steel for pull boxes and provide with screw cover.
- C. Install boxes in conduit runs wherever necessary to avoid excessive runs or bends. Do not exceed 100' runs without pull boxes.
- D. Rigidly secure boxes to walls or ceilings. Conduit runs will not be considered as adequate support.
- E. Install boxes with covers in accessible locations. Size boxes in accordance with Articles 370 and 373 of the latest edition of the National Electric Code.
- F. Do not install pull or junction boxes for joint use of line voltage and signal or low voltage controls unless all conductors are insulated for the highest voltage being used in the same box.

\* \* \*



**Section 26 05 53 - Electrical Identification****PART 1 - GENERAL****1.01 DESCRIPTION**

- A. Work Includes:
1. Furnish all labor, materials, tools, equipment, and services for wiring all equipment furnished by others as indicated, in accord with provisions of Contract Documents.
  2. Completely coordinate with work of all other trades.
  3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure and complete installation.
  4. See Section 26 00 01 for General Electrical Requirements.
  5. See Division 1 for General Requirements.

**1.02 SECTION INCLUDES**

- A. Nameplates
- B. Stenciling
- C. Wire and Cable Markers

**1.03 SUBMITTALS**

- A. Submit shop drawings under provisions of Section 16010.
- B. Include schedule for nameplates and stenciling.

**PART 2 - PRODUCTS****2.01 MATERIALS**

- A. Nameplates: Engraved three-layer laminated plastic, black letters on a white background. Emergency system shall use red letters on white background.
- B. Stenciling: Black paint.
- C. Wire and Cable Markers: Cloth markers, split sleeve or tubing type.
- D. Tape (phase identification only): Scotch #35 tape in appropriate colors for system voltage and phase.
- E. Adhesive type labels not permitted except for phase and wire identification.

**PART 3 - EXECUTION****3.01 GENERAL**

- A. Where mixed voltages are used in one building (e.g. 4160 volt, 480 volt, 208 volt) each switch, switchboard, junction box, equipment, etc., on each system must be labeled for voltage addition to other requirements listed herein.
- B. All branch circuit and power panels must be identified with the same symbol used in circuit directory in main distribution center.

**3.02 INSTALLATION**

- A. Clean surfaces to receive nameplates or stenciling.
- B. Install nameplates parallel to equipment lines.
- C. Secure nameplates to equipment fronts using screws, or rivets. Secure nameplate to inside of recessed panelboards in finished locations.
- D. Embossed tape will not be permitted for any application.
- E. Stenciling may only be used on equipment fronts in unfinished areas or in areas designated by the Architect/Engineer.

**3.03 WIRE IDENTIFICATION**

- A. Provide wire markers on each conductor in panelboard gutters, pull boxes, outlet and junction boxes, and at load connection. Identify with branch circuit or feeder number for power and lighting circuits, and with control wire number as indicated on schematic and interconnection diagrams for control wiring.

**3.04 FEEDER IDENTIFICATION**

- A. Each feeder within each pulling pit, manhole and pull box will be identified utilizing permanently attached nameplates.
- B. Nameplates shall be engraved three-layer laminated plastic, black on white background for normal power, red on white background for emergency power. Firmly attach to cable with non-aging nylon tye-wraps.
- C. Nameplate shall identify voltage, system (i.e. normal, em-equip or em-life) and destination of feeder (i.e. buildings A, B, C and D, etc.).
- D. Temporary tags are to be utilized during construction and permanent tags to be installed near substantial completion of distribution system.

**3.05 JUNCTION AND PULLBOX IDENTIFICATION**

- A. Junction and pull boxes shall be identified utilizing spray painted covers.
- B. Verify existing color coding scheme at building site. Comply accordingly.

**3.06 NAMEPLATE ENGRAVING AND STENCILING**

- A. Provide nameplates or stencils of minimum letter height as scheduled below.
- B. Panelboards and Switchboards: 1 inch; identify equipment designation. 1/2 inch; identify voltage rating and source.
- C. Individual Circuit Breakers, Switches, in Panelboards and Switchboards, and Motor Control Centers: 1/4 inch; identify circuit and load served, including location.
- D. Individual Circuit Breakers and Enclosed Switches: 1/4 inch; identify load served.
- E. Junction boxes: 1/2 inch; identify system source(s) and load(s) served.

**3.07 PANELBOARD DIRECTORIES**

- A. Directories for panels must be covered with clear plastic, have a metal frame and shall be typewritten. Room number on directories shall be Owner's numbers, not Plan numbers unless Owner so specifies.
- B. Upgrade existing panel directories.

\* \* \*

**Section 31 23 16.13 - Trenching****PART 1 - GENERAL****1.01 SCOPE**

The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to complete trenching for general wiring, utility interconnects, and other work, as required in these specifications, on the drawings and as otherwise deemed necessary to complete the work. Included are the following topics:

- PART 1 - GENERAL
  - Scope
  - Related Work
  - Submittals
  - Record Drawings
  - Permits/Fees
- PART 2 - MATERIALS
  - Crushed Stone Bedding
  - Crushed Stone Screenings
  - Bedding Sand
- PART 3 - EXECUTION
  - Preparation
  - Excavation
  - Backfill and Compaction
  - Restoration

**1.02 RELATED WORK**

- A. Applicable provisions of Division 1 govern work under this Section.

**1.03 SUBMITALS**

- A. Provide copies of record drawings. Provide copies of Digger's Hotline layout. Field verify all located and record underground utilities.

**1.04 RECORD DRAWINGS**

- A. Maintain record drawings showing actual locations of utilities and other features encountered, modifications to proposed grades and site features, and other deviations from the original design.

**1.05 PERMITS/FEES**

- A. Contractor shall be solely responsible for obtaining all permits necessary to complete trenching work. The Contractor shall pay all fees associated with obtaining permits. These include, but are not limited

to permits to work within right-of-way, utility connection permits, electrical permits and other building permits.

## **PART 2 - MATERIALS**

### **2.01 CRUSHED STONE BEDDING**

- A. Clean material meeting the requirements of "¾" Crushed Stone Chips".

### **2.02 CRUSHED STONE SCREENINGS**

- A. Crushed stone free of organic material, concrete, asphalt and other debris. Material shall meet the requirements of "Crushed Stone Screenings".

### **2.03 BEDDING SAND**

- A. Sand meeting the requirements of "Bedding Sand".

## **PART 3 - EXECUTION**

### **3.01 PREPARATION**

- A. Review plans and prepare work plan and schedule. Coordinate any necessary interruptions in utility service in accordance with other specification sections.
- B. Layout work. Establish and transfer line and grade as necessary to complete the work.
- C. Remove topsoil from work area. Saw cut and remove pavement from the work area.

### **3.02 EXCAVATION**

- A. Excavate to elevations and dimensions necessary to complete construction. Excavations shall be sufficiently deep to provide for bedding beneath conduit.
- B. The trench width at the ground surface shall be minimized to the extent possible through the use of trench boxes, shields, or shoring.
- C. Segregate the various materials excavated. Reserve material meeting the requirements of backfill for the location. Excavated material that does not meet the requirements of backfill, and excess excavated material, shall be removed from the site and disposed by the contractor, unless directed otherwise.

- D. Locate backfill and spoil piles in accordance with OSHA requirements, and so that it does not interfere with County's activities or other construction activities.
- E. Trench excavation shall be limited to that which can be excavated and backfilled within the same workday.

### **3.03 BACKFILL AND COMPACTION**

- A. Once initial cover material is placed and compacted, backfill trenches using the backfill material.
- B. Backfill trenches to existing elevations; allow for placement of topsoil and grass sod.
- C. Moisture condition backfill material as necessary to achieve density required for given use.
- D. Do not place material on frozen surfaces or use frozen material.
- E. Compact material to minimize settlement.
- F. It is the responsibility of the Contractor to provide all necessary compaction equipment and other grading equipment that may be required to obtain the specified density. Vibratory plate or tamping type walk behind compactors will be required whenever backfill is placed adjacent to structures, utility lines and other features.
- G. Flooding or jetting of backfill material for compaction purposes is not allowed.

### **3.04 RESTORATION**

- A. Restore trenches to proposed grades and surfaces as soon as practicable after backfilling.
- B. Remove excess bedding, backfill and spoil material from the site as soon as possible after backfilling is complete, but no later than 1 calendar dates after backfilling is complete.
- C. Thoroughly clean all drainage ways, roads, and paved surfaces and remove and dispose all debris and mud.
- D. Water grass sod bi-weekly for (1) month period.

\* \* \*

**Section 48 14 00 - Solar Energy Electrical Power Generation Equipment****PART 1 - GENERAL****1.01 DESCRIPTION****A. General:**

1. Furnish all labor, materials, tools, equipment, and services for all wiring devices as indicated, in accord with provisions of Contract Documents.
2. Completely coordinate with work of all other trades.
3. Although such work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices and incidental to or necessary for a sound, secure and complete installation.
4. See Section 26 00 01 for General Electrical Requirements.
5. See Division 01 for General Requirements.
6. System will be commissioned upon project construction completion.
7. The 26 00 00 contractor shall be responsible for the full electrical installation of equipment in this section.

**1.02 SUMMARY****A. Section includes:**

1. Solar Energy System(s). The layout and configuration of the on-site solar PV system will be the responsibility of the Electrical Contractor; however, the system must be compliant with these Engineering design guidelines. This specification delineates the minimum technical and installation specifications required of the Electrical Contractor for this Project. It is the intent of these specifications to insure that the PV systems installed are consistent with and adhere to any and all Wisconsin Building Codes and standards, the Wisconsin Focus on Energy program, applicable utility rules and tariffs, and any and all technical and installation specifications and guidelines as may be developed and established. Bidders are advised to be familiar with these rules, requirements and specifications as they pertain to the installation of solar PV systems on this project. In addition to the requirements set out in this specification (including, but not limited to construction, operation and maintenance), the installer shall be North American Board of Certified Energy Practitioners (NABCEP) certified (or be seeking certification as outlined by the Focus on Energy program guidelines).

2. PV Modules
  - a. System must comply with IEEE 1262 "Recommended Practice for Qualifications of Photovoltaic Modules".
  - b. Shall have integral Bypass and Isolation Diodes. Bypass diodes divert current around the module (or cells within the module) in the event of shading. Isolation diodes prevent the loss of current in the event that one string of modules in the array fails. While these terminologies may change or become updated, the basic function as described is required.
3. Electric Power Requirements:
  - a. Power provided must be compatible with the onsite distribution system.
  - b. Power capacity should be measured at the inverter AC output using the Standard Test Conditions (STC), i.e. 1,000 Watts/m<sup>2</sup>, 1.5 AM, 25 degree C ambient cell temperature and wind speed of 1 m/s.
  - c. The System must include all the hardware needed for the solar PV.
  - d. All systems must be installed in accordance with all applicable requirements of local electrical codes and the National Electrical Code (NEC), including but not limited to Article 690, "Solar Photovoltaic Systems" and Article 705 - "Interconnected Electrical Power Production Sources".
  - e. Systems must be designed and installed using UL or ETL listed components, including mounting systems.
  - f. Modules must be certified to UL 1703 - "Flat-Plate Photovoltaic Modules and Panels".
  - g. Inverters must comply with the following requirements:
    - 1) IEEE 929-2000 - "Recommended Practice for Utility Interface of Photovoltaic Systems"
    - 2) UL 1741 - "Standard for Static Inverters and Charge Controllers for use in Photovoltaic Systems"
  - h. Other technical codes that will apply include:
    - 1) AMSE PTC 50 (solar PV performance)
    - 2) ANSI Z21.83 (solar PV performance and safety)
    - 3) NFPA 853 (solar PVs near buildings)
    - 4) NEPA 70 (electrical components)
    - 5) IEEE 1547 (interconnections)
    - 6) National Electrical Safety Code - ANSI C2 - 1999
    - 7) All applicable State Building Codes and requirements
  - i. All Balance of Systems (wiring, component, wiring, conduits, and connections) must be suited for conditions for which they are to be installed. It is the preference of the Engineer



that when possible, inverters are located inside out of the weather in a minimum NEMA 12 enclosure. If inverters are in exterior locations, they shall be installed in all-weather NEMA 4X enclosures. An interval data meter must be installed to measure the AC output of the inverter. This meter should be located in a location accessible to the facilities personnel. The inverter shall have a TCP/IP and MODBUS interface for remote access via network computer.

- j. Interconnection must comply with Wisconsin's Public Service Commission's PSC119, "RULES FOR INTERCONNECTING DISTRIBUTED GENERATION FACILITIES". Electrical Contractor will assist the County in preparing and submitting appropriate interconnection agreements. This shall be done at no cost or liability to the County.
4. Meters
    - a. Refer to State of Wisconsin PSC114 and local utility for exact connection requirements not mentioned here.
  5. Structural Requirements:
    - a. All structures and structural elements, including array structures, shall be installed in accordance with all applicable Wisconsin Building Codes and standards set by these drawings.
    - b. If required, the Electrical Contractor shall provide structural calculations, stamped by a licensed professional structural engineer in good standing with the State of Wisconsin.
    - c. All structural components, including array structures, shall be designed in a manner commensurate with attaining a minimum 30 year design life. Particular attention shall be given to the prevention of corrosion at the connections between dissimilar metals.
    - d. Any roof penetrations must be designed and constructed in collaboration with the roofing professional or manufacturer responsible for the roof and roofing material warranty for the specific site, to ensure that the existing roof warranty is not invalidated by the installation of the PV system.
    - e. For rooftop installations where there is no parapet or the parapet is less than 42", a 6' safety zone from the roof edge to the PV system must be maintained. A 3' clear path of travel must be maintained to and around all rooftop equipment.
  6. Operation and Maintenance
    - a. The Electrical Contractor will be responsible for the operation and all maintenance of the solar PV system at the Electrical Contractor's cost. The Electrical Contractor shall operate

- and maintain the solar system so as not to disrupt the operation of the facility.
- b. For a period of 2 years, the Electrical Contractor shall provide notification to the County as early as practical, but in no event less than five days, prior to any planned installation, maintenance, and repairs. The Electrical Contractor will provide a minimum of ten days notification to the County if any planned repairs or maintenance that will result in any disruption to County's electrical load.
  - c. The County will use reasonable efforts to maintain the facilities in good condition and repair so as to be able to receive and utilize the solar electricity supplied by the proposed project.
  - d. The County will not be required to provide any maintenance. All system warranties and workmanship guarantees will be in effect for a period of no less than two years after 100% completion date.
  - e. As part of the commissioning of the solar PV system the Electrical Contractor shall provide operations manuals, as well as instruct and provide training to not less than (2) of the County's facilities personnel. This training shall not be less than 2 hours each site and shall be video-recorded on a DVR, with back-up DVD copies made available to the County, and the A/E. Additionally, training shall include how to shut down the solar PV system in the event of an emergency. The Electrical Contractor shall insure that County's emergency first responders can easily identify what to do in the event of an emergency and able to perform these tasks quickly and safely. All training shall be at a time and date convenient to the County's personnel.
  - f. Contractor shall document progress with photographs of installation process. Provide a minimum of (24) photos (jpeg format) from each site, documenting various stages of the project. Provide photos on (2) CD's, to be turned over to Owner upon project completion.
7. Incentive Applications
- a. This project is eligible for incentive monies from Focus on Energy (FOE). Contractor shall be responsible to prepare the necessary FOE incentive applications, and submit those applications with all required supporting documentation in a timely manner, on behalf of Dane County. County will furnish any accompanying information required on all forms. Note that each site requires an individual application. The FOE contact for this project is Jennifer Everhart. Phone:(888) 947-6048; email: [jeverhart@cesa10.k12.wi.us](mailto:jeverhart@cesa10.k12.wi.us).

- b. Prior to purchase or installation of any equipment, Contractor shall complete and submit to Jennifer Everhart the "Solar Electric (Photovoltaic) System Incentive Application for Business". This application is available on the FOE website and is updated every 6 months: [http://www.focusonenergy.com/Incentives/Business/renewable\\_incentives.aspx](http://www.focusonenergy.com/Incentives/Business/renewable_incentives.aspx).
- c. Upon project completion, FOE requires copies of all product invoices for each individual project. Additional application procedures will also be required at that time in order to assist County with final receipt of funds.
- d. This project is eligible for "Buy Back" of energy produced through the utility, Madison Gas and Electric (MG&E). Contractor shall be responsible to prepare the necessary applications required by MG&E, and submit those applications in a timely manner, on behalf of Dane County. County will furnish any accompanying information required on all forms. Note that each site requires an individual application. Applications include, but are not limited to, the Standard Distributed Generation Application (Public Service Commission of Wisconsin form 6027), MG&E Green Power Partner Agreement. The MG&E contact for this project is Bob Criscione. Phone: (608) 252-4795.
- e. For all applications for FOE and MG&E, Contractor shall furnish (1) copy to County, and (1) copy to Engineer, in addition to any and all required copies sent to FOE and MG&E.

### 1.03 SUBMITTALS

- A. Product data. Unless otherwise indicated, submit the following for each type of product provided under work of this Section:
  - 1. Local/Regional Materials:
    - a. Sourcing location(s): Indicate location of job source materials, distance to job site, and lead time for all components.
    - b. Manufacturing location(s): Indicate location of manufacturing facility; indicate distance between manufacturing facility and the project site. Product Value: Indicate dollar value of product containing local/regional materials; include materials cost only.
  - 2. Renewable Energy:
    - a. Submit manufacturer's product data for system.
    - b. Submit calculations indicating the energy produced by the system based on as-built efficiencies and data from WBAN 30-year records.
    - c. Submit Letter of Certification from system provider indicating the energy produced by the

- system as a percentage of the total energy demand for the building.
3. Change in Layout or System Design:
    - a. Submit product data for each component changed from drawings. Include the following for each (complete list of product type not shown, where values are listed, item may not be outside that range).
  4. PV Modules:
    - a. In addition to complete technical white paper, include Open Circuit Voltage of entire series strings, complete with -40° F to 122° F corrections (Voc max). Short Circuit Current for each series string, the number of strings in parallel, total Short Circuit Current (x 1.25) and the calculated conductor size based on 131° F Ambient Correction Factor using 60° terminations. Also include maximum operational voltage and current under STC (Standard Test Conditions), and module efficiency. Shall have a 20-year warranty.
  5. Inverter:
    - a. Max. DC input voltage, operating DC voltage range, maximum usable DC input current, maximum output power at 40° C (140° F), nominal AC output voltage (including utility interconnect range), maximum AC current, 0.0 A utility back feed current, operating frequency range, <5% THD, unity power factor, greater than 94% efficiency, power consumption at max use and in standby (night mode), dimensions, compliance with UL 1741, FCC, IEEE 1547, others as necessary, cooling requirements (BTU's generated), integrated AC and DC disconnects and overcurrent protection, 20 year minimum warranty. Submit AIC rating of AC output side overcurrent protective device. Operating Range: -40°F to 105°F
    - b. Inverter shall include LCD display of status messages which can scroll through all operating data, i.e. total energy produced that day, grid voltage, AC power output and DC input voltage and accumulated yield since installation and total operation hours. Screen may be scrolled manually. Unit shall also display fault, warning and error messages. Unit shall also include LED status indicators, (3) of normal operation, blown fuse and fault.

