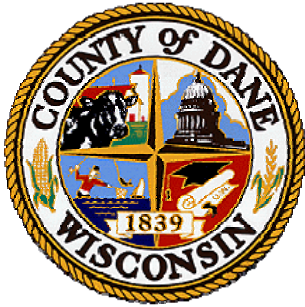


RFB NO. 311021



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. 311021 ELECTRICAL UPGRADES VETERANS MEMORIAL COLISEUM 1919 ALLIANT ENERGY CENTER WAY, MADISON, WISCONSIN 53713

Opening Date / Time: **TUESDAY, JUNE 28, 2011 @ 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:

**TYLER HOEHN, PROJECT ENGINEER
DANE COUNTY DEPARTMENT OF PUBLIC WORKS,
HIGHWAY & TRANSPORTATION
1919 ALLIANT ENERGY CENTER WAY
MADISON, WISCONSIN 53713
TELEPHONE NO.: 608/219-6339
FAX NO.: 608/267-1533
E-MAIL: HOEHN.TYLER@CO.DANE.WI.US**

DOCUMENT INDEX FOR RFB NO. 311021

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
- Coliseum Dimming System Replaement General Scope
- Supplementary Conditions
 - Davis - Bacon Wage Rates
 - Buy American Affidavit
- ARRA Reporting Requirements

DIVISION 01 - GENERAL REQUIREMENTS

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

DIVISION 26 - ELECTRICAL

- Section No. 26 05 00 – Common Work Results For Electrical
- Section No. 26 05 02 – Electrical Demolition For Remodeling
- Section No. 26 05 04 – Cleaning, Inspection, And Testing Of Electrical Equipment
- Section No. 26 05 19 – Low-Voltage Electrical Power Conductors and Cable
- Section No. 26 05 26 – Grounding And Bonding For Electrical Systems
- Section No. 26 05 29 – Hangers And Supports For Electrical Systems
- Section No. 26 05 33 – Raceway And Boxes For Electrical Systems
- Section No. 26 05 53 – Identification For Electrical Systems
- Section No. 26 50 00 - Lighting

DRAWINGS

To be printed to correct scale or size, plot sheets on (Arch E1), 30” x 42” paper.

- Sheet No. T1 - Title Sheet
- Sheet No. E1 - Coliseum Seating Lighting Plan – Northeast Half
- Sheet No. E2 - Coliseum Seating Lighting Plan – Southwest Half
- Sheet No. E3 - Coliseum Floor Lighting Plan
- Sheet No. E4 - Coliseum Dimming System Replacement

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., TUESDAY, JUNE 28, 2011

REQUEST FOR BIDS NO. 311021

**ELECTRICAL UPGRADES
VETERANS MEMORIAL COLISEUM
1919 ALLIANT ENERGY CENTER WAY, MADISON, WISCONSIN 53713**

Dane County is inviting Bids to upgrade lighting and controls in Veterans Memorial Coliseum.

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. Please call Tyler Hoehn, Project Engineer, at 608-219-6339, for any questions or additional information.

All Bidders must be a registered vendor with Dane County and pay an annual registration fee before bid opening date and time listed above. Complete Vendor Registration Form at www.danepurchasing.com or obtain one by calling 608-266-4131.

Bidders facility tour will be held on Tuesday, June 21, 2011 at 10:00 a.m., meet in the Public Works Conference Room, 1919 Alliant Energy Center Way, Madison, WI. Attendance is mandatory.

**PUBLISH: JUNE 9 & JUNE 16, 2011 - WISCONSIN STATE JOURNAL
 JUNE 9 & JUNE 16, 2011 - 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 for Tuesday, June 21, 2011 at 10:00 AM at Dane County Public Works, 1919 Alliant Energy Center Way, Madison, WI, in the Public Works Conference Room. Attendance by all bidders is mandatory.
- 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.

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. None

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. This work will be accomplished by Owner or will be let under separate contracts and will not be included under this Contract:
 - 1. Asbestos Abatement
 - 2. Inspection and testing of materials if not specified.

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 Opening.

PROJECT NAME: _____

BID NO.: _____ BID OPENING 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. 311021

**PROJECT: ELECTRICAL UPGRADES
VETERANS MEMORIAL COLISEUM
1919 ALLIANT ENERGY CENTER WAY, MADISON, WI 53713**

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

ALLIANT ENERGY CENTER – ITEMIZED BID - LUMP SUM:

Dane County is inviting Bids for construction services to upgrade lighting and the dimming system in the Alliant Energy Center Veterans Coliseum. The Alliant Energy Center is located at 1919 Alliant Energy Center Way, Madison, WI 53713. The Bid form contains all the items included in the project. The items will be chosen in the order they appear until the budget limit is reached. The undersigned, having examined the site 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 Itemized Bid stipulated sums of:

ITEM 1: Coliseum Seating and Floor Lighting Upgrade (Incandescent Replacement Only)

_____ and _____ /100 Dollars
Written Price

\$ _____
Numeric Price

ITEM 2: Coliseum Floor Lighting Upgrade (Metal Halide Replacement Only)

_____ and _____ /100 Dollars
Written Price

\$ _____
Numeric Price

ITEM 3: Coliseum Dimming

_____ and _____ /100 Dollars
Written Price

\$ _____
Numeric Price

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 December 30, 2011. Assuming this Work can be started by July 15, 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 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

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

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

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.

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

Davis-Bacon wage rates will supersede Wisconsin Prevailing Wage Rates for this project. 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.

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 and 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/.

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: dwd.wisconsin.gov/apprenticeship/executive_order108.htm ?	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:

CALEB BARTH

EMAIL: BARTH.CALEB@CO.DANE.WI.US

OFFICE: (608)266-4592, CELL: (608)219-2917, 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. 311021

Authority: Res. _____, [2011-12]

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 Electrical Upgrades to Coliseum ("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 Powrtek Engineering, Inc (hereinafter referred to as "the 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:

Joseph T. Parisi, County Executive Date

Karen Peters, 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 .

(Witness) (Principal) (Seal) (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;
 - 2. Remove marks, stains, fingerprints and other soil or dirt from painted, decorated and finished woodwork and wall surfaces;
 - 3. Remove spots, plaster, soil and paint from ceramic tile, marble and other finished materials, and wash or wipe clean;
 - 4. Clean fixtures, cabinet work and equipment, removing stains, paint, dirt and dust, and leave same in undamaged, new condition;
 - 5. Clean aluminum in accordance with recommendations of manufacturer; and
 - 6. Clean resilient floors thoroughly with well-rinsed mop containing only enough moisture to clean off any surface dirt or dust and buff dry by machine to bring surfaces to sheen.

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 (5th) 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. Administer and ensure 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;
 - 3. Convene and chair project meetings and foreman's coordination meetings when necessary to coordinate resolution of conflicts between Contractors, Architects, Engineers, Consultants, and Department; and
 - 4. 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. Engineer's decisions are subject to review by Public Works Project Engineer.

36. STATED ALLOWANCES

- A. Stated allowances enumerated in Instructions to Bidders shall cover net cost of materials or equipment, and all applicable taxes. Contractor's cost of delivery and unloading at site, handling costs on site, labor, installation costs, overhead, profit and any other incidental costs shall be included in Contractor's bid, but not as part of cash allowance.
- B. Department will solicit at least two (2) bids on materials or equipment for which allowance is stated and select on basis of lowest qualified responsible bid. Contractor will then be instructed to purchase "Allowed Materials". If actual price for purchasing "Allowed Materials", including taxes, is more or less than "Cash Allowance", Contract price shall be adjusted accordingly. Adjustment in Contract price shall not contain any cost items excluded from cash allowance.

37. 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".

38. 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.

39. 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.

40. 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.

41. 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.

42. 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.

43. 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.

44. 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."

45. 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.

46. 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.

47. 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.

48. 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.

49. 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.

50. 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.

51. 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.

COLISEUM DIMMING SYSTEM REPLACEMENT GENERAL SCOPE

Extended Control Panel (by overhead doors)

1. The existing interior of the control panel will be removed.
2. A new stainless steel panel will be needed and (2) single-gang button stations will be cut into the panel for normal lighting control (stations will remain behind the door).
3. The existing emergency bypass switches/lights will be eliminated.
4. New control cabling will be required to the new processor in hub room.

Dimming Rack (Hub Room)

1. The existing dimming rack will be removed and replaced by a Contractor custom built junction box to allow transition between conductors coming through floor, load center and conduits coming through the top of the original rack. Load center will remain and be mounted on top of new custom box. The existing interface box (located below the CBs) and two (2) of the three (3) existing LV transformers will be reinstalled on the exterior of the custom box. The LV transformers will need a 120V circuit from a 15A CB in the new dimming rack per 2. below.
2. Two dimming racks will be installed to divide the loads between the two feeders from the substations (similar to existing). One of the racks will also include a circuit breaker module (has 2-15A CBs) that will be used to power low voltage control transformers and processor.
3. (4)125A/3P and (2)60A/3P enclosed CBs will be installed (divided among the two racks) after the load conductors for the panels exit the respective dimming rack prior to reconnecting to the panel feeders (so all phase legs serving a panel can be disconnected).
4. A processor unit/power supply will be provided to interface new dimming racks with new control stations. A 120V circuit from a 15A CB will be needed derived from 2. above.
5. Unnecessary relays will be removed from the interface panel (that control the non-dimmed panels). Non-dimmed panels are located on catwalks and have an integral contactor.
6. A new contact interface panel will be provided that will be connected to the terminals to provide operation of non-dimmed panels. Power derived from the LV transformers.
7. Reconnect 24V power for control (i.e. receptacle panels AP & BP and emergency system, etc.).

Main Control Console (Sound/Lighting Room)

1. The existing left side of the control console will remain (receptacle panels AP & BP and winches). 24V power will need to be maintained for receptacle panels.
2. The existing right side of the control console shall have all lighting controls removed (including emergency lighting bypass switches/lights) and replaced with a new hinged stainless steel cover with (3) fader control stations (of various sizes) cut into. A new control cable will be required to processor in hub room.

Emergency Distribution Panel E (in Ticket Room)

1. A power relay will be added inside the enclosure that will provide an automatic bypass of the controls to activate emergency lights in the event of a power outage.
2. Existing manual bypass stations will remain as is (the ones combined with the extended control panel and control room console will be eliminated as noted above).


General

1. The system is designed around ETC.
2. The wiring diagrams of the existing dimming system will be made available to the awarded contractor. Note: these drawings don't reflect info on the load center mounted on the dimming rack or the interface panel mounted on the side.
3. Existing conduits can be reused to extend possible.
4. All cabling/conductors shall be in conduit.
5. Grounding/Bonding will be required to maintain a grounding path from incoming feeders to dimming equipment and outgoing conduits (currently there is not a code compliant grounding path).
6. All power equipment to be Square D.

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 Engineer for approval.


AIA Document G702™ – 1992

Application and Certificate for Payment

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

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

8. CURRENT PAYMENT DUE \$ _____

9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 8 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: _____

CHANGE ORDER SUMMARY

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

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.

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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 E on Contracts where variable retentions 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 (COSTS) (DOLLARS)	G TOTAL COMPLETED AND STORED TO DATE (DOLLARS)	H % (G ÷ C)	I BALANCE TO FINISH (C - I)	J RETENTION (IF VARIABLE RATE)
			E FROM PREVIOUS APPLICATION (D + E)	E 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, 1976, 1978, 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 175 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. 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

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.

MONTHLY:

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 st – March 31 st	April 3 rd
April 1 st – June 30 th	July 3 rd
July 1 st – September 30 th	October 3 rd
October 1 st – December 31 st	January 3 rd

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, 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:

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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, for specific requirements of this section and prescribed language for the notices.).

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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,

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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;

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- (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

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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

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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

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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

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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

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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

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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

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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.

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(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

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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

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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.

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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 or telephone: 608-262-0385.

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

* * *

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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

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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.
 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 lighting upgrades and occupancy sensors as well as all related equipment and controls.
- B. Work by Owner: Asbestos Abatement
- 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 others and work 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: Alliant Energy Center
 - 1. Coliseum Dimming System Upgrade
 - 2. Coliseum Seating and Floor Lighting Upgrade (Incandescent Replacement Only)
 - 3. Coliseum Floor Lighting Upgrade (Metal Halide Replacement Only)

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 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. Arrange for temporary parking areas to accommodate construction personnel. Parking will be available at the Alliant Energy Center.

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 limited and will be apportioned among the various Contractors as their needs dictate with due regard for storage requirements of each Contractor. Each Contractor shall be responsible for safety of equipment and materials that are stored on site.
- C. Alliant Energy Center has a busy show schedule. Contractor will have to work with Alliant Energy Center staff to avoid interrupting shows.

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 (7:45 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.
- C. Provide Alternate walks & drives if work involves blockage of existing.

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.
 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 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
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Trash/ Recyclables/Reused Materials Hauling Log

Project Name: _____

Date	Material (Trash, Wood, Concrete, E	Hauled By	Ticket No.	Dumpster Size/ Weight/ Volume

Recycling Coordinator: Complete for all materials that leave the Project site.