Inverter shall also include provision to be tied into a local PC system or internet tie for remote monitoring of system via a web site.
  6. Racking system for roof mount, ground mount and pole mounted arrays shall be as specified on the drawings.

- B. Submit environmental data in accordance with Table 1 of ASTM E2129 for products provided under work of this Section.

#### 1.04 QUALITY ASSURANCE

- A. The Institute of Electrical and Electronic Engineers, Inc. promulgates standards for electrical and electronic equipment, most notably; P929 Recommended Practice for Utility Interface of Photovoltaic (PV) Systems (specifying frequency and voltage limits, power quality, and non-islanding inverter testing).

Underwriters Laboratory promulgates standards for Electrical Equipment Safety for manufacturers, most notably UL Standard 1703, Flat-plate Photovoltaic Modules and Panels and UL Standard 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems which incorporates the testing required by IEEE 929 and includes design (type) testing and production testing. The National Electrical Code (NEC) includes requirements for all renewable energy installations for electrical trades and industry experts. Article 690 includes special information for Solar Photovoltaic Systems and requires UL listing for utility interface inverters. Other sections (Article 230, 240, 250 and 300 to 384) include requirements for wiring and overcurrent protection. A good resource is [www.nmsu.edu/Research/tdi/public\\_html/Photovoltaics/Codes-Stds/Codes-Stds.html](http://www.nmsu.edu/Research/tdi/public_html/Photovoltaics/Codes-Stds/Codes-Stds.html)

- B. Solar Energy Systems:
1. Photovoltaic Panels: Provide panels labeled with the following tests completed by the manufacturer.
    - a. Weathering:
      - ASTM E1038-Standard Test Method for Determining Resistance of Photovoltaic Modules to Hail by Impact with Propelled Ice Balls
      - ASTM E1171- Standard Test Method for Photovoltaic Modules in Cyclic Temperature and Humidity Environments
      - ASTM E1596- Standard Test Methods for Solar Radiation Weathering of Photovoltaic Modules
      - ASTM E1597- Standard Test Method for Saltwater Pressure Immersion and Temperature Testing of Photovoltaic Modules for Marine Environments
      - ASTM E1802-Standard Test Methods for Wet Insulation Integrity Testing of Photovoltaic Modules
      - ASTM E2047- Standard Test Method for Wet Insulation Integrity Testing of Photovoltaic Arrays
      - ASTM E1830- Standard Test Methods for Determining Mechanical Integrity of Photovoltaic Modules
      - ASTM E781- Standard Practice for Evaluating Absorptive Solar Receiver Materials When Exposed to Conditions Simulating Stagnation in

## Solar Collectors With Cover Plates

ASTM E782- Standard Practice for Exposure of Cover Materials for Solar Collectors to Natural Weathering Under Conditions Simulating Operational Mode

ASTM E823- Standard Practice for Nonoperational Exposure and Inspection of a Solar Collector

ASTM E881- Standard Practice for Exposure of Solar Collector Cover Materials to Natural Weathering Under Conditions Simulating Stagnation Mode

b. Calibration:

ASTM E1039- Standard Test Method for Calibration of Silicon Non-Concentrator Photovoltaic Primary Reference Cells Under Global Irradiation

ASTM E1362- Standard Test Method for Calibration of Non-Concentrator Photovoltaic Secondary Reference Cells

c. Energy Performance:

ASTM E948- Standard Test Method for Electrical Performance of Photovoltaic Cells Using Reference Cells Under Simulated Sunlight

ASTM E1021- Standard Test Methods for Measuring Spectral Response of Photovoltaic Cells

ASTM E903- Standard Test Method for Solar Absorptance, Reflectance, and Transmittance of Materials Using Integrating Spheres

ASTM E1040- Standard Specification for Physical Characteristics of Nonconcentrator Terrestrial Photovoltaic Reference Cells

ASTM E1462- Standard Test Methods for Insulation Integrity and Ground Path Continuity of Photovoltaic Modules

**PART 2 - PRODUCTS****2.01 EQUIPMENT**

- A. Decisions as to appropriateness of system requirements and design are dependent upon project goals and location.
1. Modules: Sharp, Kyocera, Solar World, Sanyo.
  2. Inverter: Fronius, Xantrex, Sunny Boy.
  3. Rack System: DPW Solar, DH Solar, Array Tech, or equal.
  4. Tracker: DH Solar, Watt Sun, or equal.
- B. After 1 and 2 years of operation, the E.C. shall revisit each installation, inspect and tighten all bolted connections of the racking system to the recommended torque and lubricate tracker motor. E.C. shall record operation data off the inverter display, and submit inspection/maintenance and observation report to the County.

**PART 3 - EXECUTION****3.01 SITE ENVIRONMENTAL PROCEDURES**

- A. Resource Management:
  - 1. Energy Efficiency: Verify equipment is properly installed, connected, and adjusted. Verify that equipment is operating as specified.
  - 2. Renewable Energy: Verify proper operation in all modes of system operation by testing. Verify proper operation under a wide range of conditions to verify energy delivery as calculated for those conditions.
    - a. Solar Energy Systems: Comply with ASTM E1799-Standard Practice for Visual Inspections of Photovoltaic Modules.

\* \* \*



# SOLAR PHOTOVOLTAIC FACILITIES MULTI LOCATIONS RFB NO. 310034

DANE COUNTY DEPARTMENT OF PUBLIC  
WORKS, HIGHWAY AND TRANSPORTATION  
PUBLIC WORKS ENGINEERING DIVISION  
1919 ALLIANT ENERGY CENTER WAY  
MADISON, WI 53713



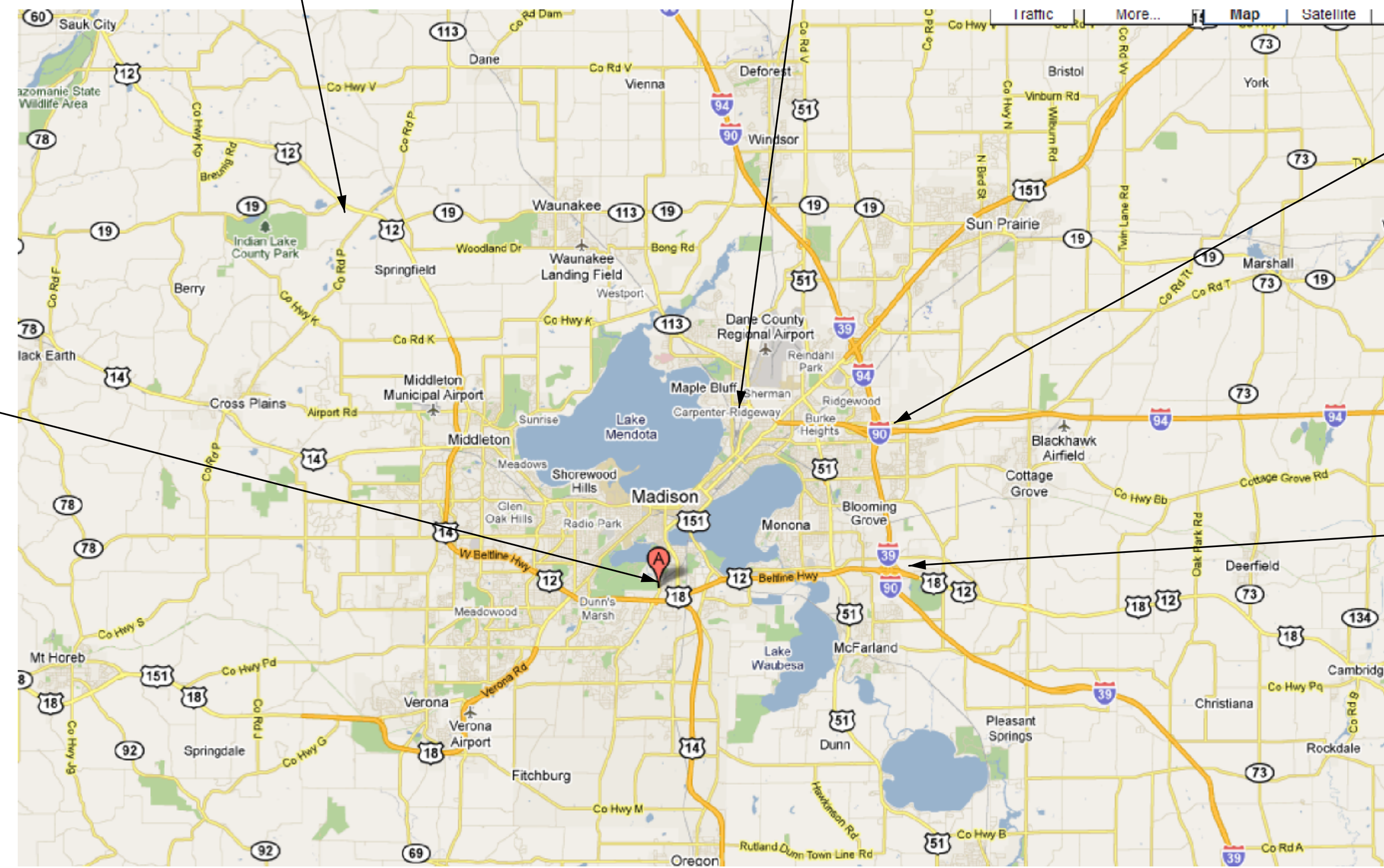
SPRINGFIELD CORNERS HIGHWAY GARAGE  
6159 U.S. HIGHWAY 12  
SPRINGFIELD CORNERS, WI 53529  
SEE SHEET E4.0

DANE COUNTY JOB CENTER  
1819 ABERG AVENUE  
MADISON, WI 53704  
SEE SHEET E1.0

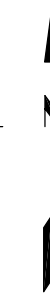
BADGER SALT SHED  
3650 COUNTY TRUNK HIGHWAY T  
MADISON, WI 53718  
SEE SHEET E5.0

DANE COUNTY HIGHWAY GARAGE  
2302 FISH HATCHERY ROAD  
MADISON, WI 53713  
SEE SHEET E2.0

LANDFILL MAIN GARAGE  
7102 U.S. HIGHWAY 12 & 18  
MADISON, WI 53718  
SEE SHEET E3.0



SITE LOCATION PLAN  
NO SCALE



## SHEET INDEX

### ELECTRICAL

- EL GENERAL NOTES AND DETAILS
- E1.0 DANE COUNTY JOB CENTER PHOTOVOLTAIC ROOF PLAN AND DETAILS
- E2.0 DANE COUNTY HIGHWAY GARAGE PHOTOVOLTAIC ROOF PLAN AND DETAILS
- E3.0 LANDFILL MAIN GARAGE PHOTOVOLTAIC ROOF PLAN AND DETAILS
- E4.0 SPRINGFIELD CORNERS HIGHWAY GARAGE PHOTOVOLTAIC GROUND MOUNT AND DETAILS
- E5.0 BADGER SALT SHED PHOTOVOLTAIC POLE MOUNT PLAN AND DETAILS

### DATE:

11-12-2010



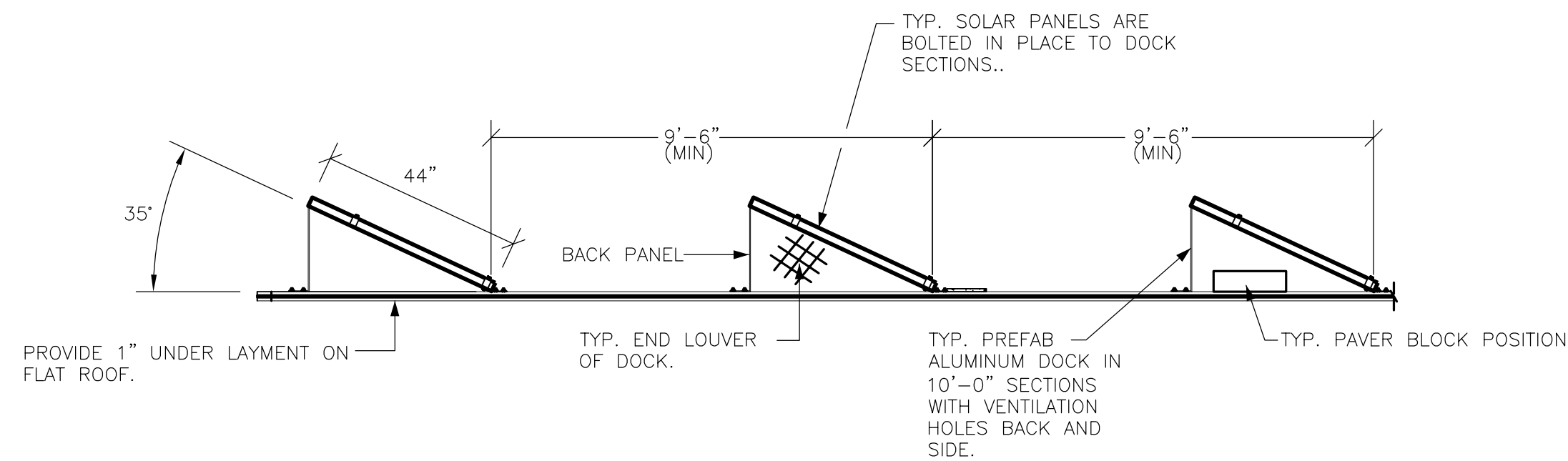
ELECTRICAL



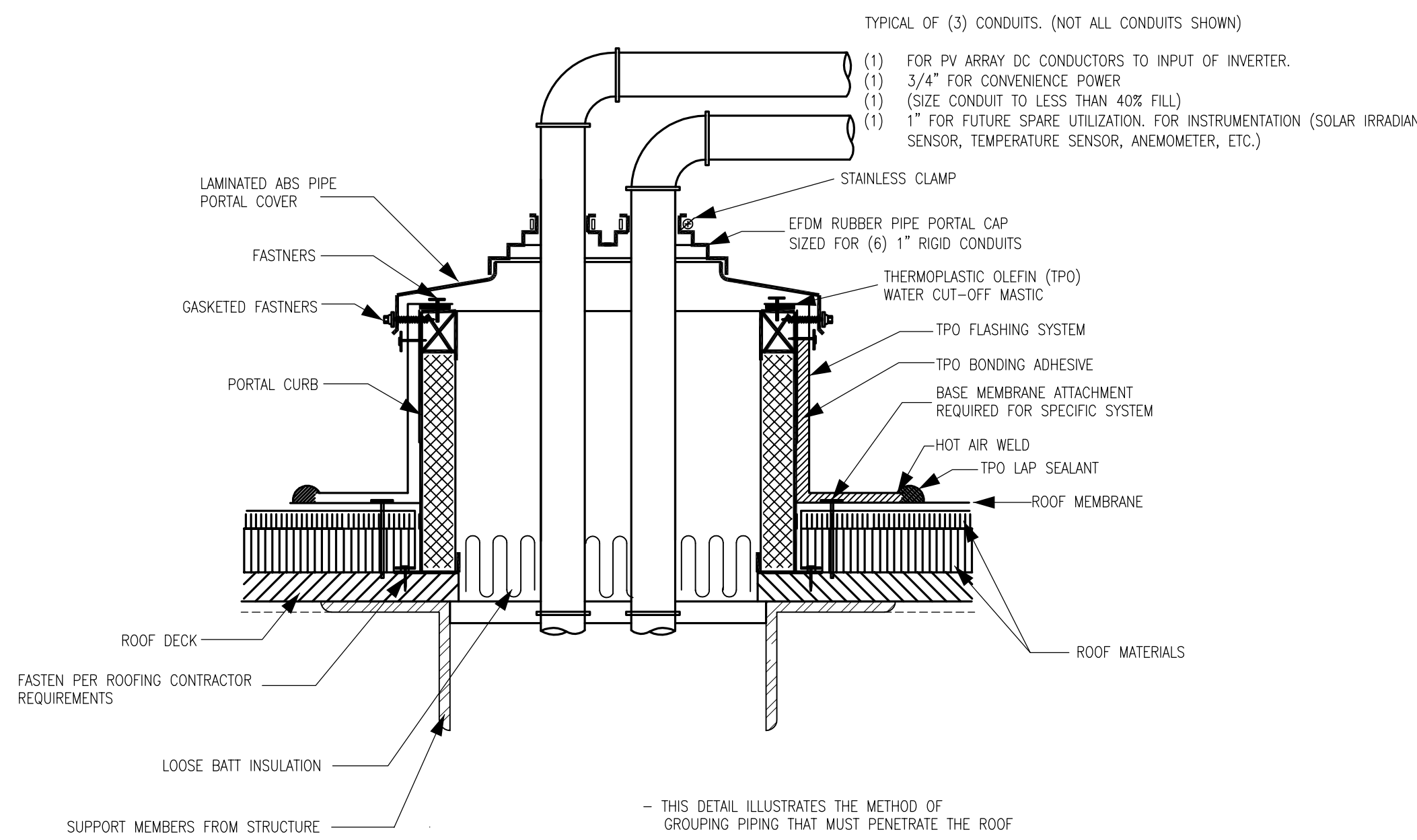
FEEDER SCHEDULE								
NO	# OF SETS	#+N CONDUCTORS		ISOLATED GROUND		EQUIP. GROUND		CONDUIT PER SET
		NO	SIZE (MIN.)	NO	SIZE	NO	SIZE	
1	1	2	4			1	6	1 1/4"
2	1	2	6			1	6	1"
3	1	2	10			1	10	1"
4	1	1	12			1	10	1"

**FEEDER GENERAL NOTES:**

- SOME EQUIPMENT SELECTIONS WILL REQUIRE A NEUTRAL (IF NOT SHOWN). THIS CONTRACT REQUIRES THE EC TO PROVIDE THIS FEEDER, THEREBY ACCOMMODATING A DESIGN OR LAYOUT WHICH WOULD NEED IT.



**1 PARTIAL SIDE VIEW - ROOF MODULES**



**2 PIPE PORTAL DETAIL - TYPICAL**

**NOTES:**

- CONTRACTOR MUST REVIEW THE EXISTING ROOF CONSTRUCTION WITH THE COUNTY'S ROOFING CONTRACTOR TO MAINTAIN WARRANTY ON THE ROOF.

**PLAN NOTES APPLICABLE TO ROOF MOUNT, GROUND MOUNT AND POLE MOUNT ARRAY**

- SYSTEM CONFIGURATION AND DESIGN AS SHOWN SHALL BE ADJUSTED TO REFLECT THE ACTUAL COMPONENTS CHOSEN. THE DESIGN SHOWN IS A TYPICAL LAYOUT AND WIRING SCHEME WHICH IS INTENDED TO SHOW THE FUNDAMENTAL OBJECTIVE.
- DISCONNECTS SHALL BE HEAVY DUTY TYPE RATED FOR THE VOLTAGE WITH LOCKABLE COVER. LOCATE AS INDICATED IN AVAILABLE SPACE.
- EACH PV DISCONNECTING MEANS SHALL BE MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT AND TO WHICH ARRAY/INVERTER IT SERVES. IT SHALL ALSO READ "WARNING ELECTRIC SHOCK HAZARD. THE DC CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE ENERGIZED."
- PARALLEL CONNECTION POINT. ALL CONDUCTORS IN PARALLEL SHALL BE THE SAME LENGTH.
- TYPICAL OF SOLAR WORLD SW245 245W SERIES SOLAR PANEL OR EQUAL AS INDICATED IN THE SPECIFICATIONS, TOTAL PANELS AS INDICATED.
- 208 VOLT OR 480 VOLT 100A OR 200A UTILITY APPROVED METER SOCKET. SOCKET PROVIDED BY EC, METER PROVIDED BY UTILITY. CONFIRM METER TYPE WITH UTILITY BEFORE PROCEEDING.
- ALL LOOSE CABLES MUST BE PROPERLY SUPPORTED.
- TVSS SHALL BE ARITECH OR G.E. 18, AND USE AT LEAST #10 CU WIRE.
- CORROSION RESISTANT NEMA 4X, WEATHERPROOF, 600 VOLT DC RATED DISCONNECT.
- PROVIDE #6 GROUND TO EACH MODULE AND RACK SYSTEM. EXTEND #6 GROUND TO BUILDING GROUND SYSTEM, AND DRIVE (2) ROD ELECTRODES AT NEW METER LOCATION.
- BALANCE ALL LOADS IN BRANCH PANEL TO BE INTERCONNECTED THROUGH COORDINATION WITH FACILITIES.
- PROVIDE PLAQUE-STYLE LABEL AT TOP FRONT COVER OF PV PANEL TO READ "WARNING INVERTER OUTPUT CONNECTION. DO NOT RELOCATE THIS OVER CURRENT DEVICE". AT BOTTOM FRONT COVER PROVIDE ANOTHER PLAQUE-STYLE LABEL TO READ "PV SYSTEM PANEL NOT TO BE USED FOR OTHER LOADS." ARRANGE PHASING TO DISTRIBUTE THE OUTPUT OF THE INVERTERS AS EVENLY AS POSSIBLE. PROVIDE ADDITIONAL LABELING PER NEC ARTICLE 690.
- ALL CONDUCTORS USED FOR THE ARRAY SHALL BE 90° RATED SHALL BE IN METAL CONDUIT IMC OR EMT TYPE THHN-2 OR XHHW-2.
- TRANSITION FROM WIRING CONNECTED TO AND EMERGING FROM THE MODULE TO THE INTERCONNECTING CONDUIT WIRING. PROVIDE NEMA 4X JUNCTION BOX, SOLDERED SPLICE WITH LISTED HEAT SHRINK ON SPLICE. ALL SPLICES TO USE SUNLIGHT RESISTANT, WP HEAT SHRINK SLEEVES.
- (2) POWER DISTRIBUTION BLOCKS (FERRAZ SHAMUT, ILSCO, ETC.) PER JUNCTION BOX (BOX INCLUDES STAND-OFF PLATE FOR MOUNTING HARDWARE WITHIN SIZE BOX TO APPROPRIATE FILL COUNT BASED ON MANUFACTURER CHOSEN.
- NOT USED.
- INSTRUMENTATION CABLING REQUIREMENTS VARY BY INVERTER MANUFACTURER. INCLUDE PROVISION FOR FUTURE INSTALLATION FOR WIRING AND CONDUIT.
- E.C. MAY REVISE CIRCUITING TO THE MODULES TO FIT THE PHYSICAL LOCATION OF PANELS IN ORDER TO MAKE WIRING MORE CONVENIENT. SUBMIT PROPOSED WIRING PRIOR TO PROCEEDING.
- EXTEND 110V CIRCUIT FROM NEAREST EXISTING 110V PANEL. PROVIDE INTERMATIC WPI010MC OR EQUAL. EXTEND 2#10 #10C - 3/4". PROVIDE 20A-1P-CB 22KAC TO SERVE WP OFI RECEPTACLE AT ARRAY IN EXISTING PANEL SPACE.
- PROVIDE (3) SPARE FUSES OF EACH TYPE USED FOR EACH SITE.
- COMBINER BOXES SHALL INCLUDE INTEGRAL DISCONNECT SWITCH, SURGE PROTECTION, FUSE HOLDERS, FUSES SIZE AS REQUIRED AND POWER DISTRIBUTION BLOCKS. LUGS SHALL BE SIZED FOR CABLES SIZE AS SPECIFICATION. PROVIDE FIBERGLASS ENCLOSURE WITH LOCKING PADLOCK AND (2) SETS OF KEYS. INCLUDE "DANGER SIGN" PER NOTE 3 ABOVE.
- PV PANEL SHALL BE MINIMUM 200 AMPS SINGLE PHASE 120/208V SURFACE MOUNTED WITH MCB AND BRANCH CB AS INDICATED MINIMUM 22KAC. SQ-D NQDB, CH OR ITE TYPE.
- TRANSFORMER - SIZE INDICATED SINGLE PHASE 208-480V NEMA ENCLOSURE SQ-D, CH OR ITE.
- PROVIDE PLAQUE IDENTIFYING AS THE "ON-SITE SOLAR PV ELECTRICAL GENERATING EQUIPMENT DISCONNECT". PROVIDE AN ADDITIONAL PERMANENT PLAQUE "WARNING ELECTRIC SHOCK HAZARD. DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION." PROVIDE A MAP ON A PLAQUE INDICATING THE LOCATION OF THE PRIMARY ELECTRICAL SERVICE DISCONNECT. ALL PLAQUES MUST BE APPROVED BY SUBMITTAL TO THE COUNTY PRIOR TO INSTALLATION.

**GENERAL NOTES APPLICABLE TO ROOF MOUNT, GROUND MOUNT AND POLE MOUNT ARRAY**

- ALL METAL PARTS OF RACK SYSTEM SHALL BE CONTINUOUSLY BONDED TOGETHER. ALL SOLAR MODULES SHALL BE BONDED IN SUCH A WAY THAT REMOVAL OF ANY SINGLE MODULE WILL NOT COMPROMISE THE INTEGRITY OF THE BOND TO OTHER PARTS OR MODULES. FOLLOW 690. PART V, GROUNDING IN NEC. FOR POLE PROVIDE GROUND ROD. PROVIDE ALL ASSOCIATED CONNECTORS AND WIRING.
- FOR DC VOLTAGE, IDENTIFY POSITIVE (+) CONDUCTORS WITH RED, NEGATIVE (-) WITH WHITE, AND GROUND AS GREEN.
- PROVIDE INVERTER CONTROL AND COORDINATE PER NEC, 690.61. PROVIDE E-STOP AS DIRECTED BY UTILITY. PROVIDE INVERTER MANUFACTURER RECOMMENDED DATA LOGGING MATERIAL, LABOR, AND COMMISSIONING. PROVIDE ALL ASSOCIATED INSTRUMENTATION FOR A COMPLETE AND FUNCTIONAL SYSTEM. PROVIDE COMPATIBLE INTERFACE TO MONITORING SERVICE AND HARDWARE/SOFTWARE/TRAINING TO CLIENT/OWNER.
- ALL MODULES SHALL HAVE SERIES STRING FUSES BETWEEN THEM.
- EC TO PROVIDE ALL SUNNY BOY ITEMS LISTED BELOW (FOR EACH INVERTER). SUNNY BOY REFERRED HERE AS A MEANS TO COMMUNICATE THE BASIC REQUIREMENTS OR APPROVED EQUIVALS AS LISTED IN THE SPEC. PROVIDE ALL NECESSARY CONDUIT, WIRE, INTERCONNECTIONS, LABOR, AND EQUIPMENT. PROVIDE COORDINATED MATERIAL AND LABOR FOR A COMPLETE AND FUNCTIONAL INSTALLATION (INCLUDES TELECOM AND POWER OUTLETS AS REQUIRED).
  - SUNNY BOY IG INTERFACE CARD/BOX
  - SUNNY BOY IG DATALOGGER & INTERFACE
  - SUNNY BOY IG INTERFACE CARD
  - SUNNY BOY IG INTERFACE SOFTWARE
  - SUNNY BOY IG PUBLIC DISPLAY
  - SUNNY BOY IG DATCOM
  - SUNNY BOY IG CABLES
  - SUNNY BOY IG AMBIENT TEMPERATURE SENSOR, MODULE TEMPERATURE SENSOR, IRRADIATION SENSOR, AND WIND SPEED SENSOR (WHERE INDICATED) INCLUDE PROVISION FOR FUTURE ADDITION OF ITEMS 5.1 THRU 5.7.
- FOR THE SERIES WIRED STRINGS OF SOLAR MODULES, USE FLEXIBLE WATERPROOF CONDUIT AND FITTINGS. E.C. MAY ALSO USE MANUFACTURER-PROVIDED PIN-AND-SLEEVE (OR OTHER) ONLY WHERE ANY OTHER CONNECTION WOULD VOID THE WARRANTY. ACCEPTABLE CONDUCTORS ARE USE-2, THHN-2, OR RHN-2. SOLDER CONNECTIONS ONLY. ON SERIES-TO-PARALLEL CONNECTIONS USE LISTED PRESSURE CONNECTORS AND USE HEAT-SHRINK TUBING LISTED FOR OUTDOOR, SUNLIGHT, HIGH TEMPERATURE, AND WET LOCATIONS. FOR ALL PIN-AND-SLEEVE OR SIMILAR PLUG-IN CONNECTIONS, EC SHALL UTILIZE ANTI-CORROSIVE ZINC PASTE TYPICAL OF BURNING "PENTROX" OR OTHER BY APPROVED SUBMITTAL. NO EXCEPTIONS. THIS PASTE IS TO BE APPLIED IN A THIN LAYER AT THE METAL PIN END ONLY AND SHALL NOT TRESPASS BEYOND THE RUBBER SLEEVE BARRIER.
- BREAKERS USED IN ANY PANEL FOR SOLAR PV INTERCONNECTIONS SHALL BE RATED FOR BACK-FEEDING AND BE APPROVED BY SUBMITTAL.
- PROVIDE COMPLETE MARKING AND LABELING OF ELECTRICAL EQUIPMENT PER ALL REQUIREMENTS OF NEC ARTICLE 690.
- FOR ROOF MOUNTED INSTALLATION PV SOLAR ARRAY MAY NOT ENDOUCH ON AN SPACE ALLOCATED FOR ROOF MOUNTED EQUIPMENT. ADVISE A/E OF ANY POTENTIAL CONFLICTS PRIOR TO PROCEEDING FOR RESOLUTION.
- ROOF PLAN INDICATES PROPOSED STRING CONFIGURATION WHICH MAY BE ADJUSTED BY THE EC TO FIT FINAL LAYOUT. ANY CHANGES MUST BE APPROVED PRIOR TO PROCEEDING.
- ALL SOLAR EQUIPMENT SHALL INCLUDE MINIMUM 20 YEAR WARRANTY EXCEPT WHERE OTHERWISE INDICATED.
- ALL CONDUITS ROUTED ALONG ROOF AND EXPOSED TO DIRECT SUNLIGHT SHALL BE DERATED DEPENDING ON HOW CLOSE TO THE ROOF THEY ARE RUN. SEE NEC, 310.15(B)(2)(C).

**RACKING SYSTEM - FLAT ROOF**

DFW POWER - FAB CRS OR EQUAL NON-PENETRATING FLAT ROOF MOUNTING SYSTEM:

- TOP CLAMPING.
- CORROSION RESISTANT ANODIZED ALUM. (MIN. .063")
- DESIGNED FOR 90MPH WITH MODULES AT 35°
- GRID WORK CONSISTING OF INTERCONNECTED HIGH STRENGTH 6000 SERIES STRUCTURAL ALUMINUM DOCKS, RAILS AND MODULE SUPPORTS.
- SYSTEMS HAVE BEEN DESIGNED ON FULL PANEL ARRAY AND IS BASED ON A 35 DEGREE TILT OF THE MODULES AND A DESIGN WIND OF 90MPH.
- RACK SYSTEM INCLUDES:
  - PREFAB ALUMINUM DOCKS WITH 1" POLYSTYRENE INSULATION ON BOTTOM OF DOCK AND RAILS
  - ALUMINUM RAILS, ANGLES, SPLICE PLATE BRACKETS, CLAMPS (CLAMPS SHALL BE HEAVY DUTY 3045S) T-BARS, GROUNDING CLIPS AND BONDING JUMPEERS
  - MISC. BOLTS, NUTS, WASHERS ETC. AS REQUIRED, EXCEPT E.C. TO PROVIDE STAINLESS STEEL HARDWARE, SCREWS AND WASHERS TO ATTACH PANELS TO DOCK
  - QUANTITY OF ALL MATERIAL TO ASSEMBLE AND INSTALL THE DOCK/RACKING SYSTEM
  - COMPLETE INSTRUCTIONS TO ASSEMBLE AND INSTALL ENTIRE DOCK/RACKING SYSTEM AND SPECIFIC DETAILS OF THE ENTIRE SYSTEM ARE AVAILABLE FROM SOLAR DOCK.

E.C. SHALL FURNISH AND INSTALL IN 10KW BASE BID 39 MODULES AND APPROX. 234 BALLAST BLOCKS. CONFIRM FINAL QUANTITY OF BLOCKS REQUIRED WITH SUPPLIER. EACH BALLAST BLOCK SHALL BE APPROXIMATELY 4'X8'X16" SOLID CONCRETE WHICH WEIGH APPROXIMATE 30 POUNDS EACH. MINIMUM 1" UNDER LAYMENT SHALL BE INSTALLED BETWEEN DOCKS, RAILS AND ROOF. E.C. SHALL PROVIDE MINIMUM 1" UNDER LAYMENT AS REQUIRED TO COMPENSATE FOR SLOPE IN ROOF AND LEVEL OUT EXTRUSIONS.

NOTE: THE WEIGHT OF THE MODULES, BALLAST BLOCKS AND ALL RACKING COMPONENTS IS AVERAGE 3.5 PSF. WARRANTY: 25 YEAR ON DOCK. 5KW ARRAY, E.C. SHALL FURNISH AND INSTALL IN ALTERNATE BID 20 MODULES AND APPROX. 120 BALLAST BLOCKS. CONFIRM FINAL QUANTITY OF BLOCKS REQUIRED WITH SUPPLIER.