Project Manager: Verify hauling invoices with information on this log.

Log Faxed To Construction Waste Manager

Log Faxed To Project Manager

Date: _____

**SECTION 26 05 00
COMMON WORK RESULTS FOR ELECTRICAL**

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 shall govern work under this section.

1.2 WORK INCLUDED IN THE ELECTRICAL CONTRACT

- A. The mention of any Article, operation or method required that the Contractor shall provide same and perform each operation in complete accordance with the conditions stated. The Contractor shall provide all material, labor, equipment and transportation as necessary to complete the project in compliance with the Contract Documents. In general, this work includes everything essential for a complete electrical system in operating order as shown on the drawings and indicated in the specifications.
- B. All work shall be installed in accordance with all State and Local Inspection Authorities having jurisdiction together with the recommendations of the manufacturer whose equipment is to be supplied and installed under this Contract.
- C. Before submitting a bid, each bidder shall examine the drawings relating to their work and shall become fully informed as to the extent and character of the work required and its relation to other work in the building.
- D. The Contractor, in conjunction with the Architect's representative, shall establish exact locations of all materials and equipment to be installed. Consideration shall be given to construction features, equipment of other trades and requirements of the equipment proper.
- E. The Contractor shall furnish all scaffolding, rigging, hoisting and services necessary for deliver, erection and installation of all equipment and apparatus required to be installed by the Contractor. All such equipment shall be removed by the Contractor upon completion of the project.
- F. The Contractor shall provide all necessary temporary lighting, distribution and electrical service as required for project.
- G. The Contractor shall be responsible for all work identified on the plans and specifications, and include all costs in bid.

1.3 DEFINITIONS

- A. The Owner: The individual who the Owner selects as the project representative.
- B. The Engineer: Powrtek Engineering, Inc., Consulting Engineers, Waukesha, Wisconsin.
- C. This Contractor: The Electrical Contractor also referred to as "The Contractor".

- D. Provide: Furnish, install and wire complete and ready for service.
- E. Exposed: Exposed to view in any room, corridor or stairway.
- F. Code: National, State and Local Electrical codes including OSHA requirements.
- G. Equals: Manufacturers or methods listed by name in the specifications, on the drawings or in an addendum are considered to be equals.
- H. Substitution: Any manufacturer or method other than those listed by name in these specifications, on the drawings, or in an addendum.
- I. NEC: National Electrical Code.
- J. Signal Voltage: NEC class 1, 2, or 3 remote control, signaling or power limited circuits.
- K. Low Voltage: 50 to 600 volts.

1.4 PERMITS AND LICENSES

- A. The Contractor shall prepare and submit all applications and working drawings, as required, to authorities having jurisdiction over the project. All licenses and permits required shall be secured and paid for by the Contractor.
- B. Pay for all fees incident thereto.
- C. Comply with local ordinances, laws, regulations and codes in effect at job site.
- D. Pay all applicable taxes associated with electrical work.

1.5 STANDARDS AND CODES

- A. All work shall be installed in accordance with National, State and Local codes, ordinances, laws and regulations. Comply with applicable OSHA regulations.
- B. All materials shall have a UL or ETL label where a UL or ETL Standard and/or test exist.

1.6 DIMENSIONS AND DEFINITE LOCATIONS

- A. The drawings depicting electric work are diagrammatic and show, in their approximate location, symbols representing electrical equipment and devices. The exact location of such equipment and devices shall be established in the field in accordance with instructions from the Architect and/or established by manufacturer's installation drawings and details.
 - 1. The Contractor shall refer to shop drawings and submittal drawings for all equipment requiring electrical connections to verify rough-in and connection locations.
 - 2. Unless specifically stated to the contrary, no measurement of an electric drawing derived by scaling shall be used as a dimension to work by. Dimensions noted on the electric drawings are subject to measurements of adjacent and previously completed work. All measurements shall be performed prior to the actual installation of equipment.

1.7 DRAWINGS

- A. The Contractor shall keep a detailed up-to-date record, of the manner and location in which all installations are actually made, indexing each feeder, pull box and protective device.
- B. As Built Drawings – See General Requirements – Division 1. The contractor shall provide final as-built (record) drawings at completion of project to the Engineer (electronic copy only) and Owner (full size hardcopy and electronic copy). Electronic files shall be in AutoCad 2008 format delivered on CD-R. The record drawings shall indicate device locations, equipment as-circuited, all interior feeder and significant branch circuit runs and junction boxes, exterior circuit runs and pull boxes. All interior feeders and exterior circuits shall include conductors/conduits installed information.
- C. The engineer will make available to the contractor a complete set of electronic AutoCad files. Each electronic copy requested will be put on disk or sent via e-mail for a cost of \$150 to cover technician time and mailing costs. Any requests shall be made in writing to the engineer with a certified check or money order payable to the engineer. The disk(s) will be sent out within 7 days of receipt of the request and payment in full.
- D. In the event of a conflict between the drawings and specifications, this Contractor shall base their bid on the greater quantity, cost or quality of the item in question, unless such conflict is resolved by an addendum. The Contractor shall be responsible for all existing field conditions, review existing field conditions prior to bid and shall take into account in bid proposal. No additional compensation will be allowed due to Contractor's failure to include all necessary work in the bid proposal.
- E. Provide 100 percent complete and operational electrical systems and subsystems as specified herein and as shown on the drawings. Electrical systems shall include all materials, labor, taxes, mark-ups, overhead, profit, equipment, accessories and incidentals. All materials shall be new and not discontinued.
- F. The drawings and specifications are schematic and scope in nature. All required light fixtures, devices, conduit, wiring, supports, etc., shall be included in the base bid to accommodate actual field conditions. Final locations of all electrical work shall be coordinated in the field and installed where directed by the Engineer. The Contractor shall follow the intent of the plans and specifications when bidding and completing the design of the required building electrical systems.

1.8 MATERIALS AND EQUIPMENT

- A. All materials and equipment required shall be new.
- B. All equipment supplied shall be based on materials and equipment of manufacturers specified. No substitutions will be allowed except as permitted in this specification.
- C. All items specified shall be the latest type or model produced by the manufacturer specified. If descriptive specification or model number is obsolete, substitute the current product.

1.9 SUBSTITUTIONS

- A. In any case where the Contractor wishes to use equipment or methods other than those listed by name, such equipment shall be considered a substitution and must be approved by the Engineer. To gain approval for substitutions, the Contractor shall submit the following to the Engineer for his review.
1. Documentation from the equipment manufacturer indicating where this equipment meets and does not meet the specifications or drawings as written. This documentation shall state all exceptions taken to the specification and the reasons for such exceptions. All documentation relative to the request for substitution shall be submitted on the manufacturer's letterhead and signed by a representative of the manufacturer.
 2. Manufacturer's Cut Sheets: Cut sheets shall be originals as are contained in the manufacturer's catalog. Photocopies of these sheets will not be accepted for review (Furnish 3 copies).
 3. Lighting Fixtures: Request for substitutions shall include photometric test reports performed by an independent testing laboratory.
 4. The Contractor shall provide samples of the proposed equipment for the Engineer's review, if requested by the Engineer.
 5. The Contractor shall furnish any other information or materials as requested by the Architect/Engineer to establish equality.
 6. The Contractor shall acknowledge that they have reviewed the submission criteria for the request for substitution by stamping the submission with a review stamp or acknowledgment by an accompanying letter.
 7. Equipment and materials submitted for review without proper documentation will be rejected without review.
 8. A check for \$400 to cover Engineer's time in reviewing substitution.
- B. Any substitution submittal, including samples, shall be received in the Engineer's office a minimum of ten days prior to the Bid due date to allow adequate time for review.
- C. Materials, equipment or methods of installation other than those named, will be accepted only if such articles are in accordance with the general requirements and are similar in composition, dimension, construction, capacity, aesthetics, finish and performance.

1.10 SHOP DRAWINGS AND EQUIPMENT BROCHURES

- A. Submit to Engineer for review, the manufacturer's shop drawings and/or equipment brochures in quantities determined by the Architect for the following:
1. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
 2. Section 26 05 33 – Raceways, special boxes and composite boxes only
 3. Section 26 50 00 – Lighting (including lamps)
 4. Plans – Occupancy Sensors
- B. Shop drawings shall be submitted in advance of construction and installation so as to not cause delay in other Contractor's work.

- C. All data submitted for Engineer's review shall be numbered consecutively, shall be noted to correlate with the electrical drawings and shall bear:
 - 1. The name and location of the project.
 - 2. The name of the Contractor.
 - 3. The date of submittal.
 - 4. The date of the drawings and the date of each correction and revision.
 - 5. If more than one type of lighting fixture (or other material) is on a submitted sheet, the proposed equipment shall be conspicuously checked with red pen by the Electrical Contractor.
- D. Shop drawings for different systems and equipment shall be bound separately by specification section. Submittals which contain different systems bound together shall be returned un-reviewed for re-submittal.
- E. The Contractor shall examine shop drawings and equipment brochures prior to submission. The Contractor shall verify that the materials and equipment depicted will properly fit into the construction. The Contractor shall also review all previously completed work related to the installation of the equipment depicted to insure that it has been properly installed.
- F. The contractor is allowed up to two submittals for approval. If additional submittals are required for approval the contractor will be required to submit payment with certified check or money order in the amount of \$250 with each section resubmitted to cover additional engineering time and mailing costs.
- G. No materials or equipment subject to prior review by the Engineer shall be fabricated or installed by the Contractor, without approval. The Engineer's review of shop drawings shall not relieve the Contractor of responsibility for deviations from the requirements of the drawings and specifications, unless prior approval for such deviations has been granted.

1.11 MAINTENANCE MANUALS

- A. The Electrical Contractor shall assemble and submit to the Architect for subsequent submission to the Owner, three complete sets of a Manual of Operation and Maintenance for each of the electrical and communications systems.
- B. Each manual shall consist of a loose leaf bound volume instructing the Owner's personnel in the use, operation and maintenance of the system in question. The manual shall cover all phases of operation of the equipment and shall be illustrated with photographs, drawings, wiring diagrams, etc. Manuals shall accurately describe the operation, construction and adjustable features of the complete system and its component parts. The manual shall be complete with an equipment parts listing to facilitate the ordering of spare and replacement parts.
- C. Each manual shall contain two sets of final shop drawings depicting equipment as installed.

1.12 CLEANING AND PAINTING

- A. All rubbish resulting from this work shall be removed and disposed of on a daily basis in such manner as to be acceptable to the Owner/Engineer.

- B. The Contractor shall clean all exposed iron work, the interior and exterior of cabinets and pull boxes, etc., and remove all rubbish and debris resulting from the work.
- C. Where painted surfaces of equipment have been damaged or rusted during construction, the Contractor shall paint same to match final.
- D. Clean other equipment as indicated in other sections of the specification for specific equipment.
- E. All floors to be broom cleaned.

1.13 TESTS AND ACCEPTANCE

- A. The operation of the equipment and electrical systems does not constitute an acceptance of the work by the Owner. The final acceptance is to be made after the Contractor has adjusted his equipment and demonstrated that it fulfills the requirements of the drawings and the specifications.
- B. After the work is completed and prior to acceptance, the Contractor shall conduct the following tests, tabulate data, date, sign and submit to the Engineer.
 - 1. Standard megger insulation test on each feeder.
 - 2. Ground resistance test.
 - 3. Clamp ammeter test on each feeder conductor with all utilization equipment energized. The load current in each phase conductor of the feeder or the portion thereof supplying the panel shall not differ from the average connected load currents in the feeder conductors by more than 7½ %. If the load currents in the feeder conductors by more than 7½ %, the Contractor shall change phase loading to same or receive written approval from the Engineer that this is not required due to the nature of the load.
- C. Upon completion of the installation, the Contractor shall furnish certificates of approval from all authorities having jurisdiction. The Contractor shall demonstrate that all work is complete and in perfect operating condition, with race way and conduit system properly grounded, all wiring free from grounds, shorts, and that the entire installation is free from any physical defects.
- D. In the presence of the Engineer and the Owner, the Contractor shall demonstrate the proper operation of all miscellaneous systems.
- E. Perform other test as specifically directed in other sections of the specifications for specific equipment.

1.14 GUARANTEE

- A. All work shall be provided with a one year materials and labor warranty. Warranty period shall begin after the Owner's final acceptance of the work.
- B. See other Division 26 specification sections for equipment with extended warranties.
- C. See General Conditions.

1.15 ACCESS PANELS

- A. All access panels required by code or otherwise to electrical service equipment shall be supplied and installed by Electrical Contractor.

1.16 OWNER TRAINING

- A. The contractor shall give the owner's personnel verbal and written operating instructions for all electrical systems.