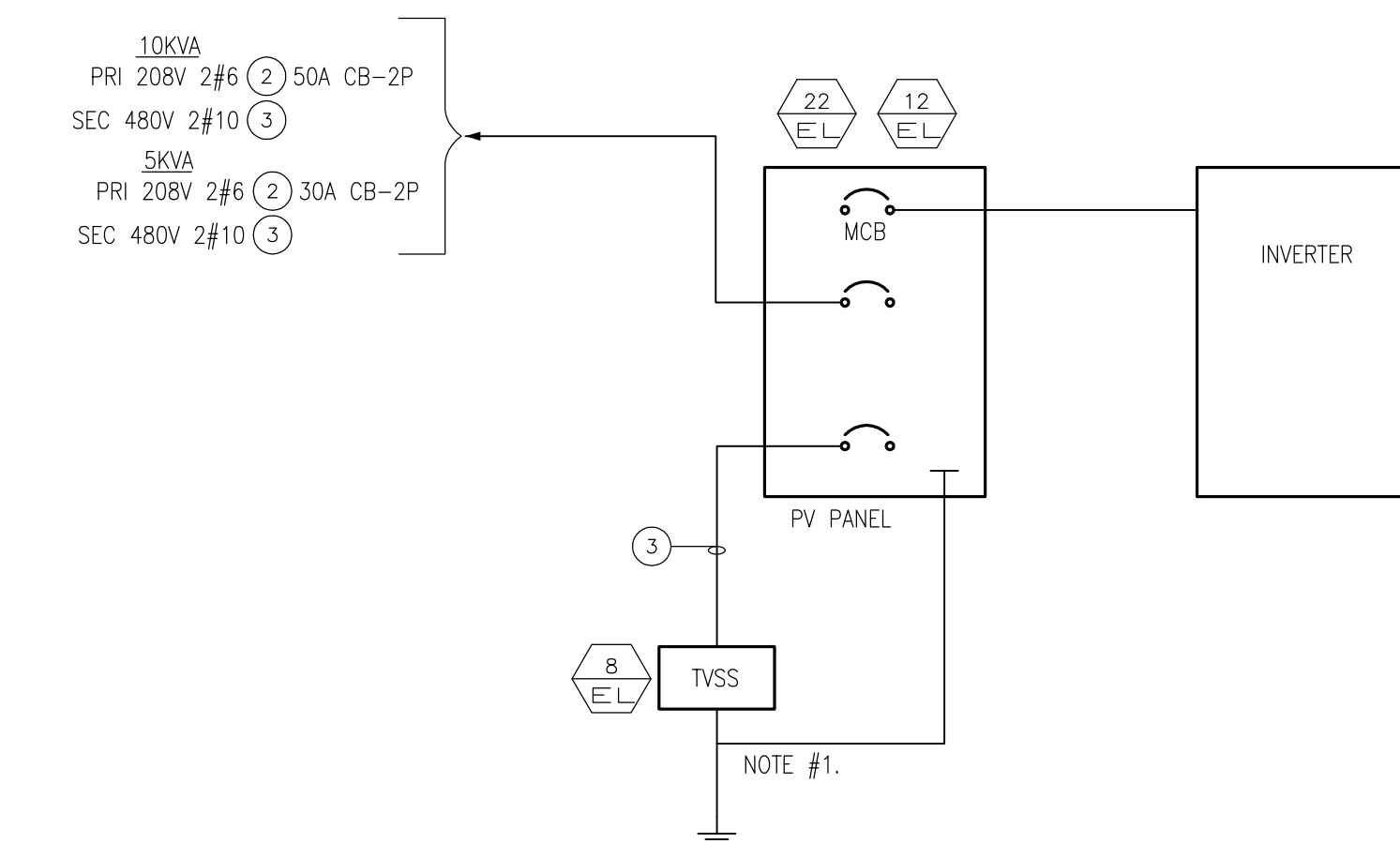
**RACKING SYSTEM - SLOPED ROOF**

- THE SPECIFICATION OF THE FLAT ROOF SHALL APPLY IN ADDITION TO THE FOLLOWING COMMENTS:
- PROVIDE RAILS 5'-0" ON CENTER, PARALLEL TO THE ROOFING FLUTES. RAILS SHALL BE SCREWED OR BOLTED TO THE METAL DECK. MINIMUM 4'-0" ON CENTER. EACH PENETRATION MUST BE SEALED USING SEALANT AND FLASHING MATERIALS AVAILABLE FROM SPK OR OTHERWISE APPROVED. CONFIRM WITH COUNTY'S ROOFING CONTRACTOR PRIOR TO PROCEEDING IN ORDER TO MAINTAIN INTEGRITY AND WARRANTY OF ROOF.
  - RAILS MUST BE APPROXIMATELY 3" HIGH SUCH THAT THE SOLAR DOCK SHALL BE SUPPORTED BY THE RAILS AND SHALL NOT BE SUPPORTED BY THE FLUTE OF THE METAL DECK. DOCKS IN TURN SHALL BE ATTACHED TO THE RAILS.

**RACKING SYSTEM - GROUND AND POLE MOUNT**

DFW POWER FAB OR EQUAL

- CORROSION RESISTANT ANODIZED ALUMINUM (MIN. .063")
- DESIGNED FOR 90MPH WITH MODULES AT 35°
- GRID WORK CONSISTING OF INTERCONNECTED HIGH STRENGTH 6000 SERIES
- ALUMINUM RAILS, ANGLES, SPLICE PLATE BRACKETS, CLAMPS (3045S) T-BARS, GROUNDING CLIPS AND BONDING JUMPEERS
- ZINC PLATED RACK ASSEMBLY HARDWARE. GROUND MOUNT ARRAY. E.C. SHALL PROVIDE SS BOLTS AND WASHERS TO ANCHOR STRUCTURAL ASSEMBLY TO CONCRETE BASE. POLE MOUNT ARRAY: SEE DETAIL ON DRAWING FOR CONCRETE BASE AND REQUIREMENTS FOR POLE MOUNTED TRACKER.
- MISC. BOLTS, NUTS, WASHERS ETC. AS REQUIRED. E.C. TO PROVIDE SS SCREWS AND WASHERS TO ATTACH TO FRAMEWORK.
- ARRAY CONDUCTORS FOR GROUND MOUNTED SYSTEMS (OR PORTIONS OF POLE MOUNT SYSTEMS BELOW 8'-0") MUST BE MADE "NON ACCESSIBLE" BY CONDUITS, SCREENING OR OTHER SIMILAR METHODS. NO PORTION OF THIS WIRING SHALL BE READILY ACCESSIBLE TO NON AUTHORIZED PERSONNEL.



**3 TYPICAL PV PANEL DETAIL**

**NOTES:**

- BOND TO EXISTING GROUND SYSTEM. PROVIDE GROUND RODS AT NEW METER LOCATION.

Revisions

Sheet

**GENERAL NOTES AND DETAILS**

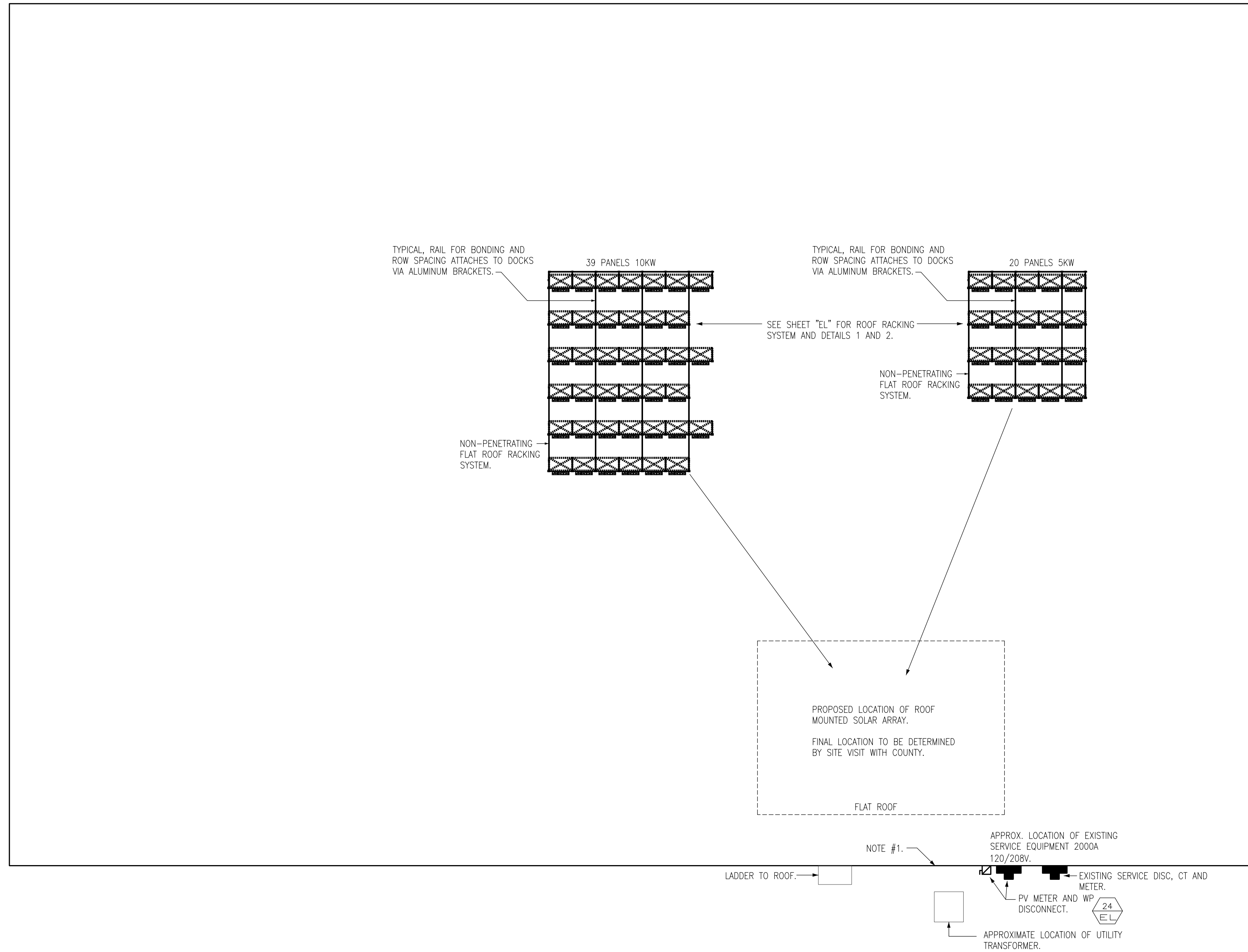
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**Dane County Solar  
Photovoltaic Facilities**

Date  
November 12, 2010

Project No.  
10-1142.01

Sheet No.

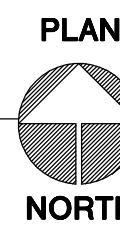




**1 DANE COUNTY JOB CENTER PHOTOVOLTAIC PLAN**

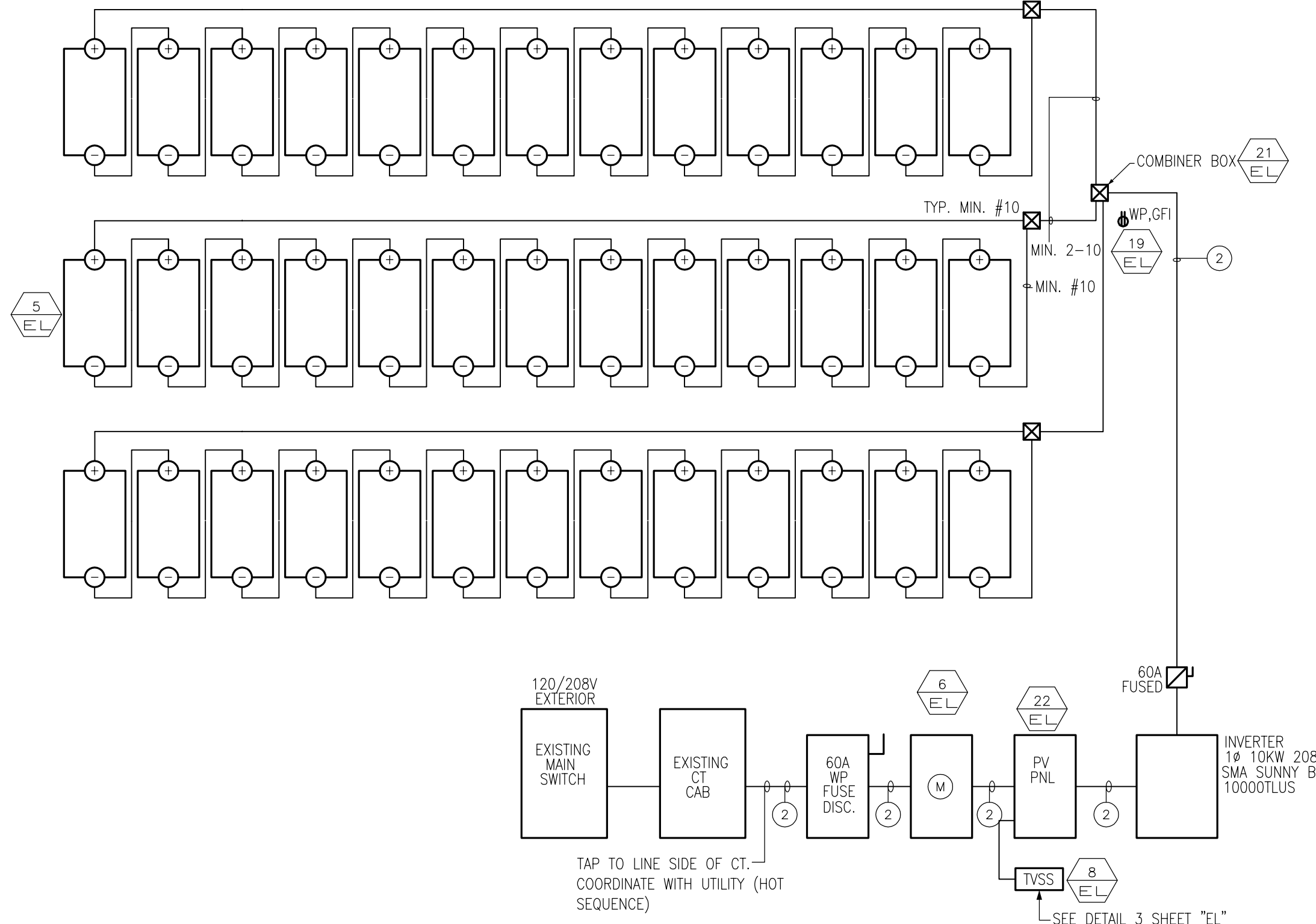
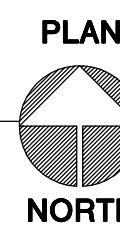
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NOTES:  
1. APPROXIMATE LOCATION OF PV DISCONNECT SWITCH, INVERTER, PV PANEL AND TVSS IN EXISTING ELECTRICAL ROOM.



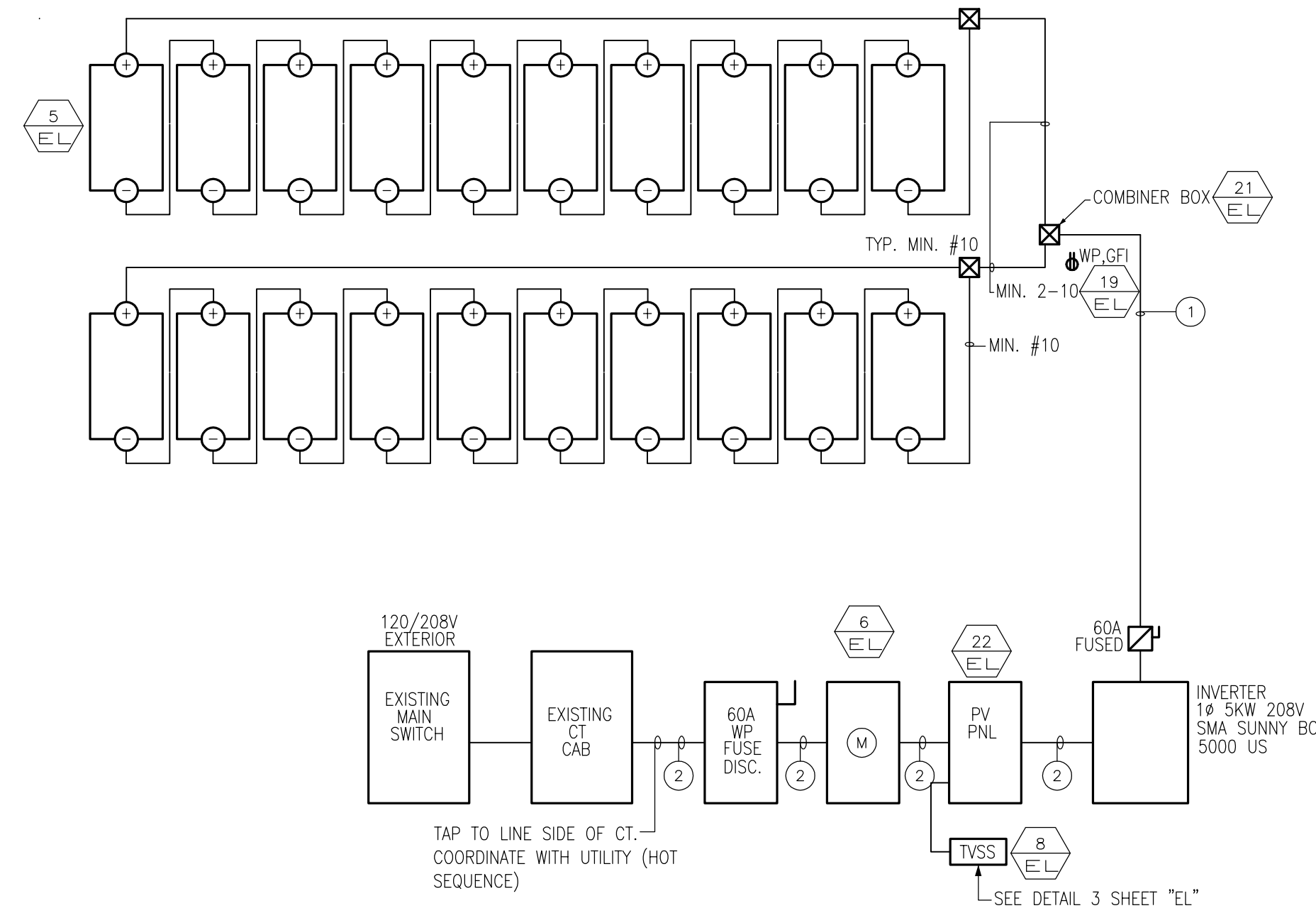
**2 DANE COUNTY JOB CENTER SOLAR ARRAY PROPOSED LOCATION ARIAL SITE VIEW**

NTS



**3 PV SYSTEM WIRING DIAGRAM 10KW - BASE BID**

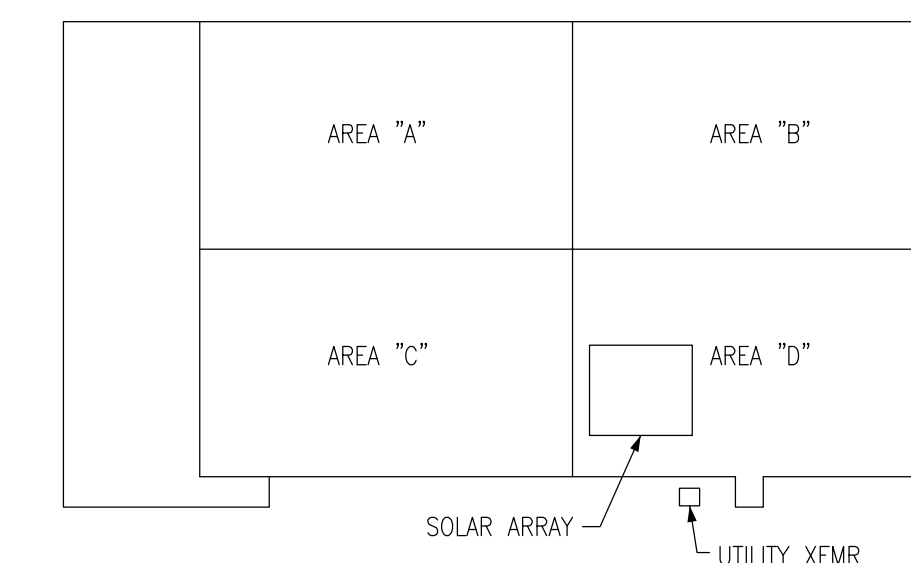
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**4 PV SYSTEMS WIRING DIAGRAM 5KW - ALTERNATE BID**

NTS

SEE SHEET EL:  
FOR GENERAL NOTES, FOR PLAN NOTES, NOTES APPLICABLE TO SPECIFIC RACKING DETAILS AND FOR FEEDER SCHEDULE.



**ROOF KEY PLAN**

Revisions

Sheet  
**DANE COUNTY JOB CENTER 1819 ABERG AVENUE MADISON, WI 53704 PHOTOVOLTAIC ROOF PLAN AND DETAILS**

Project  
**Dane County Solar Photovoltaic Facilities**

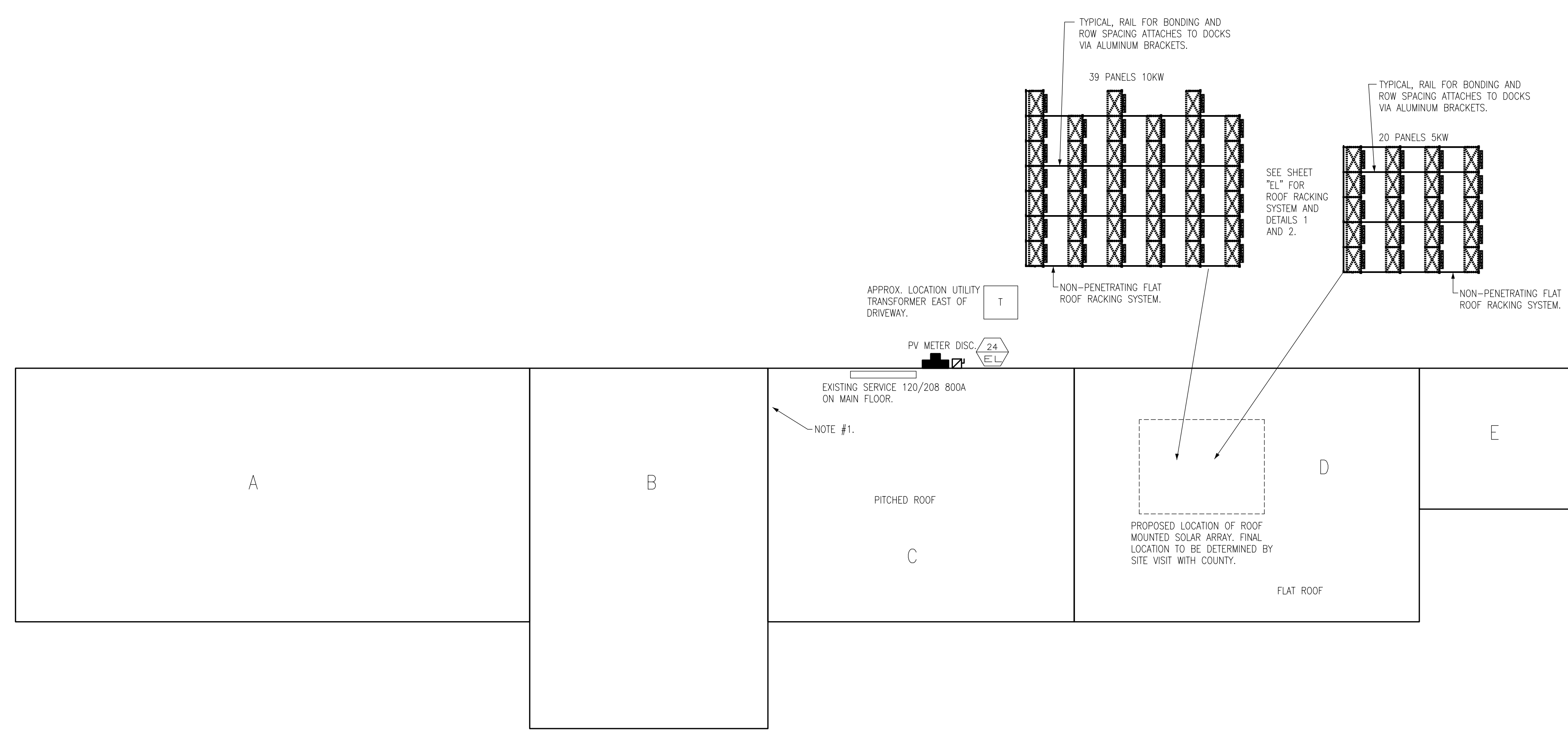
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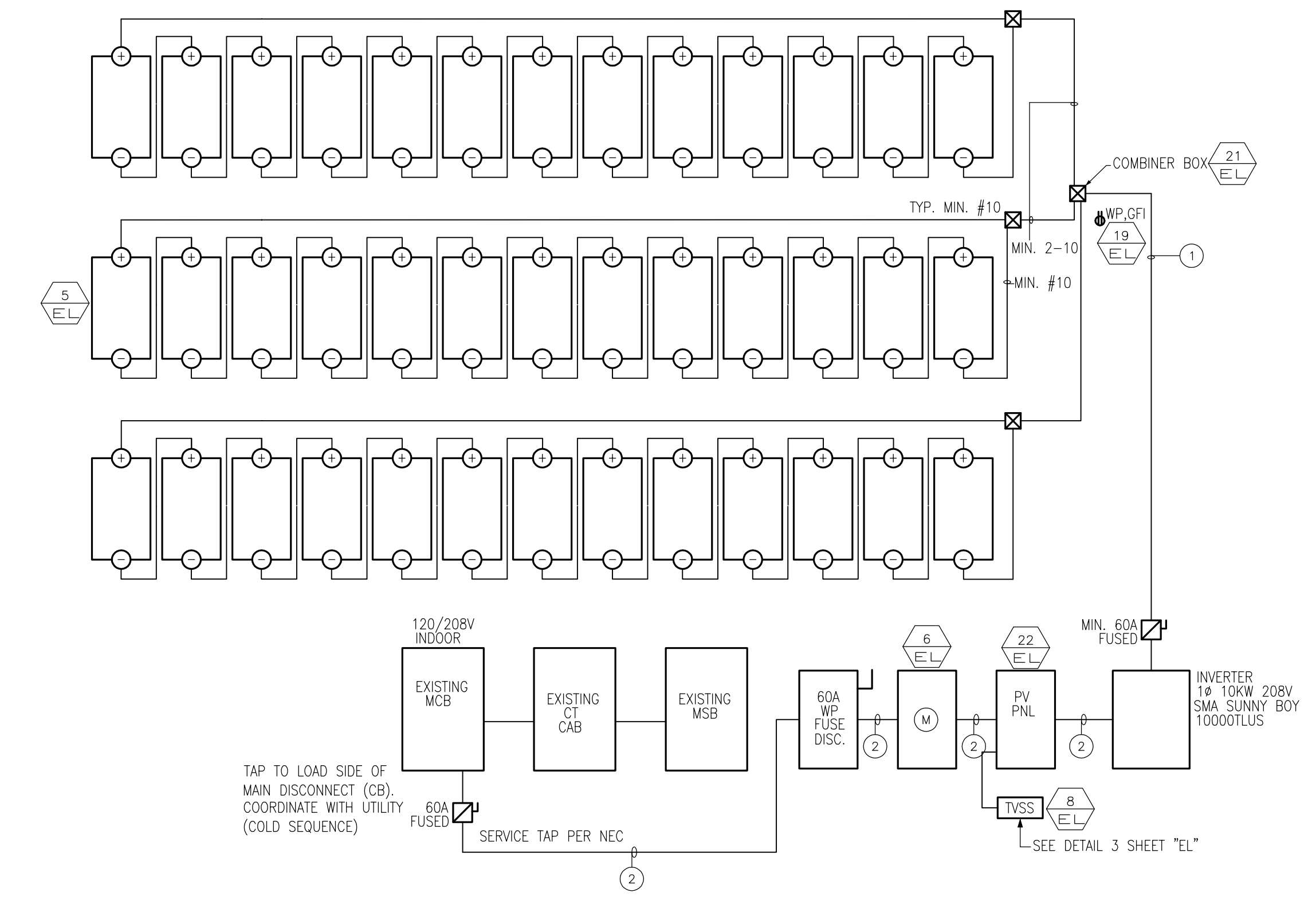
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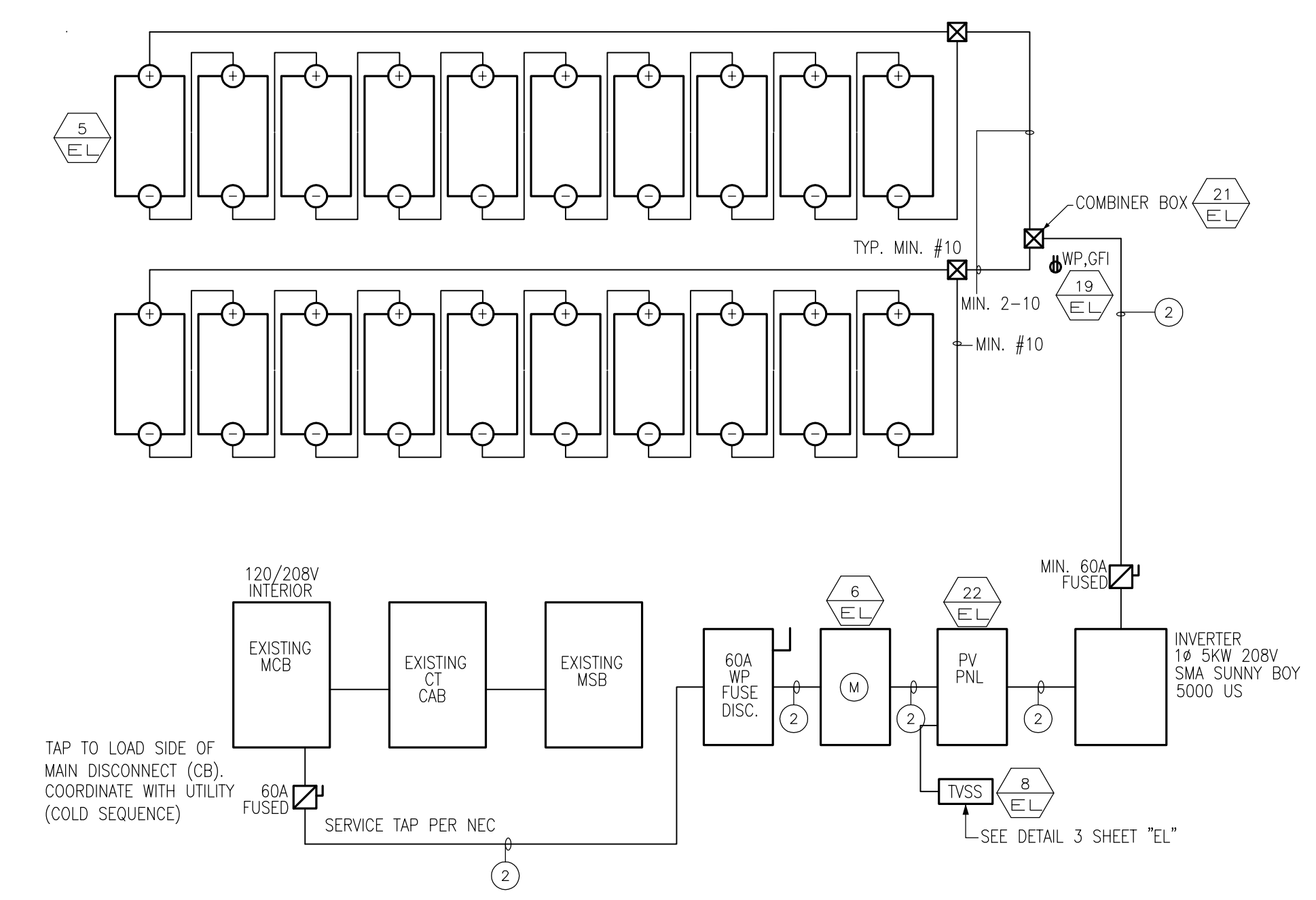
**1 DANE COUNTY HIGHWAY GARAGE PHOTOVOLTAIC PLAN**  
NTS  
NOTES:  
1. APPROXIMATE LOCATION OF PV DISCONNECT SWITCH, INVERTER, PV PANEL, TVSS AND SERVICE TAP DISCONNECT SWITCH TO BE DETERMINED IN THE FIELD.



**3 PV SYSTEM WIRING DIAGRAM 10KW - BASE BID**  
NTS

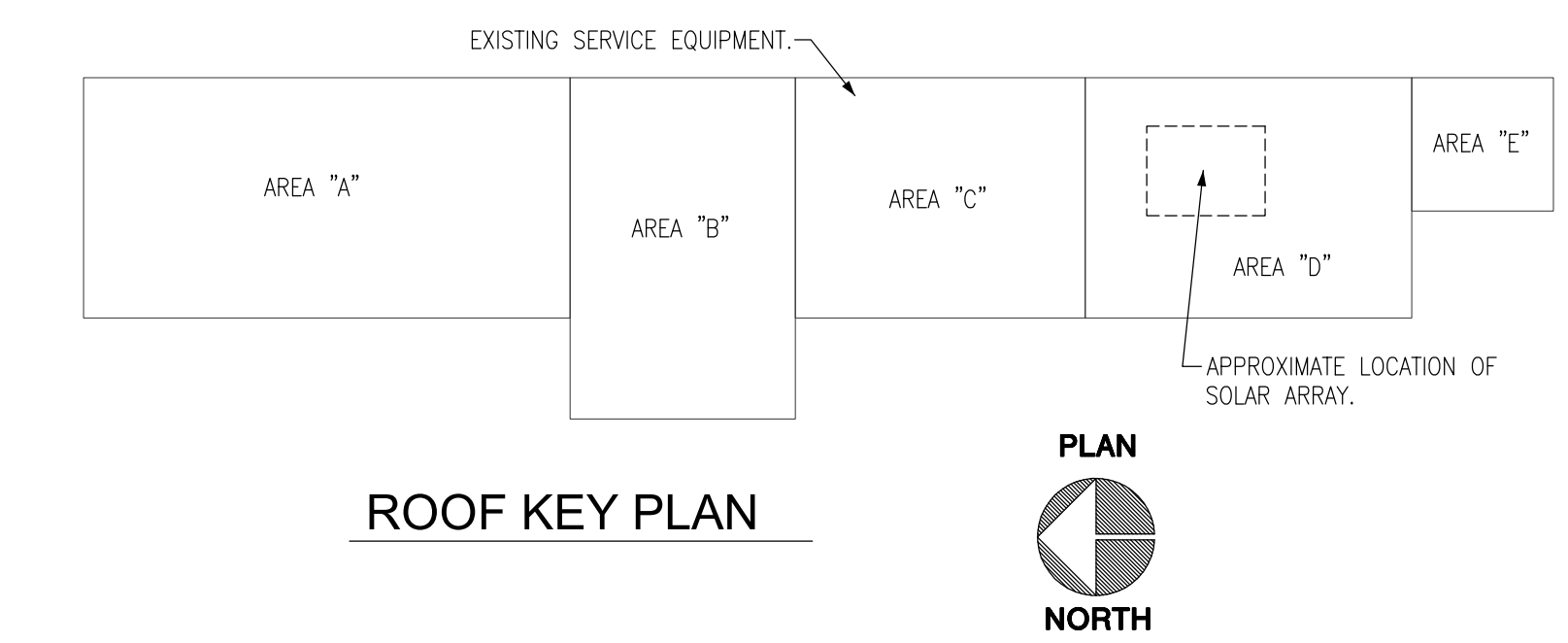


**2 DANE COUNTY HIGHWAY GARAGE SOLAR ARRAY PROPOSED LOCATION AERIAL VIEW**  
NTS



**4 PV SYSTEMS WIRING DIAGRAM 5KW - ALTERNATE BID**  
NTS

SEE SHEET E.L.  
FOR GENERAL NOTES, FOR PLAN NOTES, NOTES APPLICABLE TO SPECIFIC RACKING DETAILS AND FOR FEEDER SCHEDULE.