1.17 COORDINATION BETWEEN TRADES

- A. Coordination Meetings: Attend coordination meetings with the construction manager and all other trades for the purpose of coordinating the locations of all fire protection, plumbing, HVAC, kitchen, equipment and electrical work for the entire project. The goal of these meetings is to avoid conflicts between trades in the field and to assure that all necessary power and control requirements are accounted for.
- B. Conflicts Between Trades: Resolve all conflicts between trades at no additional cost to the Owner or Architect.
- C. Ceiling Heights: Maintain all ceiling heights indicated on the architectural drawings. Ceiling heights will not be lowered to accommodate installation of fire protection, HVAC or electrical work. Install all work so that there is at least eight (8) inches clearance above the ceiling grid, in all areas, to facilitate installation of light fixtures. If installed work does not comply with the ceiling height requirements stated above, then the contractor shall remove and re-install work to comply with the stated requirements above at no additional cost to the Owner or Architect.
- D. Ceiling Grid Priority: Lighting fixture locations take priority over diffuser and sprinkler head locations.

1.18 ELECTRICAL INSTALLATIONS

- A. General: Sequence, coordinate and integrate the various elements of electrical systems, materials and equipment. Comply with the following requirements:
- B. Coordinate electrical systems, equipment and materials installation with other building components, including transferring of 'overlay' plans to verify clearances, etc.
- C. Verify all dimensions by field measurements.
- D. Arrange for chases, slots and openings in other building components during progress of construction, to allow for electrical installations.
- E. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-place concrete and other structural components, as they are constructed. All pipes passing through cast-in-place concrete walls and floors shall be sleeved.

- F. Sequence, coordinate and integrate installations of electrical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
- G. Where mounting heights are not detailed or dimensioned, install systems, materials and equipment to provide the maximum headroom possible.
- H. Coordinate connection of electrical systems with exterior underground utilities and services. Comply with requirements of governing regulations, franchised service companies and controlling agencies. Provide required connection for each service.
- I. Install systems, materials and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect.
- J. Install systems, materials and equipment level and plumb, parallel and perpendicular to other building systems and components, where installed exposed in finished spaces.
- K. Install electrical equipment to facilitate servicing, maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
- L. Units concealed behind finished surfaces shall be installed behind an access panel or door as required.
- M. Install systems, materials and equipment giving right-of-way priority to systems required to be installed at a specified slope.

1.19 CUTTING AND PATCHING

- A. General: Perform cutting and patching in accordance with Division 1 Section "CUTTING AND PATCHING." In addition to the requirements specified in Division 1, the following requirements apply:
 - 1. Perform cutting, fitting and patching of electrical equipment and materials required to:
 - a. Uncover Work to provide for installation of ill-timed Work.
 - b. Remove and replace defective Work.
 - c. Remove and replace Work not conforming to requirements of the Contract Documents.
 - d. Remove samples of installed Work as specified for testing.
 - e. Install equipment and materials in existing structures.
 - f. Upon written instructions from the Architect, uncover and restore Work to provide for Architect observation of concealed Work.
 - 2. Cut, remove and legally dispose of selected electrical equipment, components and materials as indicated, including but not limited to

- removal of electrical items indicated to be removed and items made obsolete by the new Work.
3. Protection of Installed Work: During cutting and patching operations, protect adjacent installations.
 4. Patch existing finished surfaces and building components using new materials matching existing materials and experienced Installers. Installer's qualifications refer to the materials and methods required for the surface and building components being patched.
 5. Patch finished surfaces and building components using new materials specified for the original installation and experienced Installers. Installers' qualifications refer to the materials and methods required for the surface and building components being patched.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

Not Used.

END OF SECTION

**SECTION 26 05 02
ELECTRICAL DEMOLITION FOR REMODELING**

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- A. Applicable requirements of Division 1 shall govern work in this section.

1.2 JOB CONDITIONS

- A. The existing building shall remain in service during construction. Power outages and interruptions in building systems shall be held to a minimum and shall be done at a time convenient to the Owner. The time of all outages shall be scheduled with the Owner and all other trades affected by the outage at least ten working days in advance. All demolition work shall be scheduled at periods and times acceptable to the Owner.
- B. Refer to specification descriptions and plans for areas and equipment being remodeled.
- C. Prior to demolition or alteration of structures, the following shall be accomplished.
 - 1. Owner release of such structure.
 - 2. Disconnection of electrical power to equipment and circuits removed or affected by demolition work.
 - 3. Electrical services rerouted or shut off outside area of demolition.
 - 4. Coordinate sequencing with Owner and other Contractors.
 - 5. Survey and record condition of existing facilities to remain in place that may be affected by demolition operations. After demolition operations are completed, survey conditions again and restore existing facilities to their pre-demolition condition.
- D. Contractor shall dispose of all obsolete material.
- E. Alliant Energy Center has a busy show schedule and all work has to be scheduled around these events. Calendar of events will be provided to successful bidder.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 MODIFICATIONS

- A. Feeders, branch circuits, and other system wiring which are to remain in service, but which are presently routed through areas being demolished shall be rerouted around demolition area.

- B. **The contractor shall assume that there are additional existing conduits with conductors, cables, etc. as well as free air cabling in the project area that will require relocation as part of the project and shall include cost in project. No additional costs will be allowed for ignoring this requirement.**

3.2 REMOVAL

- A. Electrical equipment in conflict with construction shall be removed or relocated as indicated on drawings, as directed, or as required.
- B. Remove or relocate: Conduit, wire, boxes, fixtures that are in the way of construction.
- C. Reconnect circuits and equipment to be continued in service.
- D. Provide temporary wiring to any equipment that is to remain in operation during demolition and whose power would be interrupted as a result of demolition.
- E. Remove electrical equipment released from service as a result of construction or as indicated on drawings.
- F. Do not use removed electrical equipment except as specifically directed on the drawings.

3.3 DISPOSAL

- A. Dispose of equipment that is removed unless specifically indicated on the drawings.
- B. Raceway, conductors, boxes, cabinets and supporting devices shall become the property of the Contractor and shall be removed from the site and disposed of by the Contractor.
- C. The Contractor shall tour demolition areas with the Owner to determine the status of all other equipment to be removed during demolition. All equipment that is to be salvaged for reuse by the Owner shall be removed by the Contractor and transported to an owner designated storage area on the site. The Owner shall be responsible for removal of salvaged equipment from the storage area.

3.4 LIGHTING FIXTURE BALLAST DISPOSAL

- A. The Contractor shall inspect all ballasts in all light fixtures removed as part of this project and take the actions described below.
- B. All ballasts labeled as "NON PCB's" or "NO PCB's" shall be handled as described in other sections of these specifications which describe demolition or salvage materials handling. If the PCB content is not stated on the ballast label, the ballast shall be handled as a PCB ballast.
- C. All PCB ballasts shall have the wires clipped off and the ballasts placed in US DOT approved type 17C or type 17H barrels and placed in storage in a location within the building as designated by the Owner. The Contractor shall provide to the Owner, in typewritten form, a total count of these ballasts and where they are stored.

- D. These ballasts are not to be removed from the work site by the Contractor.
- E. The Contractor shall label and mark the PCB storage barrels with EPA approved PCB labels and shall mark the storage area with signs, marks and lines to meet the regulations of Wisconsin Code NR 157.
- F. The Contractor shall provide approved PCB absorbent materials to be stored immediately adjacent to the barrel storage area. Do not place loose absorbent material in the barrels.
- G. When the ballast demolition is completed and all PCB ballasts are placed in barrels ready to be picked up for disposal, the Contractor shall notify the Owner in writing so the Owner can make arrangements for pick up and disposal of the PCB ballasts at Contractor's expense.

3.5 LIGHTING FIXTURE LAMP DISPOSAL

- A. The Contractor shall be responsible for the proper removal and recycling of all existing fixture lamps being removed from service in accordance with EPA and State of Wisconsin DNR requirements. Lamps shall not be disposed of in any way except as described herein.
- B. The Contractor shall be responsible for arranging for recycling of lamps by a licensed waste lamp and bulb recycler. The cost for recycling of removed lamps shall be included in the Contractor's bid.
- C. The Contractor shall carefully package removed lamps to prevent breakage. The Contractor shall store waste lamps in a secure area, either in the container that the lamps are shipped in or in other ways so as to eliminate breakage. Both the lamp storage area and individual containers should be labeled as hazardous waste. Store lamps in covered containers to prevent lamps from being broken as a result of other debris being placed on top of them.

3.6 ALTERATIONS

- A. The Contractor shall be responsible for work of other trades to facilitate installation of electrical work in the existing building.
- B. Work required by Electrical Contractor which is normally performed by other trades shall be done under direction and at the expense of Electrical Contractor.

END OF SECTION

SECTION 26 05 04
CLEANING, INSPECTION AND TESTING ELECTRICAL EQUIPMENT

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 shall govern work under this section.

1.2 SCOPE

- A. Assure that electrical equipment is operational within industry and manufacturer's tolerances and is installed in accordance with design specifications.

1.3 ITEMS TO BE TESTED

- A. Circuit Breakers
- B. Grounding Systems

1.4 QUALITY ASSURANCE

- A. Comply with the requirements of the following regulatory agencies:
 - 1. National Fire Protection Association (NFPA) Chapter 70 - National Electric Code (NEC) and Wisconsin Amendments thereto.
 - 2. Underwriters Laboratories (UL) Approval
- B. Conform to the standards of the following agencies:
 - 1. National Electrical Manufacturers Association (NEMA)
 - 2. American Society for Testing and Materials (ASTM)
 - 3. Institute of Electrical and Electronic Engineers (IEEE)
 - 4. National Electrical Testing Association (NETA)
 - 5. Insulated Power Cable Engineers Association (IPCEA)
- C. Inspections and test shall utilize the following references:
 - 1. Project design specifications.
 - 2. Project design drawings.
 - 3. Manufacturer's instruction manuals applicable to each particular apparatus.

1.5 JOB CONDITIONS

- A. Electrical contractor's responsibilities.
 - 1. Coordinate work to minimize project delay.

PART 2 – PRODUCTS

Not Used.

PART 3 – EXECUTION

3.1 GENERAL

- A. Test work and equipment installed to ensure its proper and safe operation in accordance with intent of drawings and specifications.
- B. Check interlocking and automatic control sequences and test operation of safety and protective devices.
- C. Correct defects.
- D. Cooperate with supplier's and manufacturer's representatives in order to achieve proper and intended operation of equipment.
- E. Test, adjust and record operating voltages at each system level before energizing branch circuits.
- F. Replace devices and equipment damaged due to failure to comply with this requirement.
- G. Balance load among feeders conductors at each panelboard and reconnect loads as may be necessary to obtain a reasonable balance of load on each phase. Electrical unbalance shall not exceed 7½% between phases.

3.2 GENERAL INSPECTION AND CLEANING OF ALL ELECTRICAL EQUIPMENT

- A. Inspect for physical damage and abnormal mechanical and electrical conditions.
- B. Any item found to be out of tolerance, or in any other way defective as a result of the required testing, shall be reported to the Engineer. Procedure for repair and/or replacement will be outlined. After appropriate corrective action is completed the item shall be re-tested.
- C. Compare equipment nameplate information with the latest single line diagram and report any discrepancies.
- D. Verify proper auxiliary device operation and indicators.
- E. Check tightness of accessible bolted electrical joints. Use torque wrench method.
- F. Make a close examination of equipment and remove any shipping brackets, insulation, packing, etc. that may not have been removed during original installation.
- G. Make a close examination of equipment and remove any dirt or other forms of debris that may have collected in existing equipment or in new equipment during installation.
- H. Clean All Equipment:
 - 1. Vacuum inside of panelboards, etc.
 - 2. Loosen attached particles and vacuum them away.
 - 3. Re-vacuum inside surfaces as directed by the Engineer or Inspector
- I. Inspect equipment anchorage.
- J. Inspect equipment and bus alignment.

3.3 GROUNDING SYSTEMS

- A. Inspect the ground system for adequate termination at all devices.

3.4 PANELBOARDS

- A. Torque all the connections per the manufacturers spec. Verify phase wires, color coding, separate neutral and mechanical bonding. Verify circuit breaker operation. Verify the directory.

3.5 LIGHT FIXTURES

- A. Check the bonding and proper lamping. Verify that recessed fixtures are installed with hold down clips. Confirm operation of the fixture with the proper switch or sensor.

3.6 OCCUPANCY SENSORS

- A. Confirm operation of the sensor per the manufacturers spec.
- B. Occupancy Sensor Sensitivity Test: After the sensor has been energized for at least 15 minutes, walk to the middle of the room or sit at the normal desk position. Make no motion for 20 seconds. Move one arm up and down slowly. The test LED should blink. Check all positions within a room to confirm that there are no dead areas.
- C. Occupancy Sensor Time Delay Test: Set the time delay for 10 minutes. Walk into the room to activate the sensor then leave room. Sensor must turn lights off at approximately 10 minutes. Walk into the room again to reactivate the lights. Lights should activate within 1 second.

END OF SECTION

SECTION 26 05 19
LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 shall govern work under this section.

1.2 SCOPE

- A. Provide conductors and connectors as specified herein.