**ROOF KEY PLAN**  
PLAN  
NORTH

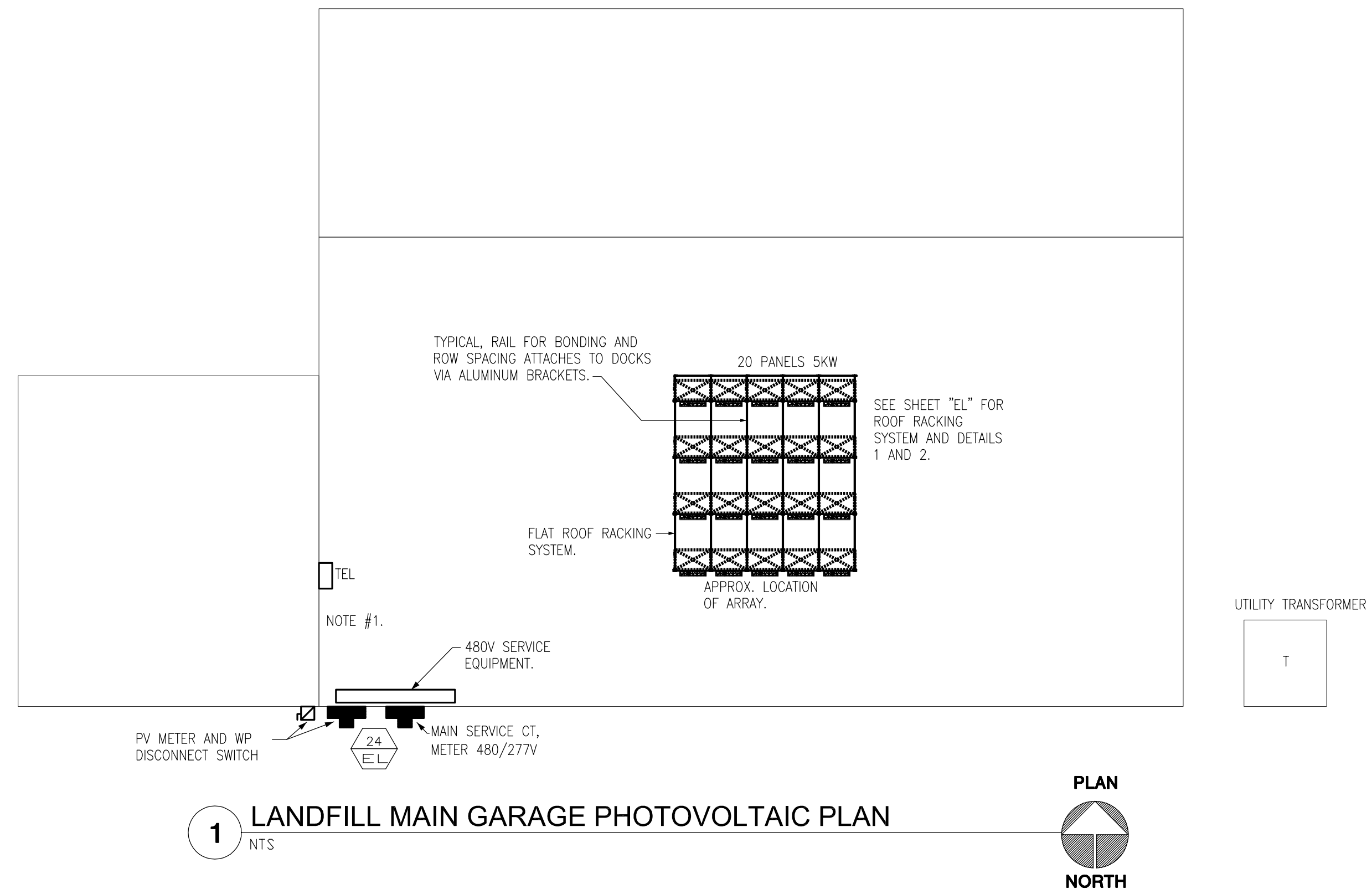
Revisions

Sheet  
**DANE COUNTY HIGHWAY GARAGE 2302 FISH HATCHERY ROAD MADISON, WI 53713 PHOTOVOLTAIC ROOF PLAN AND DETAILS**

Project  
**Dane County Solar Photovoltaic Facilities**

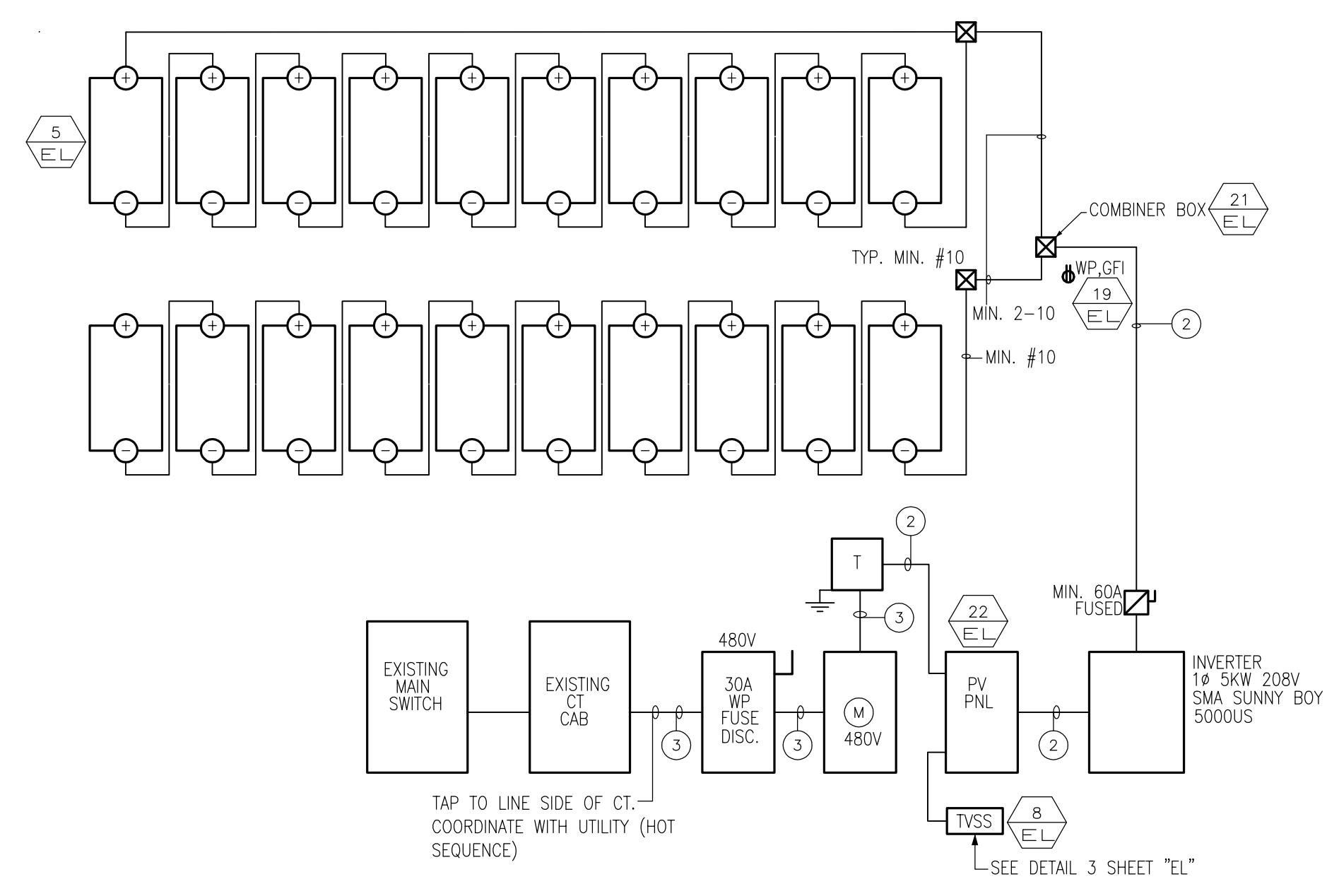
Date  
November 12, 2010  
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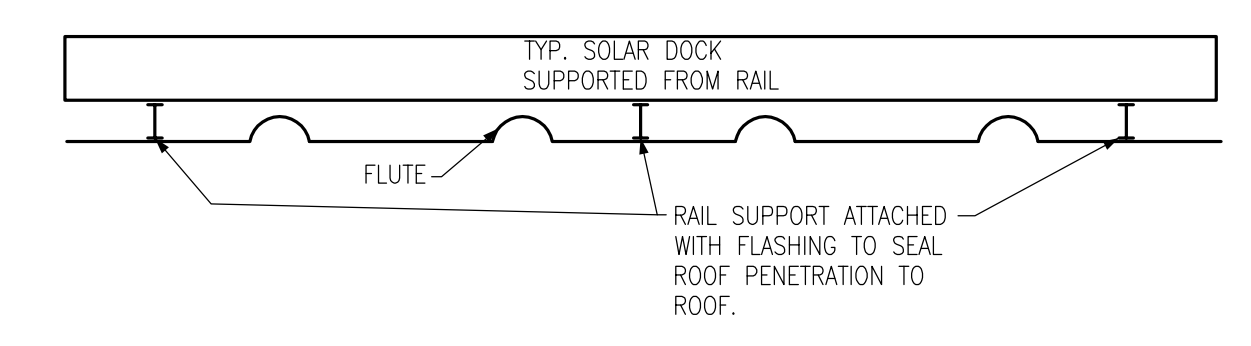


**1** LANDFILL MAIN GARAGE PHOTOVOLTAIC PLAN  
NTS

NOTES:  
1. APPROXIMATE LOCATION OF PV DISCONNECT SWITCH, INVERTER, PV PANEL, TVSS AND 5KVA TRANSFORMER.

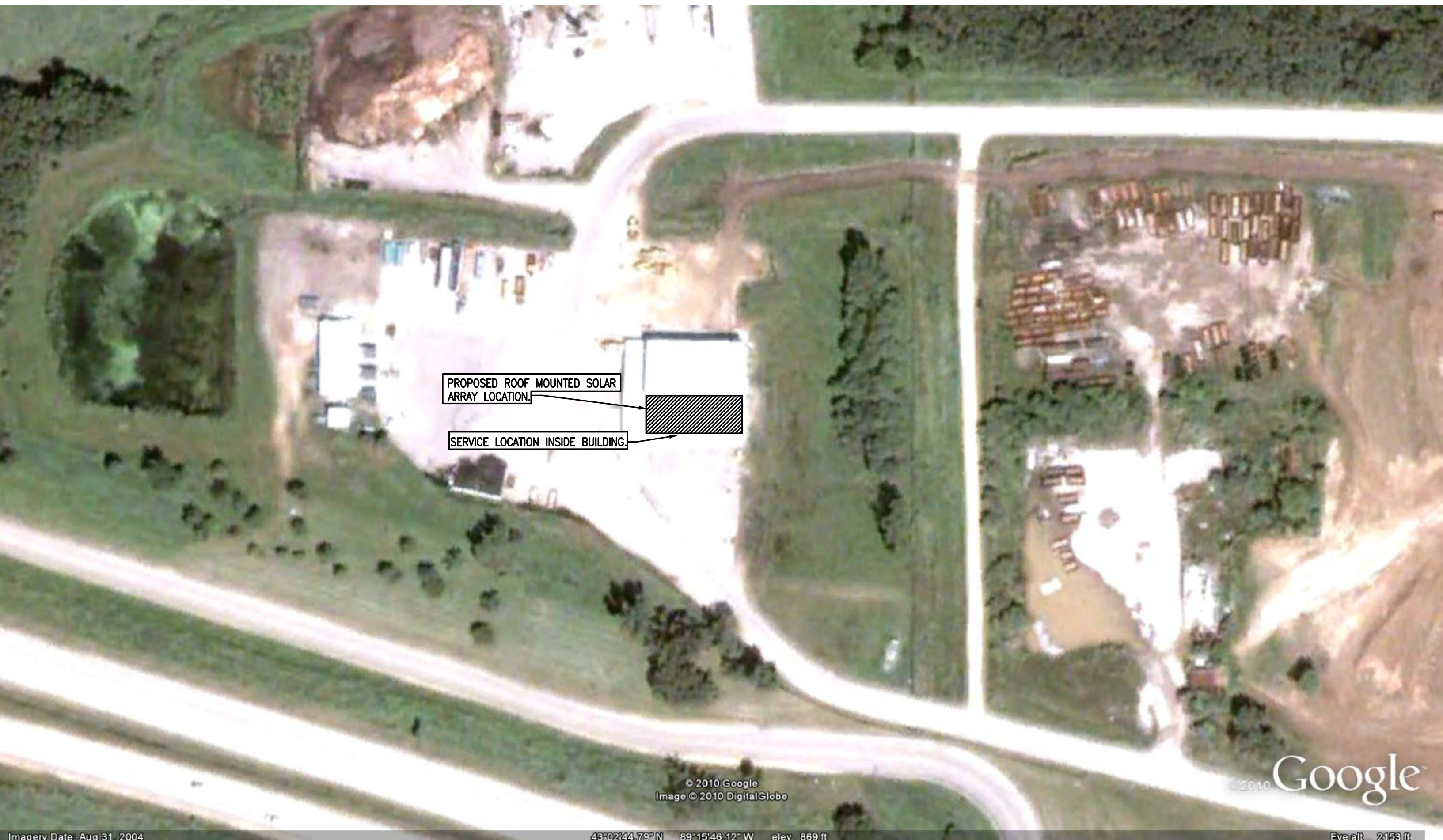


**3** PV SYSTEMS WIRING DIAGRAM 5KW - ALTERNATE BID  
NTS



**4** ROOF DETAIL - TYPICAL  
NTS

NOTES:  
1. SEE SHEET "EL" SLOPED ROOF FOR INSTALLATION INSTRUCTIONS.



**2** LANDFILL MAIN GARAGE SOLAR ARRAY PROPOSED LOCATION AERIAL VIEW  
NTS

SEE SHEET EL:  
FOR GENERAL NOTES, FOR PLAN NOTES, NOTES APPLICABLE TO SPECIFIC RACKING DETAILS AND FOR FEEDER SCHEDULE.

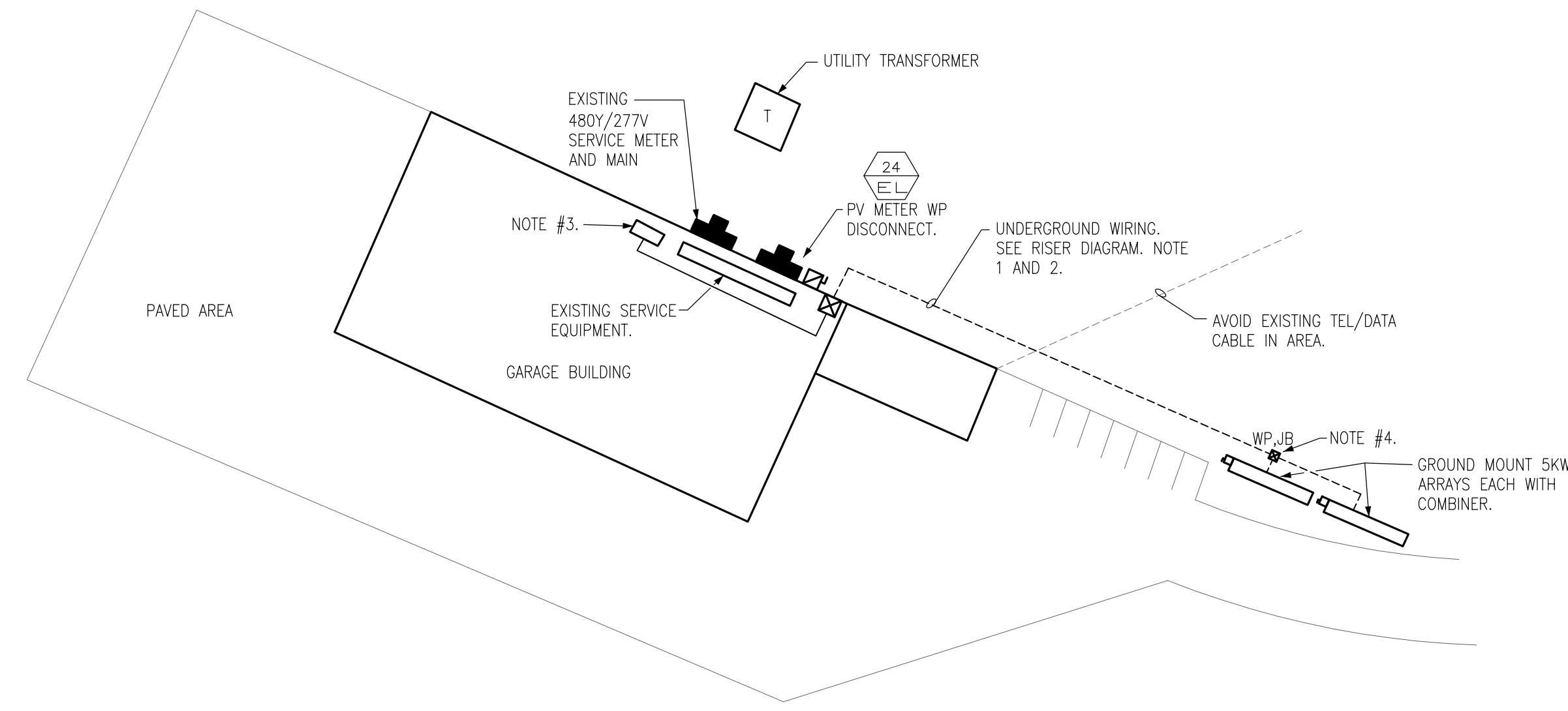
Revisions

Sheet  
**LANDFILL MAIN GARAGE 7102 U.S. HIGHWAY 12 & 18 MADISON, WI 53718 PHOTOVOLTAIC ROOF PLAN AND DETAILS**

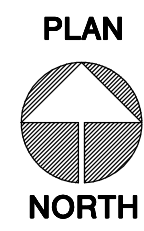
Project  
**Dane County Solar Photovoltaic Facilities**