1.3 RELATED WORK

- A. Section 26 05 04 – Cleaning, Inspection and Testing Electrical Equipment
- B. Section 26 05 26 – Grounding and Bonding for Electrical Systems
- C. Section 26 05 33 – Raceway and Boxes for Electrical Systems
- D. Section 26 05 53 – Identification for Electrical Systems

1.4 QUALITY ASSURANCE

- A. Reference Standards of the following associations:
 - 1. National Electrical Contractor's Association (NECA) – Standard of Installation.
 - 2. Insulated Cable Engineers Association (ICEA).
 - 3. National Fire Protection Association (NFPA) 70 – National Electrical Code (NEC) and Wisconsin amendments thereto.

PART 2 – PRODUCTS

2.1 CONDUCTORS

- A. Copper Conductor only.
- B. Insulated with 600 V insulation and color code conductors for low voltage (secondary feeders and branch circuits) as required by code.
- C. Type THHN Solid or Stranded: Single conductor No. 10 AWG and smaller, No. 12 AWG minimum.
- D. Type THHN Stranded: Single conductor No. 8 AWG and larger. Conductor triple rated for use as types THHN, THWN and MTW is approved.
- E. Conductors installed in exterior wet locations and areas with high humidity shall be type XHHW.
- F. Conductors shall not be installed at temperatures below the manufacturer's minimum installation temperature.

2.2 JOINTS, TAPS AND SPLICES

- A. Interior Conductors No. 10 AWG and Smaller: Standard wire connectors.
- B. Interior Conductors No. 8 AWG and Larger: NSI Polaris or equal Insulated multi-cable connector blocks.
- C. Exterior Conductors No. 10 AWG and Smaller: King Silicon Filled ProLine Underground/direct bury rated wire connectors.
- D. Exterior Conductors No. 8 AWG and Larger: Splices shall accept (4) #14-#2 conductors, be underground/overhead rated and include gel filled hinged splice closure. Utilize NSI Easy-Splice Gel Tap Splice Kit series connectors (ESGTS-2) or equal.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Run conductors in conduit unless otherwise indicated on drawings.
- B. Install in accordance with manufacturer's written instructions and in accordance with recognized industry practices.

3.2 INSPECTION

- A. Examine areas and conditions under which feeders and branch circuits are to be installed and notify Engineer, in writing, of conditions detrimental to proper and timely completion of work.
- B. Do not proceed with work until unsatisfactory conditions have been corrected.

3.3 JOINTS, TAPS AND SPLICES

- A. Cable splices shall be made only in distribution and junction boxes.

3.4 FIXTURE OUTLETS

- A. Use conductor with insulation suitable for current, voltage and temperature to which conductor will be subjected.
- B. No. 12 wire size minimum for conductors supplying power to a single fixture. 600V insulation minimum.
- C. Insulation suitable for operation at 90° C. minimum for lighting fixtures with integral ballast, mogul base sockets, quartz lamps or otherwise where subject to excessive temperatures.
- D. Fixture wiring shall be continuous wiring system to lampholder or to ballast and from ballast to lampholder.

3.5 FEEDER CIRCUITS

- A. Extend feeders at full capacity from origin to termination.
- B. Each conduit raceway shall contain only those conductors constituting a single feeder circuit.
- C. Where feeder conductors are run in parallel, conductors shall be of same length, same material, circular-mil area, insulation type and terminated in same manner.
- D. Where parallel feeder conductors shall be run in separate raceways, each raceway shall have same physical characteristics.
- E. Feeders shall follow most accessible routes, concealed in construction in finished areas, exposed to the minimum temperature gradient and to minimum temperature fluctuation.
- F. Confine feeders to insulated portions of building, unless otherwise specified.
- G. Trapped feeder runs without facilities for continuous drainage are not acceptable.
- H. Do not draw conductors into conduits until building is enclosed and watertight, and until work which may cause conductor damage has been completed.
- I. Feeder conduits shall not be routed in concrete floor slabs.

3.6 BRANCH CIRCUITS

- A. Conductors shall be size 12 AWG minimum (unless otherwise noted) for branch circuit wiring, including motor circuits.
- B. Size 120V branch circuits for length of run on following basis:
 - 1. 0 to 75 feet run from panelboard to first outlet: No. 12 AWG minimum.
 - 2. 75 to 125 feet run: increase one wire size, i.e. No. 12 AWG becomes No. 10 AWG.
 - 3. 126 to 200 feet run: increase two wire sizes, i.e. No. 12 AWG becomes No. 8 AWG.
 - 4. 201 and above: wiring to be sized for 3% maximum voltage drop.
- C. Size 277V branch circuits for length of run on following basis:
 - 1. 0 to 100 feet run from panelboard to first fixture or outlet: No. 12 AWG minimum.
 - 2. 101 to 200 feet run: increase one wire size, i.e. No. 12 AWG becomes No. 10 AWG.
 - 3. 201 and above: wiring to be sized for 3% maximum voltage drop.
- D. Voltage drop for branch circuits and feeder circuit combined shall not exceed requirements of NEC Article 215.
- E. Route branch circuits and switch legs as dictated by construction, these specifications, or instructions from the Engineer.
- F. Size conduit, outlet boxes and other raceway system components in accordance

with NEC requirements as minimum.

- G. Do not draw conductor into conduits until building is enclosed and watertight, and work which may cause conductor damage has been completed.
- H. Circuit numbers as shown on drawings are for Contractor to plan his wiring and for estimating purposes and are not necessarily the exact circuit numbers to be used in that panel for that particular load. Exact circuit numbers for each load are to be selected by the Contractor at their option. Balanced load on panelboard bus is to be the determining factor in arrangement of circuits. Panelboards average load shall not differ from phase to phase by $\pm 7\frac{1}{2}\%$.

END OF SECTION

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 shall govern work under this section.

1.2 SCOPE

- A. Provide all material, labor and incidentals necessary for the completion of this section of the work.

1.3 RELATED WORK

- A. Section 26 05 00 – Common Work Results for Electrical
- B. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables

1.4 QUALITY ASSURANCE

- A. Follow the requirements of the following regulatory agencies:
 - 1. National Fire Protection Association (NFPA, NFPA-70 - National Electrical Code (NEC) and Wisconsin amendments thereto.
 - 2. Local Codes and Ordinances

1.5 REFERENCE STANDARDS

- A. Conform to the standards of the National Electrical Contractors Association (NECA), Standard of Installation.

PART 2 – PRODUCTS

2.1 GROUND WIRES

- A. Copper only.
- B. Size as shown on drawings, or as required by NEC.
- C. No. 6 AWG minimum.

PART 3 – EXECUTION

3.1 GENERAL

- A. Ground electrical systems and equipment as required by code, utility, local ordinances and to requirements herein.
- B. Install separate code rated grounding conductors to special equipment and activity areas as required by code.

- C. Bond all metallic piping systems and service equipment as required by NEC.
- D. Cable connections and joints shall be thermo-welded.

3.2 EQUIPMENT GROUND

- A. Bond metallic conduits, supports, cabinets and other equipment so ground will be electrically continuous from service to outlet boxes.
- B. Install grounding conductor in nonmetallic and flexible conduit to complete equipment ground continuity. Ground wire shall be bonded at equipment and at first junction box of conduit system on line side of flexible conduit to the system.
- C. Install grounding conductors to permit shortest and most direct path from equipment to ground. When grounding conductor runs through metallic conduit, bond to conduit at entrance and exit with a bolted clamp.
- D. Ground neutral at service only.
- E. Install an insulated equipment grounding conductor in each conduit. Conduit will not be relied upon as the grounding path.
- F. Connections shall be accessible for inspection and checking. No insulation shall be installed over ground connections.
- G. Ground connection surfaces shall be cleaned and all connections shall be made so that it is impossible to move them.
- H. Attach grounds permanently before permanent building service is energized.

END OF SECTION

**SECTION 26 05 29
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

PART 1 – GENERAL

1.2 SCOPE

- A. Provide equipment for the support of electrical equipment as detailed or indicated on the drawings and as specified herein.

1.3 QUALITY ASSURANCE

Reference standards of the following agencies:

- A. National Electrical Contractors Association (NECA), Standard of Installation.
- B. National Electrical Manufacturers Association (NEMA).
- C. American National Standards Institute (ANSI).

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Kindorf
- B. Elcen Co.
- C. Steel City
- D. Unistrut
- E. B-Line

2.2 GENERAL

- A. Metal supporting devices shall be zinc galvanized or cadmium plated steel or malleable iron.

2.3 LIGHTING FIXTURE SUPPORT

- A. Items such as stems, hickies, bar hangers and clips required to securely attach fixtures to ceilings or walls.
- B. Studs and unistrut support for fixture outlet and ceiling support.
- C. Fixture grid hangers for mounting surface fluorescent units to exposed grid ceiling.
- D. Drilled expansion insert type anchors suitable for load and application requirements such as sleeve anchors, lag shields, and plastic anchors.

- E. Provide auxiliary supports so that fixtures can be drawn up tightly, cannot be tilted or rotated and will not be affected by vibrations.

2.4 SUPPORTING STRUCTURES

- A. Rack supports of galvanized steel channel sections with adequate feet to allow secure mounting.
- B. Weld sections, do not use bolts.

2.5 CONDUIT SUPPORTS

- A. Two hole galvanized steel straps.
- B. Continuous slot or T-slot galvanized steel concrete insert channel.

PART 3 – EXECUTION

3.1 PREPARATION

- A. Install hangers, supports and anchors only after structural work, where work is to be installed, has been completed. Correct inadequacies such as proper placement of inserts, anchors and other building structural attachments.
- B. Examine areas and conditions under which equipment and associated components are to be installed and notify Architect, in writing, of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected.

3.2 LIGHTING FIXTURES

- A. Install channel supports across main grid runners or grid supports, securely tied down or anchored for fixtures and devices mounted in suspended ceiling systems so as not to cause tile to sag and so that fixture or device cannot be lifted, rotated or displaced. Provide additional support of ceiling grid or tees at those locations where tiles and ceiling grid sags.
- B. Install grid troffer support clips in accordance with NEC 410-16(c).

3.3 INSTALLATION OF BUILDING ATTACHMENTS

- A. Install building attachments at required locations within concrete or on to structural steel or raceway and equipment support.
- B. Install additional building attachments where support is required for additional concentrated loads.
- C. Install concrete inserts before concrete is placed

3.4 INSTALLATION OF ANCHORS

- A. Install anchors at proper locations to prevent stresses from exceeding those permitted by ANSI B31 and to prevent the transfer of loading and stresses to connected equipment.
- B. Installation methods shall conform with the manufacturer's recommendations for maximum holding power, but in no case shall the depth of hole be less than four bolt diameters. Minimum distance between the center of any expansion anchor and an edge of exterior corner of concrete shall be not less than 4½ times the diameter of the hole in which it is installed.

3.5 SUPPORT OF CONDUIT

- A. Fasten conduit to structural parts of building in a manner acceptable to Engineer.
- B. Do not use perforated hanger iron.
- C. Install concrete insert channel as required, with spacings as recommended by manufacturer. Install with anchor and caps, insert joiner clips and closer seals as required.
- D. Support conduit as follows:
 - 1. Single Conduit Runs
 - a. Vertical Surfaces: Galvanized, heavy duty, sheet steel straps; back straps to be provided for all exposed conduit and conduit on exterior walls.
 - b. Horizontal Surfaces: Galvanized, heavy duty, 2-hole steel pipe straps.
 - 2. Multiple Conduit Runs
 - a. Vertical Surfaces: Horizontal or vertical rack channel with conduit straps as required.
 - b. Horizontal Surfaces: Single or double rack channel trapeze, complete with conduit straps as required; all supported with threaded hanger rods.
 - 3. Passing Between Floors and Through Roof
 - a. 1¼ " and larger conduit runs passing through floors shall be supported at each floor with riser pipe clamps.
 - b. Conduit extending through roof shall pass through a ceiling box at roof lines.
 - c. Provide 14 ga minimum copper box complete with watertight soldered seams and flanged to serve as pitch pocket for each conduit.
 - d. Conduit and pitch pocket shall be installed in advance of roofing work.

3.6 VERTICAL CABLE SUPPORT

- A. Conductors in vertical raceways shall be supported using suitable cable supports. Locate supports so that each 25 ft.-0 in. length of conductor in a vertical raceway will be complete with support.

END OF SECTION

**SECTION 26 05 33
RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS**

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 shall govern work under this section.

1.2 SCOPE

- A. Provide conduit systems, boxes and fittings for all wiring.

1.3 RELATED WORK AND REQUIREMENTS

- A. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
- B. Section 26 05 26 – Grounding and Bonding for Electrical Systems
- C. Section 26 05 29 - Hangers and Supports for Electrical Systems

1.4 QUALITY ASSURANCE

- A. National Electrical Contractor's Association (NECA) Standard of Installation
- B. National Electrical Code (NEC) including State of Wisconsin and local supplements.

PART 2 – PRODUCTS

2.1 GALVANIZED RIGID CONDUIT (GRC) AND INTERMEDIATE METAL CONDUIT (IMC)

- 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 ½ inch.
- C. Connectors and Couplings
 - 1. Threaded.
 - 2. Liquid tight.
 - 3. Insulated throat.

2.2 ELECTRICAL METALLIC TUBING (EMT)

- A. Standard lengths and sizes.
- B. Minimum conduit size shall be ½ inch.
- C. Connectors and Couplings
 - 1. Threaded
 - 2. Insulated throat.

3. Gland compression type.

2.3 POLYVINYL CHLORIDE CONDUIT (PVC)

- A. Standard lengths and sizes.
- B. Minimum size ½" with the exception that the minimum size conduit for underground site lighting circuits shall be 1".
- C. Schedule 40, heavy wall rigid plastic (PVC) conduit manufactured to NEMA TC-2 standards, UL listed and as required by NEC. Sunlight resistant.
- D. Connectors and Couplings
 1. Schedule 40 to match conduit.
- E. PVC conduit is NOT allowed to be run in any area that is in direct sunlight.

2.4 PVC COATED RIGID METAL CONDUIT

- A. Per NEMA Standards Publication No. RN 1 – 1980 and ANSI C80.1.
- B. Rigid steel galvanized conduit with PVC coating.
- C. Full weight 40 mil thick PVC coating, bonding to galvanized metal shall be stronger than plastic tensile strength.
- D. Minimum conduit diameter shall be ½ inch.
- E. Connectors and Couplings
 1. Full weight 40 mil PVC jacket.
 2. PVC gasketed for mating surfaces.
 3. Same as for rigid conduit.

2.5 LIQUIDTIGHT FLEXIBLE METAL CONDUIT

- A. Galvanized spiral strip flexible steel.
- B. Standard conduit sizes.
- C. Heavy wall sunlight resistant PVC jacket.
- D. Minimum size ½ inch.
- E. Connectors and Couplings
 1. Liquid-tight.
 2. Suitable for grounding.
 3. Suitable for wet locations.
 4. Tapered threaded hub.
 5. Non-metallic materials.

2.6 FLEXIBLE METAL CONDUIT

- A. Galvanized spiral strip flexible steel.
- B. Standard conduit sizes.
- C. Minimum size ½" with the exception that 3/8" diameter may be used to serve individual lighting fixtures installed in a suspended accessible ceiling system.
- D. Connectors and Couplings
 - 1. Threaded.
 - 2. Grounding type.
 - 3. Insulated throat.
 - 4. Two screw clamp type with locknuts.
 - 5. Externally secured.

2.7 SURFACE METAL RACEWAYS

- A. Raceways shall be two piece. Front cover shall be removable to provide access to wiring compartment.
- B. Raceways shall be galvanized steel.
- C. Raceways shall be provided with multiple knockouts and screw holes along back channel.
- D. All additional accessories required for a complete installation shall be provided.
- E. Raceways shall be ivory.
- F. Raceway Types
 - 1. Wiremold 500 Series minimum, or approved equal, to feed individual devices, such as occupancy sensors.

2.8 CONDUIT FITTINGS

- A. Fittings shall be steel.
- B. Do not use aluminum or die cast fittings.
- C. Do not use running threads.
- D. Do not use indentor type fittings.

2.9 EXPANSION FITTINGS

- A. Expansion fittings: Copper bonding jumper, Crouse-Hinds Type XJ.
- B. Expansion/deflection fittings: Copper bonding jumper, Crouse-Hinds Type XD.

2.10 CONDUIT BODIES

- A. Galvanized or cadmium plated.

- B. Threaded hubs.
- C. Removeable cover with gasket.
- D. Corrosion-resistant screws.

2.11 SEALS

- A. Wall entrance seals: Link seal type as manufactured by Thunderline Corporation.

2.12 INTERIOR WALL OUTLET BOXES – FLUSH MOUNTED

- A. Stud wall construction. Stamped steel, four-inch square, 2-1/8" deep, with square corners. Provide with raised device rings, height as required for wall finish thickness. Mounting accessories as required. Larger width boxes as required for ganging requirements indicated on plans.
- B. Masonry wall construction. Stamped steel. Face of box flush with wall, 3-1/2" deep box minimum. Width as required for ganging requirements shown on plans.

2.13 INTERIOR WALL OUTLET BOXES – SURFACE MOUNTED – DRY LOCATION

- A. In public areas: Cast malleable aluminum with threaded conduit hubs. Two inches deep minimum. Internal mounting ears. Boxes shall be coated with electroplated zinc, a dichromate coating and an aluminum polymer enamel finish.
- B. Other areas: Stamped steel, four-inch square, 2-1/8" deep, with round corners. Provide rounded corner raised box covers with openings as required for devices being installed.

2.14 INTERIOR WALL OUTLET BOXES-SURFACE MOUNTED-DAMP OR WET LOCATION

- A. Cast malleable aluminum with threaded conduit hubs. Two inches deep minimum. Internal mounting ears. Boxes shall be coated with electroplated zinc, a dichromate coating and an aluminum polymer enamel finish.

2.15 EXTERIOR WALL OUTLET BOXES - SURFACE MOUNTED

- A. Single or two gang as indicated on the plans. Cast malleable iron with threaded conduit hubs. Two inches deep minimum. Internal mounting ears. Boxes shall be coated with electroplated zinc, a dichromate coating and an aluminum polymer enamel finish.

2.16 CEILING BOXES - FLUSH MOUNTED - FOR SURFACE AND PENDANT LIGHT FIXTURES

- A. Dropped ceiling construction. Stamped steel four-inch octagon box set flush with finished surface, complete with 3/8" fixture stud.
- B. Cast in place concrete construction. Stamped steel four-inch octagonal, galvanized concrete boxes, having a minimum depth of 3", complete with 3/8" fixture stud.

2.17 ELECTRICAL BOXES IN CORROSIVE LOCATIONS

- A. PVC coated cast steel boxes compatible with conduit system installed. Coating shall cover both interior and exterior surfaces. See floor plans for identification of corrosive areas.

2.18 SPECIAL BOXES

- A. Provide special boxes fabricated by the manufacturer of fixtures and other devices where standard outlets are not applicable.

2.19 INTERIOR GENERAL PURPOSE JUNCTION AND PULL BOXES

- A. Fabricated from code gauge galvanized steel with covers held in place by corrosion resistant machines screws.
- B. Size as required by code for number of conduits and conductors entering and leaving box.
- C. Provide with welded seams, where applicable and equip with corrosion-resistant nuts, bolts, screws and washer.

2.20 ACCESS PANELS

- A. Furnish type necessary for the particular wall or ceiling construction in which they occur.
- B. Panels to be completed with screwdriver cam locking device.

2.21 BETWEEN STUD BOX SUPPORT BRACKETS

- A. Stamped and fabricated steel bracket designed to support 4" or 4-11/16" electrical boxes between wall studs.
- B. Manufactured by Erico, RBS series or equivalent.

PART 3 – EXECUTION

3.1 GENERAL

- A. Interior conduits for wiring systems rated 0 to 600 volts shall be electrical metallic tubing (EMT). Exceptions to the requirements stated above are as follows.
 - 1. Poured concrete: PVC.
 - 2. Motor connection: Flexible conduit of appropriate type.
 - 3. Hazardous and corrosive locations: PVC coated Rigid Metal Conduit.
 - 4. Corrosive locations only: PVC.
 - 5. Damp/wet areas (i.e. crawl spaces): PVC.
 - 6. Areas subject to damage and exterior locations: GRC.
 - 7. Where otherwise stated in these specifications or on the floor plans.

3.2 PROCEDURES AND PRACTICES

- A. All conduits shall be routed concealed in finished spaces and shall not be visible at any point within the finished space or from the building's exterior. This requirement also applies to new conduits installed in existing construction. Exposed raceway may be used only where physically impossible to route concealed in construction. In such cases where exposed raceway is allowed it shall be surface type in public areas as dictated by the wiring quantities. In each case the specific raceway type and routing shall be submitted to the Architect for approval. Where allowed, the general installation requirements are as follows:
 - 1. Raceways shall be routed horizontally along the corners of walls and ceilings, directly above edges of base molding at floors, or along the tops of window and door frames.
 - 2. Raceways shall be routed vertically along corners of adjacent walls and along the edges of window and door frames.
 - 3. Raceways shall not be routed down or across open wall surfaces except in portions of runs not exceeding 12" in length.
 - 4. Raceways shall be painted to match wall finishes. EC is responsible for painting of all raceways.
 - 5. Fittings and boxes used with raceways shall be specifically designed and approved for use with the raceways.
- B. Cut joints shall be square, reamed smooth and drawn up tight.
- C. Keep conduit plugged, clean and dry during construction.
- D. Cap spare conduits.
- E. Provide riser clamps around all conduits 1-1/4" or larger that are routed between floors. Provide conductor support in vertical risers greater than 20' as appropriate.
- F. Provide a watertight conduit system where installed in wet locations.
- G. Route conduit runs above suspended acoustical ceilings so as not to interfere with ceiling tile removal. Conduit supports shall be attached to building structural elements. Conduits shall not be supported by or attached to the suspension systems for dropped ceiling systems unless specifically detailed on the drawings.
- H. Route all conduits (including conduits routed above ceilings) parallel to or at right angles with lines of the building construction and structural members except conduit runs routed concealed in pour-in-place concrete floor slabs may be run in direct line from source load.
- I. Make bends and offsets without kinking or destroying smooth bore of conduit. Arrange bends and offsets in parallel conduits to present a neat symmetrical appearance.
- J. Secure conduits in place with malleable corrosion-proof alloy straps or hangers. Conduit straps used in corrosive areas shall be PVC coated.
- K. The use of perforated strapping as a conduit hanging method is not approved.

- L. Conduit runs that extend through areas of different temperature or atmospheric conditions shall be sealed, drained and installed in a manner that will prevent drainage of condensed or entrapped moisture into cabinets and equipment enclosures.
- M. Install flexible steel conduit whips from an independent junction box mounted above ceiling to recessed ceiling mounted lighting fixtures. Allow for positioning of equipment to tile increments.
- N. Install conduit expansion fittings where conduits cross expansion joints.
- O. Install No. 12 pull wire in empty conduit.
- P. All wiring in raceways shall be provided with a separate green grounding conductor.

3.3 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 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 non-flammable.
- 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 penetrations openings shall be as small as possible.
- F. The foam sealant shall meet all fire test and hose stream test requirements of ASTM E119-73 and shall be UL Classified as a Wall Opening Protective Device.
- G. All penetrations through non-fire rated walls shall be sealed with an appropriate sealant.

3.4 CUTTING AND PATCHING

- A. Provisions for opening, holes and clearances through walls, floors, ceilings and partitions shall be made in advance of construction.

- B. Provide cutting, patching and painting necessary for the installation of electrical systems.
- C. Where conduits need to penetrate concrete or masonry construction below grade, the EC shall install PVC sleeves with integral waterstop, one (1) inch larger in diameter than the conduit being installed. Install sleeves before walls and/or slabs are poured or constructed.
- D. Where conduits need to penetrate concrete or masonry construction above grade, the EC shall install 22 gauge galvanized steel pipe sleeves, one (1) inch larger in diameter than the conduit being installed. Sleeves shall extend 2" above and below the floor slab penetrated. Install sleeves before walls and/or slabs are poured or constructed.
- E. The Electrical Contractor shall prepare drawings indicating size and location of all anticipated floor sleeves for the installation of electrical conduits. Such drawings shall be made available to the General Contractor 10 days prior to any scheduled concrete work.

3.5 RESTRICTIONS

- A. Conduits routed parallel to steam lines, hot water pipes, high temperature piping or ducts shall be routed at least 12" from such and shall be a minimum of 12" clear when crossing same.
- B. Do not route conduit over boiler, incinerator or other high temperature equipment.
- C. Where conduits must cross or follow the same path as water, steam or other fluid piping, run electrical conduits above such piping wherever possible.

3.6 ADJUSTMENT AND CLEANING

- A. Restore damaged areas on PVC jacketed, rigid conduit with spray type touch-up coating compound or as directed by manufacturer.
- B. Pull cleaning plug through conduits to clear of dirt, oil and moisture.

3.7 CONDUIT SYSTEMS

- A. Where raceways are required, separate raceway systems shall be provided for each wiring system as follows:
 - 1. 208 volt normal power wiring systems.
 - 2. 208 volt code required emergency power wiring systems.
 - 3. 480 volt normal power wiring systems.
 - 4. 480 volt code required emergency power wiring systems.

3.8 CONDUIT FITTINGS

- 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 condensation 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.
- H. Exposed PVC runs, subject to temperature changes of more than 20 degrees, and longer than 10 feet shall have an expansion fitting (long or short type as appropriate) installed in middle of run.