Date  
November 12, 2010  
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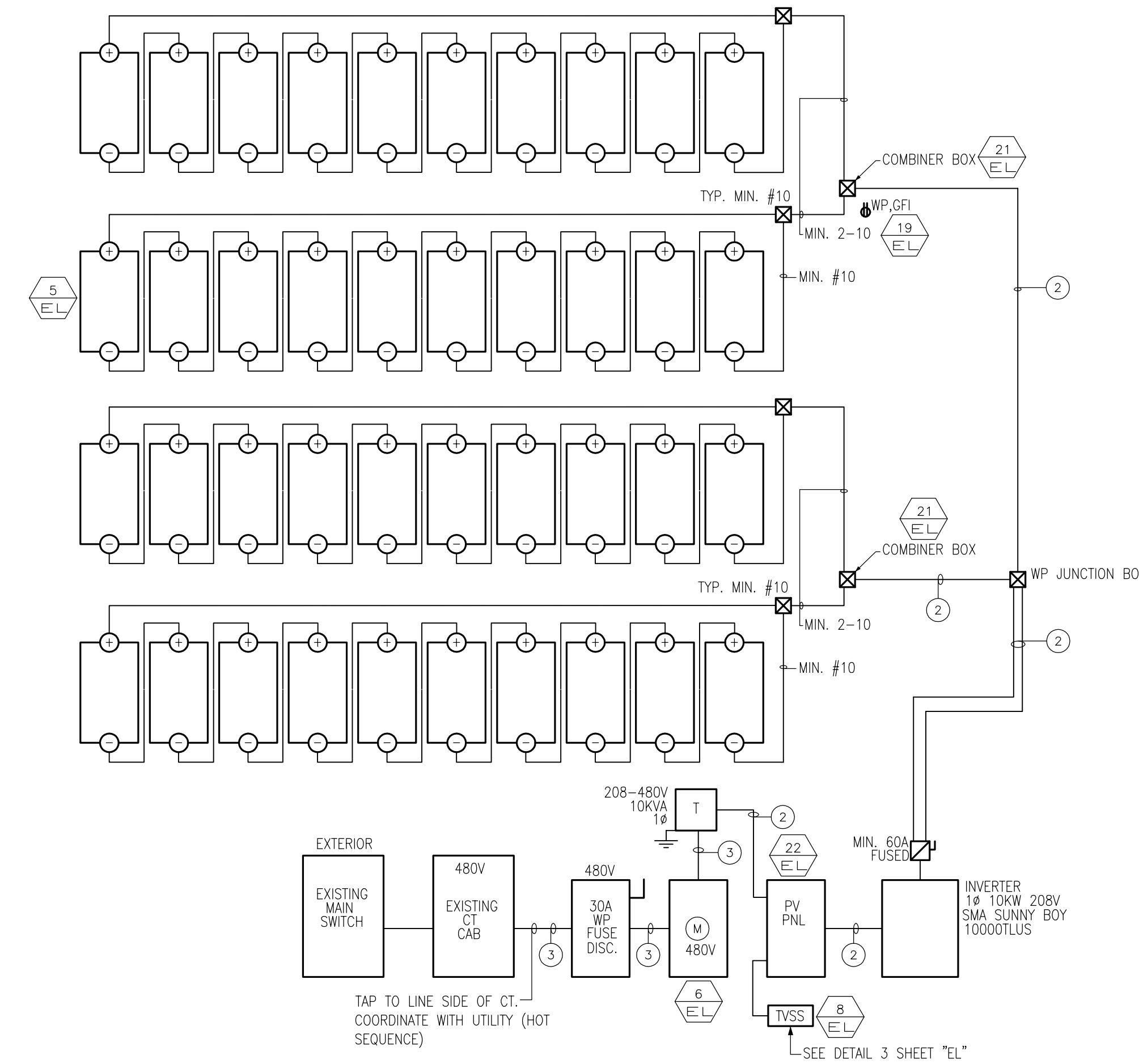




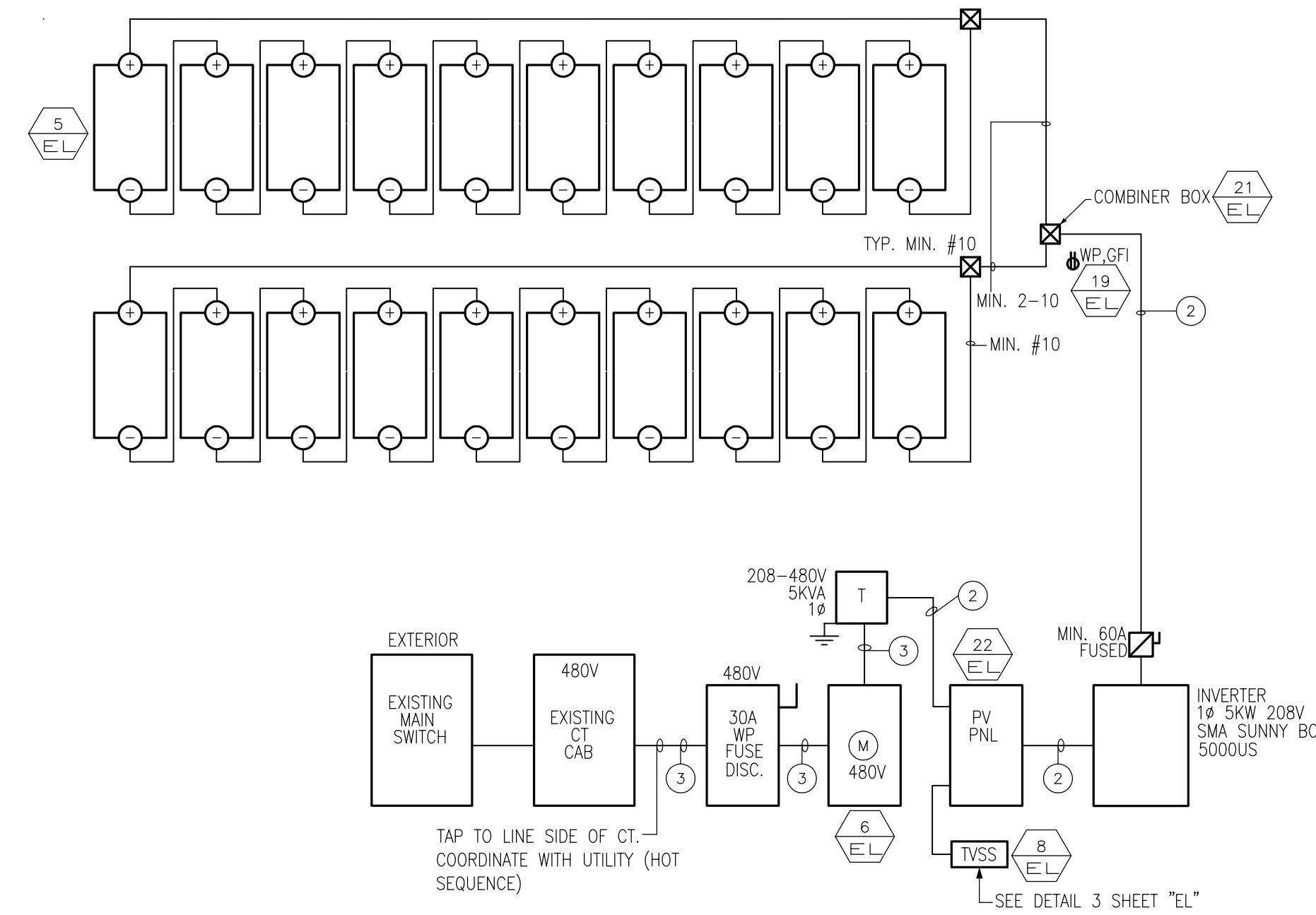
**1** SPRINGFIELD CORNERS HIGHWAY GARAGE PHOTOVOLTAIC PLAN  
NTS



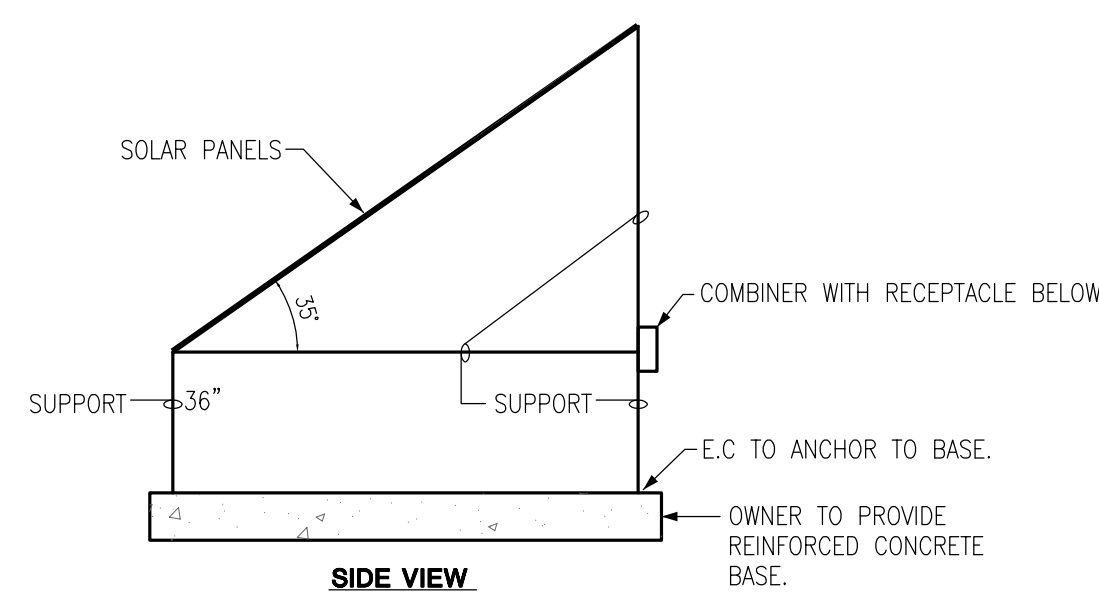
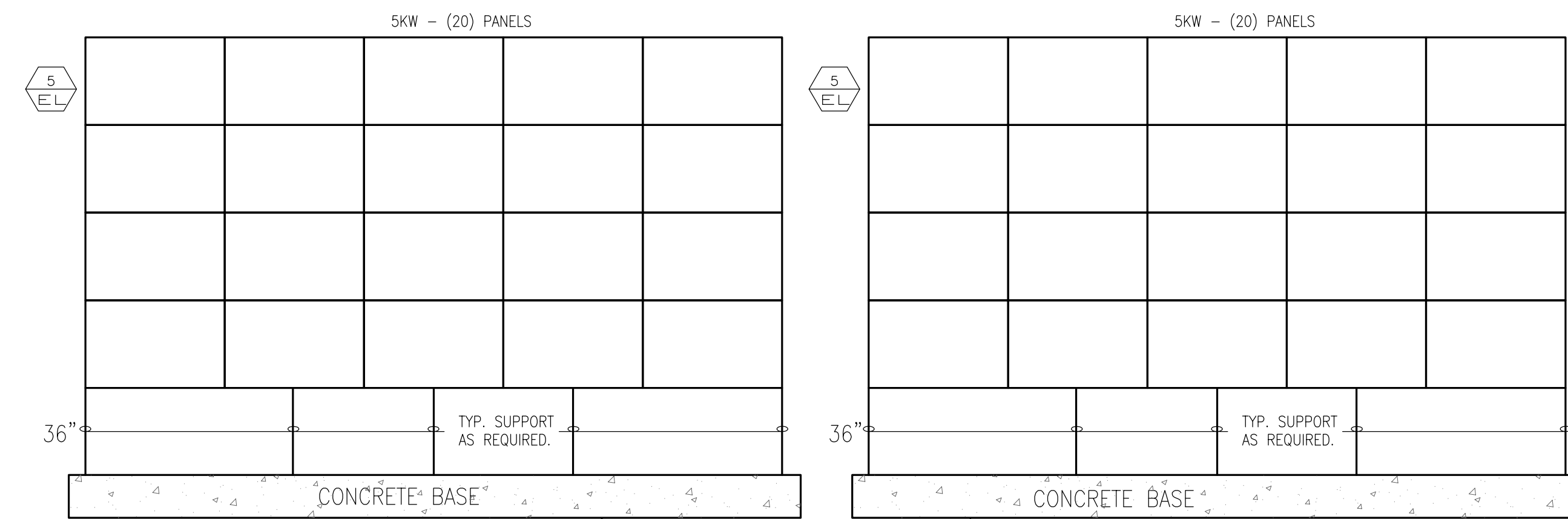
- NOTES:
1. U.G. WIRING - SEE RISER DIAGRAM. MIN. 1/4" PVC FOR INVERTER OUTLET AND 1" PVC FOR 110V CIRCUIT.
  2. TRENCH - 30" BFG. RESTORE SURFACE TO ORIGINAL CONDITION. USE CLEAN BACKFILL.
  3. APPROXIMATE LOCATION OF PV DISCONNECT, INVERTER, PV PANEL, TVSS AND TRANSFORMER.
  4. MOUNT JUNCTION BOX ON SIDE OF ARRAY STRUCTURE.



**3** PV SYSTEM WIRING DIAGRAM 10KW - BASE BID  
NTS



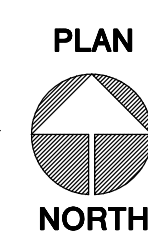
**4** PV SYSTEMS WIRING DIAGRAM 5KW - ALTERNATE BID  
NTS



**5** SOLAR ARRAY DETAILS  
NTS



**2** SPRINGFIELD CORNERS HIGHWAY GARAGE SOLAR ARRAY PROPOSED LOCATION AERIAL VIEW  
NTS



SEE SHEET EL:  
FOR GENERAL NOTES, FOR PLAN NOTES, NOTES APPLICABLE TO SPECIFIC RACKING DETAILS AND FOR FEEDER SCHEDULE.

Revisions

Sheet  
**SPRINGFIELD  
CORNERS HIGHWAY  
GARAGE 6159 U.S.  
HIGHWAY 12  
SPRINGFIELD  
CORNERS, WI 53529  
PHOTOVOLTAIC ROOF  
PLAN AND DETAILS**

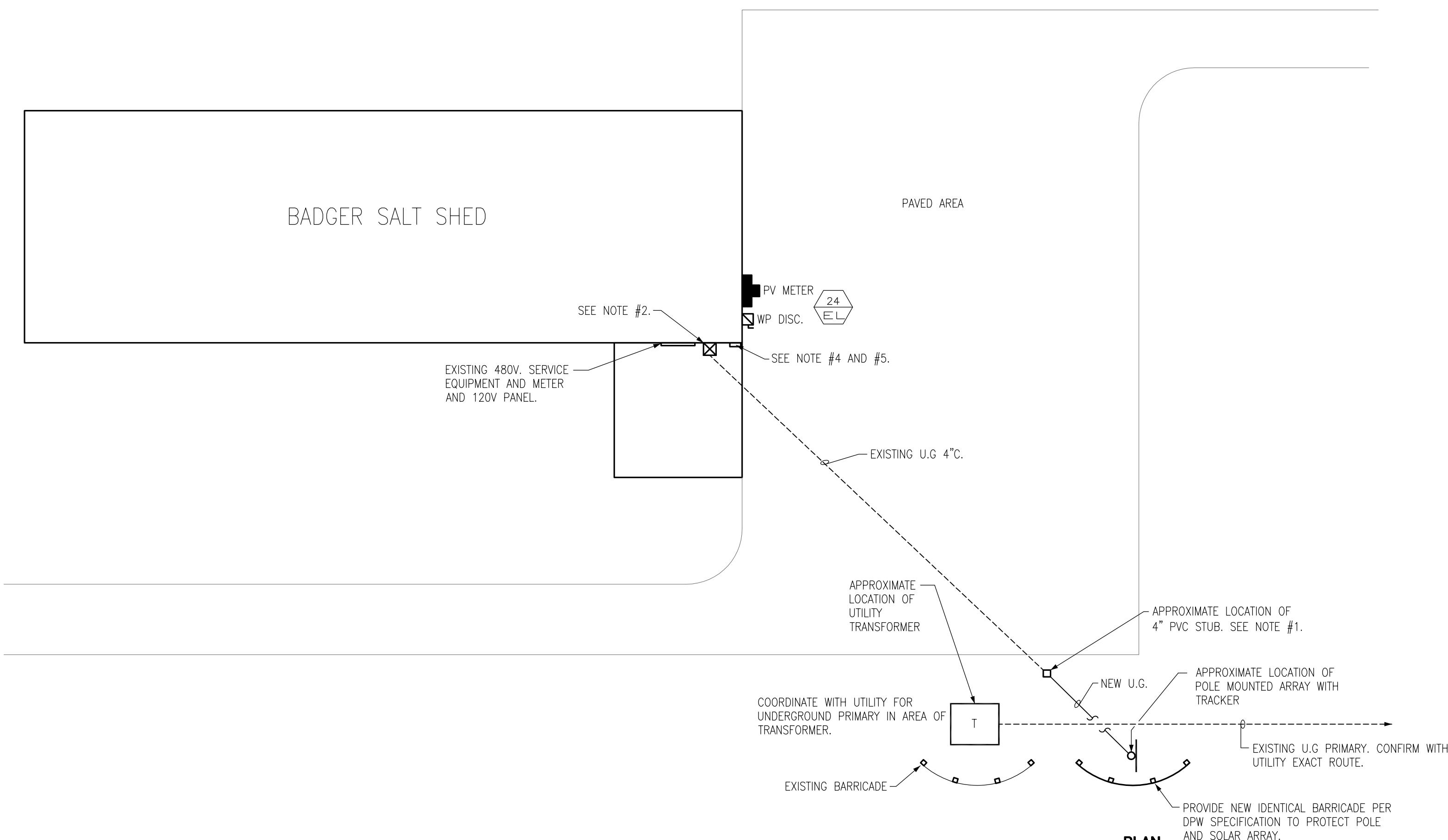
Project  
**Dane County Solar  
Photovoltaic Facilities**

Date  
November 12, 2010

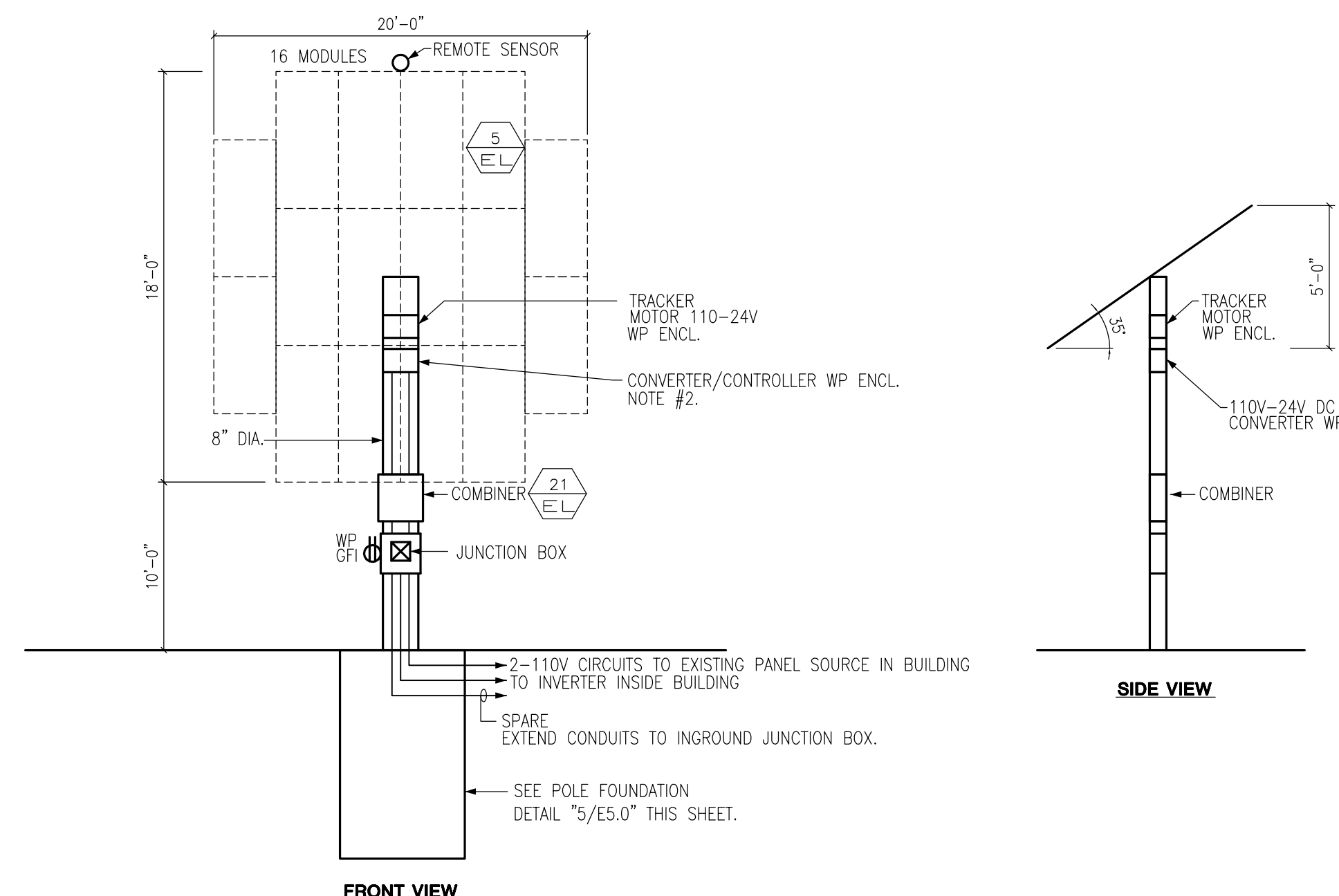
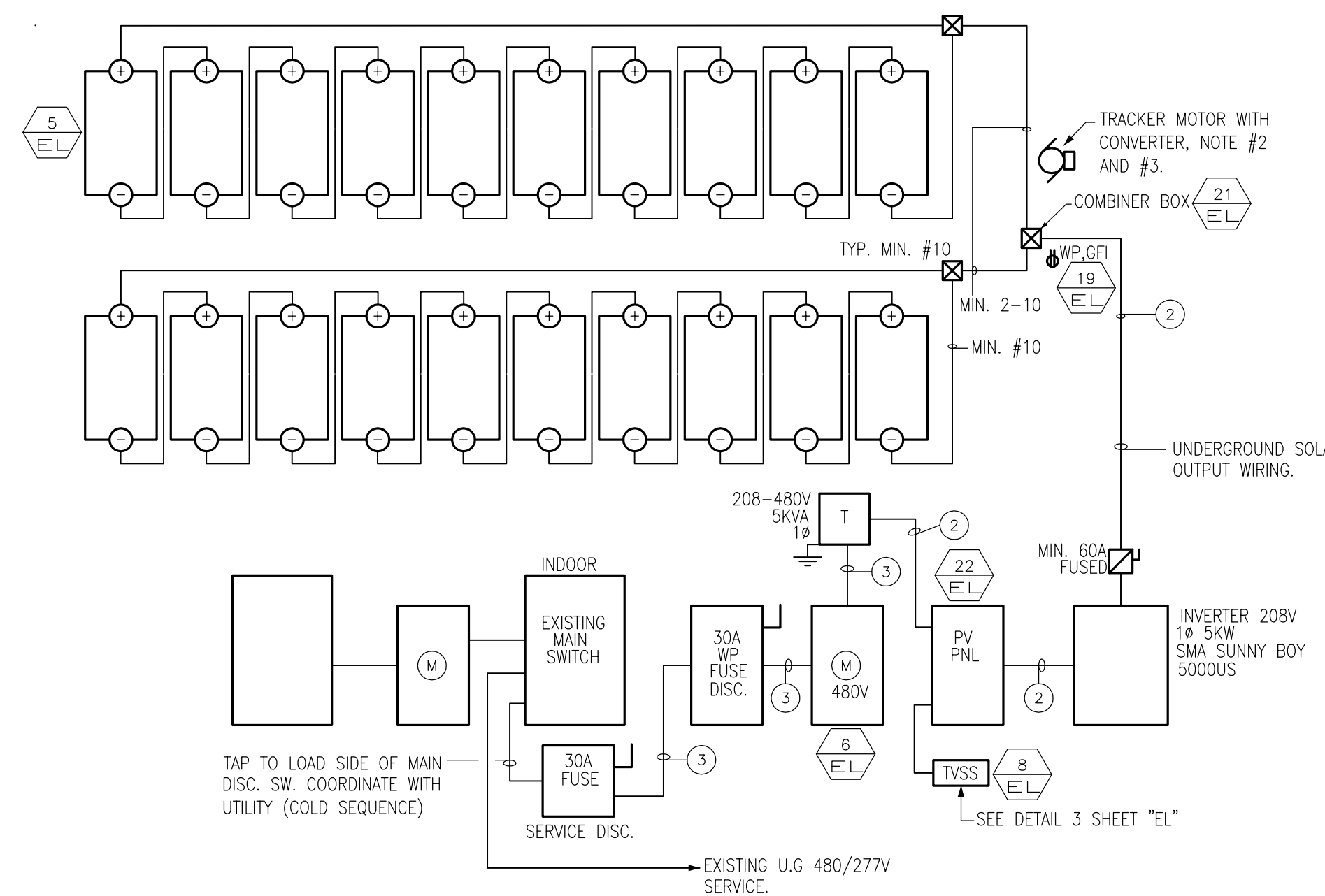
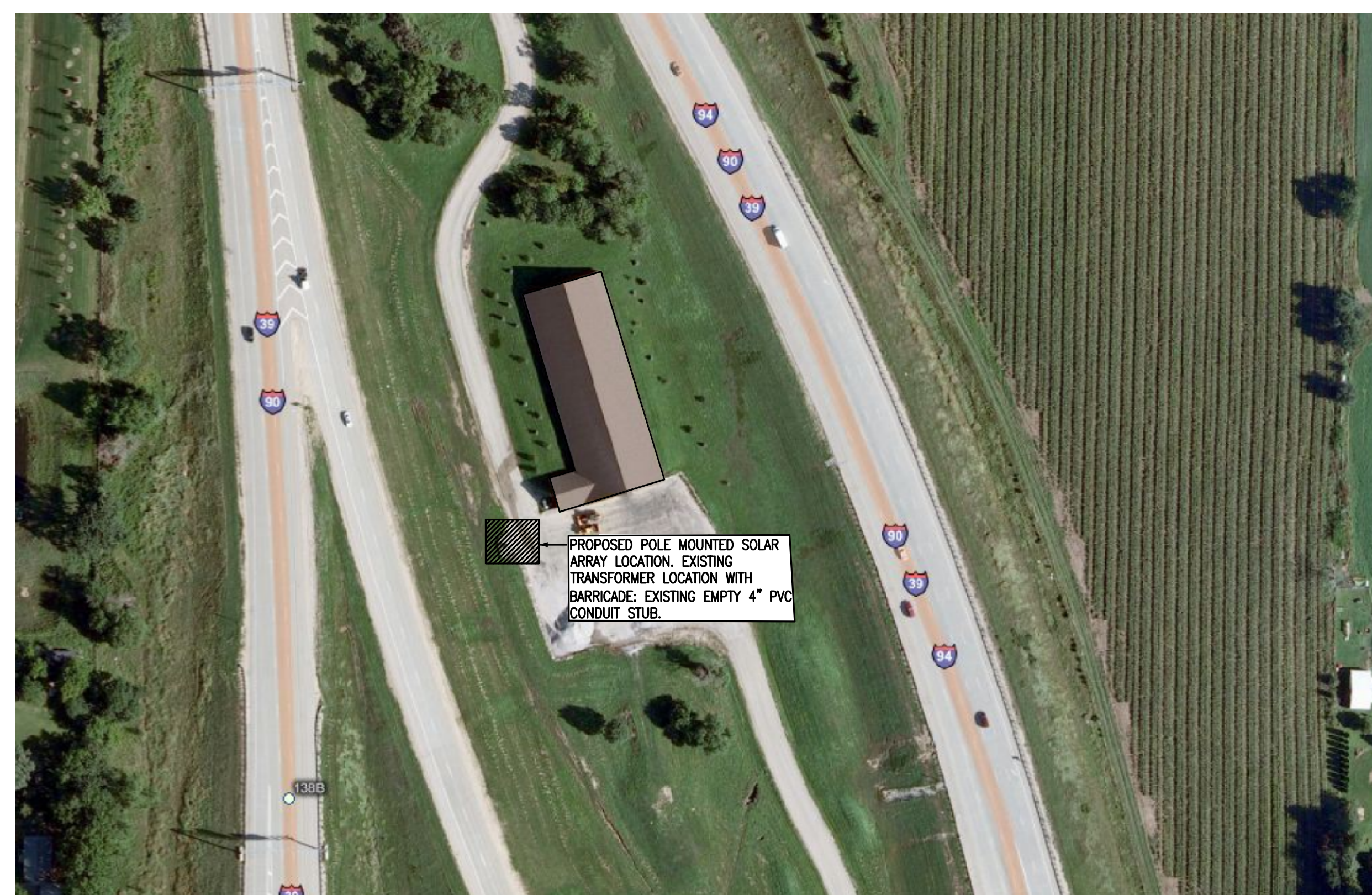
Project No.  
10-1142.01

Sheet No.

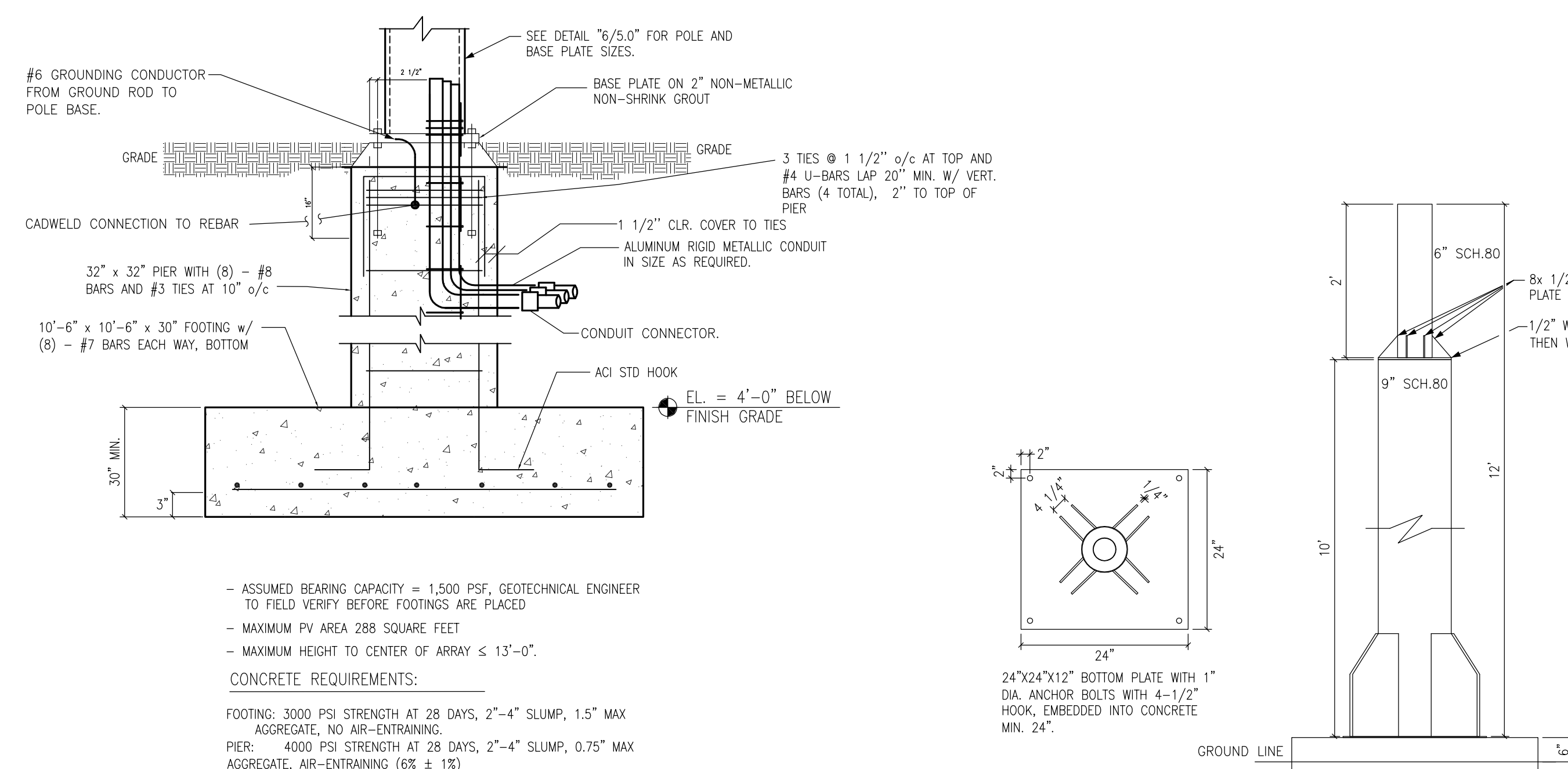




- NOTES:
1. PROVIDE INGROUND JUNCTION BOX 18X18X24. EXTEND EXISTING 4" PVC INTO INGROUND JUNCTION BOX. EXTEND RACEWAYS FROM POLE MOUNT TO JUNCTION BOX.
  2. PROVIDE JUNCTION BOX TO UTILIZE EXISTING 4" PVC STUB ABOVE FLOOR.
  3. EXTEND 2-110V CIRCUITS TO POLE MOUNT FROM EXISTING 110V PANEL - PROVIDE 20A CIRCUIT BREAKER 22KAIC. 1 - TO SERVE WP GFI RECEPTACLE, 1 - TO SERVE TRACKER MOTOR.
  4. APPROXIMATE LOCATION OF PV DISCONNECT SWITCH, INVERTER, PV PANEL, TRANSFORMER, TVSS AND SERVICE DISCONNECT SWITCH.
  5. INVERTER SHALL INCLUDE HEATER. PROVIDE 110V CIRCUIT TO SERVE HEATER FROM EXISTING 110V PANEL. PROVIDE 20A CIRCUIT BREAKER 22KAIC. IN LIEU OF HEATER PROVIDE INVERTER WITH RATING TO -40°F.



- NOTES:
1. EXTEND 2-1" AND 1-1 1/4" TO INGROUND JUNCTION BOX. SEE SITE DETAIL FOR CONTINUATION TO BUILDING.
  2. INCLUDE CONVERTER 120-24V DC IN WP ENCLOSURE.
  3. TRACKER SHALL BE DH SOLAR WITH CONTROLLER IN WP HOUSING OR EQUAL UNIT BY ARRAY TECH/WATTSUN MUST BE COMPATIBLE WITH THE 288 SQ. FT. ARRAY. MINIMUM 10 YEAR WARRANTY ON DRIVE MOTOR/CONTROLLER/CONVERTER. INCLUDE MAST DRIVE PLATE ASSEMBLY SUITABLE FOR THE 16 MODULES ARRAY. ADJUST TRACKER OPERATING RANGE PER MANUFACTURER'S INSTRUCTIONS. INSTALL ASSOCIATED SENSING AND ADJUST ACCORDING TO MANUFACTURER INSTRUCTIONS.
  4. PROVIDE GROUNDING OF SOLAR FRAME, TRACK FRAME, DRIVE, COMBINER POLE INCLUDING 8'-0" GROUND ROD. USE MIN. #8 GROUND WIRE TO GROUND ROD AT POLE.



- ASSUMED BEARING CAPACITY = 1,500 PSF, GEOTECHNICAL ENGINEER TO FIELD VERIFY BEFORE FOOTINGS ARE PLACED
- MAXIMUM PV AREA 288 SQUARE FEET
  - MAXIMUM HEIGHT TO CENTER OF ARRAY ≤ 13'-0"
- CONCRETE REQUIREMENTS:**
- FOOTING: 3000 PSI STRENGTH AT 28 DAYS, 2"-4" SLUMP, 1.5" MAX AGGREGATE, NO AR-ENTRAINING.
- PIER: 4000 PSI STRENGTH AT 28 DAYS, 2"-4" SLUMP, 0.75" MAX AGGREGATE, AR-ENTRAINING (6% ± 1%)
- EXCAVATION:**
- E.C. SHALL RESTORE THE SITE TO ITS ORIGINAL CONDITION UPON COMPLETION OF POLE FOUNDATION.
- ORIGINAL EXCAVATED MATERIAL MAY BE USED FOR BACKFILL.
- COMPACT AREA AROUND FOUNDATION BEFORE PROVIDING TOP SOIL AND LAYING GRASS SOD.
- CLEAR ALL AREAS ADJACENT TO THE FOUNDATION AND RESTORE TO ORIGINAL CONDITION.
- REMOVE ANY EXCESS SOIL MATERIAL FROM SITE UNLESS OTHERWISE DIRECTED BY THE COUNTY.

- NOTES:
1. APPLICABLE TO DETAIL 5 AND 6 POLE/STRUCTURE FOUNDATION BASED IN DH SOLAR. CONTRACTOR MUST CONFIRM FINAL DESIGN WITH DH SOLAR OR OTHER SELECTED SUPPLIER PRIOR TO PROCEEDING FOR FINAL APPROVAL OF STRUCTURAL ENGINEERED DRAWINGS BY THE ENGINEER.

**5 POLE FOUNDATION MAXIMUM 16' HUB HEIGHT**  
NTS

Revisions

Sheet  
**BADGER SALT SHED  
3650 COUNTY TRUNK  
HIGHWAY T MADISON,  
WI 53718  
PHOTOVOLTAIC ROOF  
PLAN AND DETAILS**

Project  
**Dane County Solar  
Photovoltaic Facilities**

Date  
November 12, 2010

Project No.  
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**E5.0**