3.9 BOX INSTALLATION

- A. Install electrical boxes as indicated in compliance with NEC requirements, in accordance with the manufacturer's written instructions and with recognized industry practices to ensure that the boxes serve the intended purposes.
- B. Seal conduit at entrance to weatherproof boxes for interior and exterior locations exposed to weather or moisture.
- C. Install knockout closures to cap unused knockout holes where blanks have been removed.
- D. Locate boxes so as to assure accessibility of electrical wiring. Relocate boxes rendered inaccessible by the installation of work by other trades.
- E. Secure boxes rigidly to the substrate upon which they are being mounted or solidly embed boxes in concrete or masonry. Do not support from conduit.
- F. Set boxes, in concealed conduit runs, flush with wall surfaces, with or without covers, as required.
- G. Do not install boxes back to back or through wall. Offset outlet boxes on opposite sides of wall a minimum of 12 inches.
- H. Set outlet boxes parallel to construction, securely mounted and adjusted to set true and flush with the finished surface.
- I. Do not burn conduit holes, use knock-out punches or hole saws.
- J. Use "no-bolt" studs where specifically detailed on the drawings.

- K. Boxes shall be sized per code to accommodate the number and size of conduit entrances to the box and to accommodate the number of conductors, splices, fittings, etc., within the box. Do not use box extensions to create additional volume to meet NEC requirements for the number of conductors contained in a box.

3.10 EXPOSED OUTLET AND JUNCTION BOXES

- A. Install non-rusting metal weatherproof cover on recessed junction box in new walls or non-rusting surface mounted metal junction boxes on existing walls outdoors.

3.11 INTERIOR OUTLET BOX ACCESSORIES

- A. Provide outlet box accessories as required for each installation, such as mounting brackets, wallboard hangers, extension rings, fixture studs, cable clamps and metal straps for supporting outlet boxes, compatible with outlet boxes being used and meeting requirements of individual wiring situations.

3.12 LIGHTING FIXTURE OUTLET BOXES

- A. Securely mount with approved type bar hangers spanning structural members to support weight of fixture.
- B. Do not support from conduit.
- C. Equip with 3/8" fixture studs and tapped fixture ears for surface mounted or pendant mounted lighting fixtures. Fixture studs shall be provided for mounting of all lighting fixtures exceeding 25 lbs in weight. Fixture studs shall be attached through knockouts at the top of the box.
- D. Provide additional attachments from structure for outlet boxes supporting lighting fixtures weighting in excess of 25 lbs.

END OF SECTION

**SECTION 26 05 53
IDENTIFICATION FOR ELECTRICAL SYSTEMS**

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 shall govern work under this section.

1.2 SECTION INCLUDES

- A. Nameplates
- B. Labels

1.3 RELATED WORK

- A. Section 26 05 00 – Common Work Results for Electrical

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Nameplates:
 - 1. Engraved three-layer laminated plastic, white letters on a black background. Emergency system shall use white letters on a red background.
- B. Tape (phase identification only):
 - 1. Scotch #35 tape in appropriate colors for system voltage and phase.
- C. Adhesive type labels shall be typed with black text on white background for boxes in non-public areas and black text on clear background for wiring device faceplates.
- D. Embossed tape is not permitted.

PART 3 – EXECUTION

3.1 GENERAL

- A. Where mixed voltages are used in one building (e.g. 4160 volt, 480 volt, 208 volt) each switch, junction box, equipment, etc., on each system shall be labeled for voltage in addition to the other requirements listed herein.
- B. All branch circuit and power panels shall be identified with the same name used at the main distribution panel.
- C. Handwriting is not acceptable for any identification, including any additional identification required by inspectors or other code officials.

3.2 INSTALLATION

- A. Clean and degrease surfaces to receive labels or nameplates.
- B. Install nameplates parallel to equipment lines.
- C. Secure nameplates to equipment using screws, rivets or adhesive.
- D. Provide nameplate for each contactor or disconnect switch.
 - 1. Identification shall be on the exterior of the unit, except for flush equipment in public areas which shall have the identification inside the door or cover.
- E. Label each end of empty conduit runs to indicate the use of the conduit and the location of opposite end and plug conduit ends. Use room numbers that are permanently assigned.

3.3 EQUIPMENT IDENTIFICATION

- A. TYPICAL EQUIPMENT
 - 1. Identify using nameplates for lighting and appliance panelboards, timeclocks, contactors, remote control stations, lighting control panels: ½ inch: identify equipment designation (upper line); ¼ inch: identify voltage rating and source (lower line).

3.4 JUNCTION BOX/PULL BOX IDENTIFICATION

- A. Junction Boxes and Pull Boxes for power distribution systems:
 - 1. Normal Power: Cover shall indicate voltage using ½" text; source(s) and circuit(s) contained within using ½" text. Identification shall be by means of adhesive labels.
 - 2. Emergency Power: Cover shall be painted red; cover shall indicate voltage with "EM" added (i.e. 120EM) using ½" text; source(s) and circuit(s) contained within using ½" text. Identification shall be by means of adhesive labels.

3.5 CONDUCTOR IDENTIFICATION

- A. Install label tags on conductors in junction boxes, pull boxes, wireways and wiring gutters of panels.
- B. Line voltage conductors shall be identified by panel and circuit number using sleeve type adhesive markers.
- C. Each phase conductor of each feeder shall be identified at both ends and at all accessible locations with colored plastic tape, as well as typed identification labeling. Each phase shall be identified by a different color per industry standards. Painted identification is not acceptable.
- D. Where wires of different system junction in a common box each cable shall be grouped with its own system and identified using tags or identification strips.

3.6 BRANCH CIRCUIT IDENTIFICATION

- A. Each distribution and lighting panel shall be equipped with an updated typewritten directory describing the loads served. Directory shall be contained in a steel frame mounted on the inside face of the panel's door and shall be covered with a sheet of clear plastic.
- B. Circuit descriptions shall be complete and include device/equipment type and relative location.

END OF SECTION

**SECTION 26 50 00
LIGHTING**

PART 1 – GENERAL

1.1 RELATED REQUIREMENTS

- A. Applicable provisions of Division 1 shall govern work under this section.

1.2 SCOPE

- A. Provide and install lighting fixtures and related accessories as indicated on the drawings and as specified herein.
- B. Furnish and install the initial fill of lamps for all lighting fixtures. Lamps shall be of size and type as called for in the lighting fixture schedule and as recommended by the manufacturer. Where scheduled lamp types differ from that recommended by the manufacturer, the Contractor shall obtain approval from Engineer prior to furnishing lamps as recommended by the lighting fixture manufacturer.
- C. Provide ballasts for fluorescent and high intensity discharge lighting fixtures as indicated on the drawings and as specified herein.

1.3 RELATED WORK

- A. Section 26 05 26 – Grounding and Bonding for Electrical Systems
- B. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
- C. Section 26 05 29 – Hangers and Supports for Electrical Systems

1.4 QUALITY ASSURANCE

- A. Comply with the requirements of the following regulatory agencies:
 - 1. National Fire Protection Association (NFPA) Chapter 70 - National Electric Code (NEC) and Wisconsin Amendments thereto.
 - 2. Underwriters Laboratories (UL) Approval
- B. Conform to the standards of the following agencies:
 - 1. National Electrical Manufacturers Association (NEMA)
 - 2. Certified Ballast Manufacturers Association (CBM)
 - 3. American National Standards Institute (ANSI), ANSI C82.1.
- C. Ballasts shall have the following approvals/certifications:
 - 1. Certified Ballast Manufacturer's (CBM) Approval
 - 2. Underwriters Laboratories (UL) Approval
 - 3. Electrical Testing Laboratory (ETL) Certified

1.5 SHOP DRAWING SUBMITTALS

- A. Submit manufacturer's printed data on lighting fixtures.
- B. Submit fixture shop drawings in booklet form with index and a separate sheet for each fixture, assembled in luminaire "type" alphabetical order, with specified fixture and accessories clearly indicated on each sheet.
- C. Submit copy of UL test report if requested by Engineer.
- D. Include the following information as a minimum:
 - 1. Dimensional informational.
 - 2. Description of the fixture construction.
 - 3. Recommended lamps for use in that particular fixture.
 - 4. Photometric test reports.
 - 5. Any warnings regarding special requirements regarding the use of the lighting fixture.

1.6 WARRANTY

- A. All lamps shall be guaranteed for 50% of rated life after date of final acceptance.

1.7 EXTRA MATERIAL

- A. Provide ten (10) percent of each lamp type, but not less than one (1) of each type.
- B. Provide three (3) percent of each ballast type, but not less than one (1) ballast of each type.

PART 2 – PRODUCTS

2.1 GENERAL

- A. Provide lighting fixtures of the size, type and rating indicated in "Lighting Fixture Schedule" complete with lamps, lampholders, reflectors, ballasts, starters, wiring and other equipment required for a complete working installation.
- B. Fixture catalog numbers do not necessarily include all accessories required to complete the installation. Catalog numbers used in the Lighting Fixture Schedule are used to designate the fixture series, size and lamping requirements. Refer to the lighting fixture schedule notes for additional requirements.
- C. Gasketing material for use in lighting fixtures shall be vinyl, neoprene or other non-aging type material as approved by Engineer.
- D. Provide proper trim for each fixture as required for the various types of ceiling being installed throughout project. Provide the necessary plaster frames, fixture ends, caps, suspension units, mounting brackets, and/or other auxiliary parts required to complete the fixture installation.

- E. Ballasts shall comply with UL requirements with regards to thermal protection. Each ballast shall be equipped with thermal sensitive devices that will de-activate the ballast in the event higher than normal operating temperatures occur within the ballast. Internal protective devices shall be automatic resetting.

2.2 FLUORESCENT FIXTURES

- A. Fabricate of sheet steel, die-formed to provide rigidity.
- B. The color finish of each surface or pendant mounted lighting fixture is to be verified with the Architect at the time of shop drawing review.
- C. Lens panels for fluorescent troffers shall be framed and be equipped with hinge and latch. Equip frames and louvers with retaining means to support frame during relamping.
- D. Design fluorescent rapid start fixtures, 40W and smaller, to incorporate a grounded metal starting aid such as reflector, ballast channel strip, at least 1 in. wide over full length of lamp and within maximum ½ in. distance from lamp per ANSI C82.1.
- E. Design fixtures such that case temperature of ballast does not exceed 90° C.

2.3 FLUORESCENT BALLASTS

- A. All fluorescent ballasts shall be electronic type and shall meet the following specs:
 - 1. UL Listed (Class P) sound rating A and CSA certified.
 - 2. Comply with EMI and RFI limits set by the FCC (CFR 47 part 18) or NEMA and not interfere with normal electrical equipment.
 - 3. Meet any applicable standards set forth by ANSI.
 - 4. Be potted or conformal coated in a metallic case and not contain PCBs.
 - 5. Provide normal rated lamp life as stated by lamp manufacturers (i.e. rated life at 3 hour burn time per start).
 - 6. Provide independent test results from an approved testing laboratory for all of the specifications below. This is required for all submitted ballasts.
 - 7. Nominal power factor of .90 or higher.
 - 8. Total harmonic distortion of less than 10% at 120 or 277 volts (universal voltage).
 - 9. **Ballast factor 0.87-0.88, unless noted on the plans.**
 - 10. Frequency of operation shall be 40 kHz - 50 kHz and units shall operate without visible flicker.
 - 11. Ballast efficiency factor shall meet Consortium of Energy Efficiency (www.cee1.org) specifications (adopted by Focus on Energy program).
 - 12. Multi-lamp ballasts shall operate in parallel so that when one lamp burns out, the other lamps will continue to operate at full light output.
 - 13. Ballasts shall carry a minimum 5 year warranty with a \$10 replacement labor allowance.
 - 14. Ballasts shall not be affected by lamp failure.
 - 15. Ballasts shall be a standard production item.
 - 16. Ballasts shall be marked with manufacturer's name, part number, supply voltage, power factor, open circuit voltage, current draw for each lamp type and UL Listing.
 - 17. Ballasts shall withstand line transients as defined in IEEE 587, Category A.
 - 18. Octron T8 lamp starting temperature of -20°F.
 - 19. SYSTEM PERFORMANCE: System performance for T8 instant-start ballasts shall be as follows:

Instant-Start, Low Ballast Factor (BF = 0.77-0.78)

Lamps	Nominal Lamp Watts	System Input (Max. Watts @ Univ Volt)
1 – F32T8	32	25
2 – F32T8	32	48
3 – F32T8	32	73
4 – F32T8	32	96

Instant-Start, Normal Ballast Factor (BF = 0.87-0.88)

Lamps	Nominal Lamp Watts	System Input (Max. Watts @ Univ Volt)
1 – F32T8	32	28
2 – F32T8	32	56
3 – F32T8	32	83
4 – F32T8	32	108

Instant-Start, High Ballast Factor (BF = 1.15-1.20)

Lamps	Nominal Lamp Watts	System Input (Max. Watts @ Univ Volt)
1 – F32T8	32	38
2 – F32T8	32	74
3 – F32T8	32	111
4 – F32T8	32	144

20. SYSTEM PERFORMANCE: System performance for T8 programmed-start ballasts shall be as follows:

Programmed-Start, Low Ballast Factor (BF = 0.71)

Lamps	Nominal Lamp Watts	System Input (Max. Watts @ Univ Volt)
1 – F32T8	32	25
2 – F32T8	32	47
3 – F32T8	32	73
4 – F32T8	32	93

Programmed-Start, Normal Ballast Factor (BF = 0.88)

Lamps	Nominal Lamp Watts	System Input (Max. Watts @ Univ Volt)
1 – F32T8	32	31
2 – F32T8	32	60
3 – F32T8	32	88
4 – F32T8	32	118

Programmed-Start, Normal Ballast Factor (BF = 1.15)

Lamps	Nominal Lamp Watts	System Input (Max. Watts @ Univ Volt)
1 – F32T8	32	38
2 – F32T8	32	75
3 – F32T8	32	110
4 – F32T8	32	146

Acceptable ballast manufacturer's names and product lines are as follows:
 Osram Sylvania – Quicktronic High Efficiency and Quicktronic PROstart.
 GE Lighting – Ultramax and UltraStart.
 Maxlite – High Efficiency Ballast.
 Advance – Optanium.
 Universal Lighting Technologies – F32T8.

21. SYSTEM PERFORMANCE: System performance for T5 programmed-start ballasts shall be as follows:

Programmed-Start, Normal Ballast Factor (BF = 1.00)

Lamps	Nominal Lamp Watts	System Input (Max. Watts @ Univ Volt)
1 – F28T5	28	32
2 – F28T5	28	65

22. SYSTEM PERFORMANCE: System performance for T5HO programmed-start ballasts shall be as follows:

Programmed-Start, Normal Ballast Factor (BF = 1.00)

Lamps	Nominal Lamp Watts	System Input (Max. Watts @ Univ Volt)
1 – F54T5	54	61
2 – F54T5	54	121

Acceptable T5 ballast manufacturer's names and product lines are as follows:

Osram Sylvania – Quicktronic Fixed Output (1.0BF) and Quickstep Bi-level 100-50% (0.95BF)

Manufacturer names are used to develop quality and performance requirements only. All manufacturers and their products shall meet the system performance requirements and this entire specification.

2.4 COMPACT FLUORESCENT BALLASTS (ELECTRONIC)

- A. Ballasts shall be high power factor, class P, with voltage rating matching the branch circuit voltage.
- B. Ballast factor shall be 0.95 or higher.
- C. Ballast shall have lamp fault shut-off circuitry to prevent starting of a faulty lamp.
- D. Cold-weather ballast must reliably start and operate the lamp in ambient temperatures down to 0°F for the rated life of the lamp.

2.5 DIMMING ELECTRONIC BALLASTS (Fluorescent)

- A. Ballast shall provide continuous, flicker-free dimming from 100% to 3% (for compact fluorescent), or 5% (for T8 lamps) or 1% (for T5 lamps).
- B. Ballasts shall be analog (0-10 volt) 4-wire type.
- C. Ballast shall have Total Harmonic Distortion of less than 10%.
- D. Ballast power factor shall be greater than 0.85 (for T8 lamps) or 0.95 (for T5 lamps).
- E. Ballast factor shall be 1.0 for T5 and compact fluorescent lamps.
- F. Ballast shall be high frequency electronic type and operate lamps at a frequency above 25kHz for T5 lamps.
- G. Ballast shall have built-in inrush current limiting circuitry, maximum of 7 amps for 120 volts and 3 amps for 277 volts.
- H. Ballast shall have internal fusing.
- I. Ballast shall have ultra-quiet operation.
- J. Operating temperature shall not exceed 75° C on the case during normal operation.
- K. Minimum lamp starting temperature shall be 10°C / 50° F.
- L. Ballasts shall be equal to Universal SuperDim series.

2.6 LAMPS

- A. Four Foot Fluorescent Lamps: High Performance T8 Lamps:
1. Minimum 3100 initial lumens and minimum of 2945 mean lumens.
 2. Minimum 36,000 hour rated life at three-hour starts.
 3. Color Rendering Index (CRI) of 85 or higher.
 4. 4100°K color temperature, unless noted on plans.
 5. Lamps shall be suitable for use with instant start ballasts and occupancy sensors.
 6. Lamps shall meet "TLCP" requirements for low mercury.
 7. Mean system efficiency equal to 90MLPW minimum, with instant start ballasts.

Acceptable lamp manufacturers and catalog numbers are (or equal):
Sylvania F032/841/XPS/ECO

Manufacturer names and catalog numbers are used to develop quality and performance requirements only. Lamps manufactured by others will be accepted provided they meet or exceed the specifications.

- B. Four Foot Fluorescent Lamps: High Performance T5HO Lamps:
1. Minimum 4450 initial lumens (at 25 degrees C), 5000 initial lumens (at 35 degrees C).
 2. Minimum 30,000 hour rated life at three-hour starts.
 3. Color Rendering Index (CRI) of 85 or higher.
 4. 4100°K color temperature unless noted on the plans.
 5. Lamps shall be suitable for use with programmed rapid start ballasts and occupancy sensors.
 6. Lamps shall meet "TLCP" requirements for low mercury.
 7. Mean system efficiency equal to 95MLPW minimum, with programmed rapid start ballasts.

Acceptable lamp manufacturers and catalog numbers are (or equal):
Sylvania FP54/841/HO/ECO

Manufacturer name and catalog number is used to develop quality and performance requirements only. Lamps manufactured by others will be accepted provided they meet or exceed the specifications.

- C. Compact Fluorescent Lamps:
1. Compact fluorescent lamp temperature shall be 4100°K unless noted on the plans with a color rendering index (CRI) at or above 80. See lighting fixture schedule on drawings.
- D. All lamps shall be new.

2.7 LENSES

- A. Plastic fixture lenses and diffusers, 100% virgin acrylic material. Lenses minimum .125 average thickness.

2.8 STEMS

- A. Where stems are furnished by fixture manufacturer, he shall verify length prior to releasing for shipment.
- B. Where stems are furnished by Contractor, he shall verify length prior to installation.
- C. Suspended fixtures shall have swivel type aligner hangers in ceiling outlet boxes to ensure plumb suspension.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Install lighting fixtures of type indicated where shown on drawings and at indicated heights.
- B. Install in accordance with manufacturer's written instructions.
- C. Fasten fixtures securely to indicate structural support members.
- D. Install pendant fixtures plumb.
- E. Provide proper bushing for wire entrances. Ground fixture chassis to conduit system.
- F. Coordinate with trades so lighting fixtures are properly aligned with items such as diffusers, grilles and speakers. If necessary, relocate fixtures as directed so there will be no conflict with other equipment.
- G. Mount stem mounted fixtures with swivel aligners and stem lengths as required. Verify stem lengths.
- H. Make fixture holes for wire entrance with knock-out punches or hole saw, remove burrs. Do not cut holes with tin snip.
- I. Special care shall be taken to assure light-tight joints between recessed fixtures and ceiling.
- J. Recessed lighting fixtures which are installed in a rough textured ceiling surface whereby light may be emitted between fixture frame and ceiling surface shall have black self-adhesive polyfoam gasketing installed around inside edges of frame to prevent leaks.
- K. Care shall be taken in placement of outlets and surface-mounted fixtures to maintain alignment, spacing, layout and general arrangement shown on drawings. Contractor may vary these dimensions slightly in order to clear obstructions. Any major changes in the arrangement must be approved by Engineer.
- L. Install tandem fixtures in continuous rows providing that finished appearance conforms to appearance of individual units.
- M. Align and plumb rows of light fixtures.
- N. Provide additional trim as required for neat plumbing of recessed fluorescent lights mounted in patterns.
- O. Mount wall and ceiling fixtures independent and secure so that they are not dependent on finish for support and cannot be rotated or displaced.
- P. Maintain clearances as required in Section 410.66 of the NEC. Notify Engineer of any conflict, prior to rough-in.

3.2 FIXTURE SUPPORTS

- A. See Section 26 05 29 for fixture support items such as device procedures and retaining clips.
- B. Surface or pendant mounted lighting fixtures weighing in excess of 25 pounds shall be securely supported to the outlet box through the use of a fixture stud. The stud shall attach to the box through a knockout in the top of the box. Fixture support shall not be solely dependant on the ears of the box.
- C. Securely attach outlet boxes to the building structure either directly to the structure or through the use of a threaded rod or steel channel.
- D. The contractor is required to determine and provide all necessary mounting hardware, plates, supports, etc. as required, and finished in a color per architect's requirements to install fixtures in locations as indicated on the plans.

3.3 ADJUST, CLEAN AND LUBRICATE

- A. Clean lighting fixtures of dirt and debris prior to acceptance. Cleaning shall include lamps, reflectors, lenses, louvers and exposed trims and housing.
- B. Protect installed fixtures from damage during the construction period.
- C. Remove conspicuous trade labels.

3.4 FIELD QUALITY CONTROL

- A. All lamps shall be new and delivered to the job site in sealed cartons.
- B. At time of Substantial Completion, replace lamps in lighting fixtures which are observed to be noticeably dimmed after Contractor's use and testing, as judged by the Engineer.

3.5 PRODUCT STORAGE AND HANDLING

- A. Handle lighting fixtures carefully to prevent breakage, denting and scoring finish.
- B. Do not install damaged lighting fixtures.
- C. Do not repair damaged fixtures; replace and return damaged units to equipment manufacturer for repair.
- D. Store lighting fixtures in a clean, dry space. Store in original cartons and protect from dirt, physical damage, weather and construction traffic.

3.6 JOB CONDITIONS

- A. Contractor shall determine that ceiling suspension system is adequately supported to receive and support the lighting fixtures. Where deemed inadequate, do not install fixtures until additional support has been provided.
- B. Verify local codes and ordinances that may pertain to installation and aiming of exterior fixtures. Notify Engineer prior to Bid time if problems are encountered.

3.7 EXTRA MATERIALS

- A. Turn over to Owner all extra materials in original packaging/containers and store in a location as directed. The Contractor shall get a written confirmation from Owner that the extra materials were left at the site.

END OF SECTION

ELECTRICAL UPGRADES VETERANS MEMORIAL COLISEUM MADISON, WISCONSIN

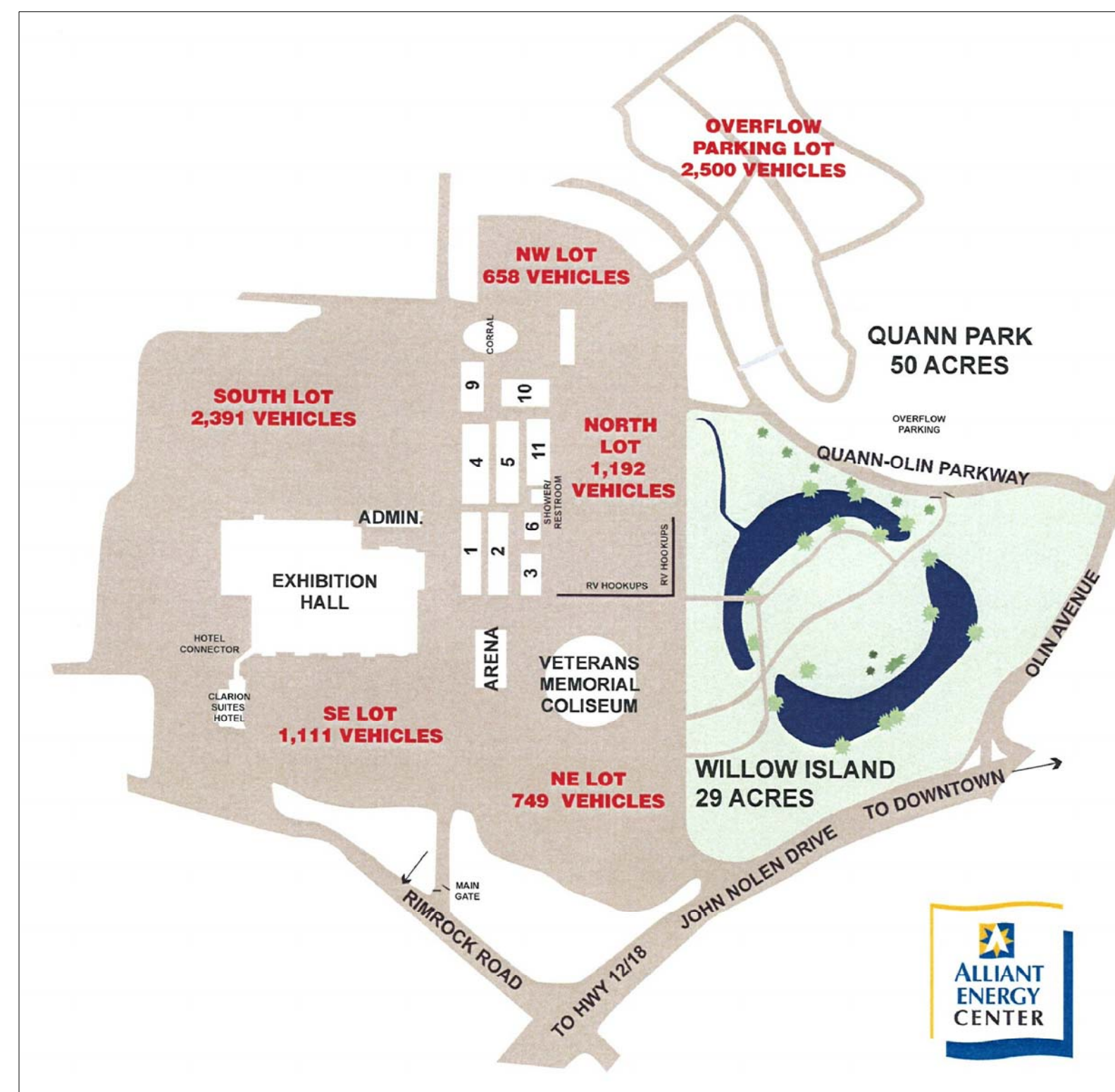
OWNER

DANE COUNTY DEPARTMENT OF PUBLIC WORKS,
HIGHWAY AND TRANSPORTATION

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

ELECTRICAL

POWRTEK ENGINEERING, INC.
20900 SWENSON DRIVE, SUITE 570
WAUKESHA, WISCONSIN 53186
TEL: 262-827-9575
FAX: 262-827-9615



ALLIANT ENERGY CENTER SITE MAP →N←

ABBREVIATIONS:

A/E - ARCHITECT/ENGINEER
ABV - ABOVE
ATF - ABOVE FINISHED FLOOR
ARCH - ARCHITECT
AFG - ABOVE FINISHED GRADE
BRK - BREAKER
BFG - BELOW FINISHED GRADE
C - CONDUIT
CB - CIRCUIT BREAKER
CMT - CIRCUIT
CLG - CEILING
DN - DOWN
EC - ELECTRICAL CONTRACTOR
ELEV - ELEVATION
EX - EXISTING TO BE RELOCATED
ETR - EXISTING TO REMAIN
EX - EXISTING
FXT - FIXTURE
FLUOR - FLUORESCENT
GC - GENERAL CONTRACTOR
JB - JUNCTION BOX
LOC - LOCATION
LTC - LIGHTING
MH - METAL HALIDE
NIC - NOT IN CONTRACT
OC - ON CENTER
PNL - PANEL
R - RECEPTACLE
REL - RELOCATED
TYP - TYPICAL
WP - WEATHERPROOF

ELECTRICAL SYMBOLS:

□ FLUORESCENT LIGHTING FIXTURE
□ WALL MOUNTED FLUORESCENT FIXTURE
□ CEILING MOUNTED LIGHTING FIXTURE
NOTE: SHADING INDICATES FIXTURE ON NIGHT LIGHT AND/OR EMERGENCY CIRCUIT.
□-H WALL MOUNTED LIGHTING FIXTURE
NOTE: SHADING INDICATES FIXTURE ON NIGHT LIGHT AND/OR EMERGENCY CIRCUIT.
+ SWITCH DESIGNATION
□ JUNCTION BOX
⊕ DUPLEX RECEPTACLE
⊕ OCCUPANCY SENSOR
L DENOTES THE FOLLOWING:
UA - ULTRASONIC AREA COVERAGE
LIGHT LINE - EXISTING
DARK LINE - NEW

GENERAL ELECTRICAL NOTES:

- ALL SYMBOLS SHOWN MAY NOT APPEAR ON DRAWINGS.
- THE EC SHALL VERIFY EXISTING CIRCUITING (AND ROUTING) AND ADJUST PROPOSED EQUIPMENT/WIRING AS NEEDED.
- PROVIDE TYWRAP FOR EXCESS CORD LENGTH AS NEEDED.
- CIRCUIT WIRING SHALL NOT "FEED-THRU" PROPOSED LIGHT FIXTURES.

LIGHTING FIXTURE SCHEDULE

ABBREVIATIONS											
C - CONCRETE	F - FLUSH	P - PENDANT	U - UNIVERSAL								
CB - CONCRETE BASE	CH - CHAIN/CABLE	G - GYP BOARD	R - RECESSED	V - VARIES							
ES - EXPOSED STRUCTURE	LG - LAYIN GRID	S - SURFACE	W - WALL								
DES.	DESCRIPTION	LAMP DATA			LIGHTING FIXTURE		APPROVED EQUAL MANUFACTURER	MTG.	MTG. SURF.	SEE NOTE	
		NO.	TYPE	VOLT	DEPTH	MFR.					CAT. NO.
A	FLUORESCENT HIGH BAY	6	F54TSHO	120	-	LITHONIA	FB824-6-54TSHO-F1X20-MVOLT-2/3-GE810PS-LP841-1BAC120M20-CS3W	HOLOPHANE, DAY-BRITE, COOPER	P	ES	1,2
B	FLUORESCENT HIGH BAY W/ DIMMING BALLAST	3	F54TSHO	120	-	LITHONIA	FB814-3-54TSHO-F1X20-MVOLT-MARK10-LP841-1BAC120M20-CS3W	HOLOPHANE, DAY-BRITE, COOPER	P	ES	1,2,5
B1	FLUORESCENT HIGH BAY	3	F54TSHO	120	-	LITHONIA	FB814-3-54TSHO-F1X20-MVOLT-1/3-GE810PS-LP841-1BAC120M20-CS3W	HOLOPHANE, DAY-BRITE, COOPER	P	ES	1,2,5
C	FLUORESCENT HIGH BAY W/ DIMMING BALLAST	3	F54TSHO	120	-	LITHONIA	FB814-3-54TSHO-F1X20-MVOLT-MARK10-LP841-1BAC120M20-CS3W	HOLOPHANE, DAY-BRITE, COOPER	P	ES	2,3
D	FLUORESCENT HIGH BAY W/ DIMMING BALLAST	2	F54TSHO	120	-	LITHONIA	FB814-2-54TSHO-B1X20-MVOLT-MARK10-LP841-THSDHB-OUTCTR	HOLOPHANE, DAY-BRITE, COOPER	P	ES	4

- NOTES:
- MOUNT FROM LIGHTING BRIDGE.
 - PLUG SHALL MATCH EXISTING TWISTLOCK OUTLET.
 - MOUNT FROM CATWALK RAILING.
 - PROVIDE AN APPLETON #11362 SAFETY SWIVEL HANGER AND 12" STEM.
 - VERIFY CORD LENGTH NEEDED, ESPECIALLY FOR END LOCATIONS FOR COLISEUM FLOOR LIGHTS.

DRAWING INDEX

- T1 TITLE SHEET
E1 COLISEUM SEATING LIGHTING PLAN - NORTHEAST HALF
E2 COLISEUM SEATING LIGHTING PLAN - SOUTHWEST HALF
E3 COLISEUM FLOOR LIGHTING PLAN
E4 COLISEUM DIMMING SYSTEM REPLACEMENT

NO.	REVISIONS	BY	DATE	VERIFY SCALES	DRAWN BY:	DESIGNED BY
RD	RECORD DRAWINGS	PEI	5/11	BAR IS ONE INCH ON ORIGINAL DRAWING.	PRELIM JR	FINAL BF
				IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	DATE JUNE 6, 2011	SCALE
REVISED TO CONFORM TO CONSTRUCTION RECORDS						

Powrtek Engineering, Inc.
20900 SWENSON DR., SUITE 570
WAUKESHA, WI 53186
VOICE: 262-827-9575
FAX: 262-827-9615

**ELECTRICAL UPGRADES
VETERANS MEMORIAL COLISEUM
MADISON, WISCONSIN**

TITLE SHEET

PROJECT NO.	311021
SHEET NO.	T1
FILE NO.	



LIGHT OVER SEATS (OUTER RING)



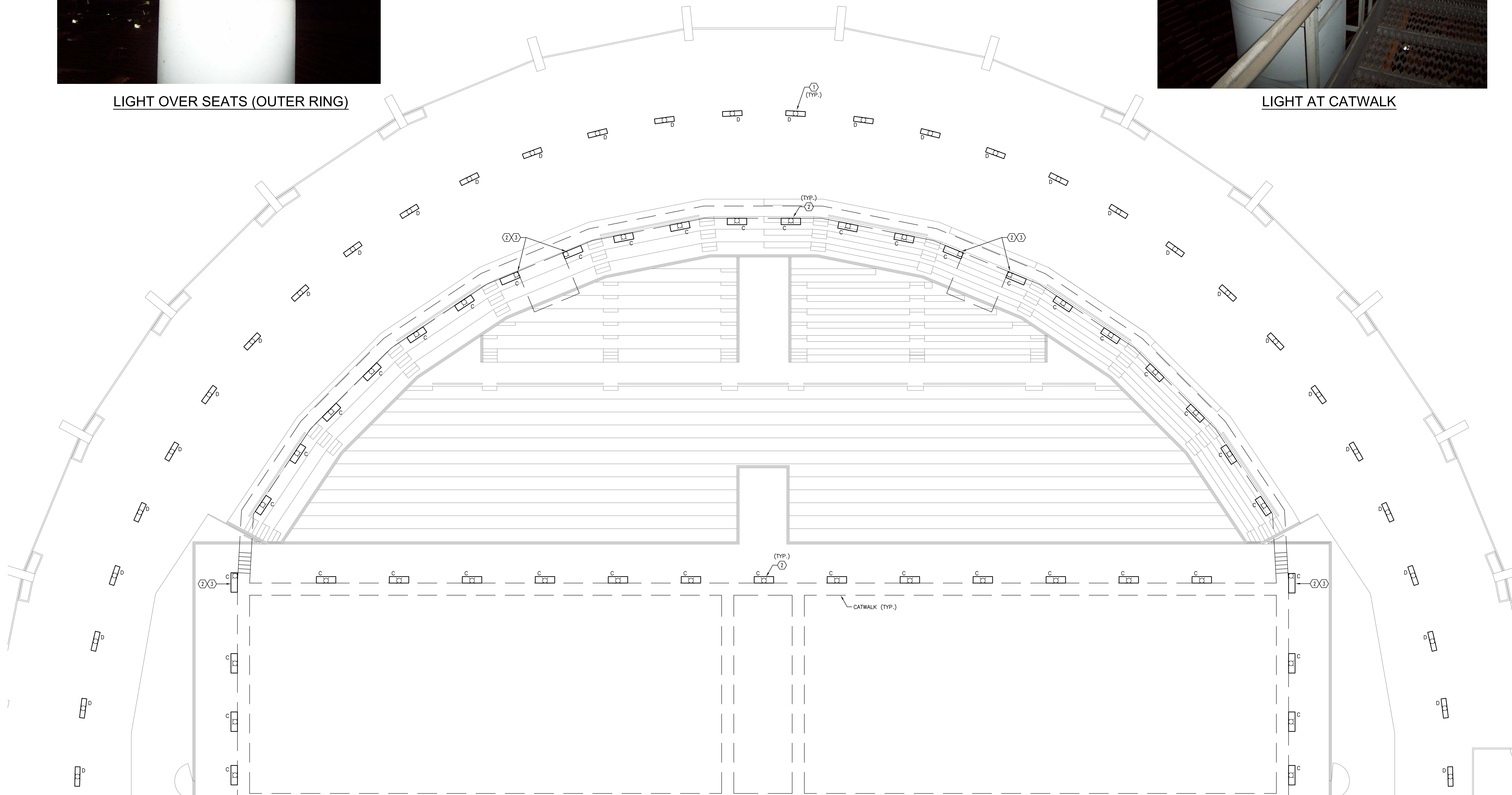
LIGHT AT CATWALK

KEYED NOTES:

- ① REMOVE EXISTING PENDANT LIGHT OVER SEATING (OUTER RING) AND INSTALL PROPOSED LIGHT FIXTURE.
- ② REMOVE EXISTING CATWALK LIGHT FIXTURE AND INSTALL PROPOSED LIGHT FIXTURE. PROVIDE MOUNTING SUPPORT ON SIDE OF CATWALK TO SUSPEND PROPOSED LIGHT FIXTURE FROM AERIAL SO FIXTURE IS LEVEL WITH BOTTOM OF CATWALK AND CAN BE FLIPPED/ROTATED TO ALLOW RE-LAMPING FROM CATWALK. DESIGN OF SUPPORT TO BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL.
- ③ COORDINATE LOCATION OF PROPOSED FIXTURE WITH CONFLICT CREATED BY PLATFORMS AND/OR STAIRS AS PART OF CATWALK.

GENERAL NOTE:

- 1. REFER TO PICTURES ON SHEET E4 & E5.



MATCHLINE 'A'

COLISEUM SEATING LIGHTING PLAN - NORTHEAST HALF

1/8" = 1'-0"



NO.	REVISIONS	BY	DATE	VERIFY SCALES	DRAWN BY:	DESIGNED BY
RD	RECORD DRAWINGS	PEI	5/11	BAR IS ONE INCH ON ORIGINAL DRAWING.	PRELIM JR	I. PFEFFERKORN
				IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	FINAL BF	CHECKED BY G. SADOWSKI
				DATE	SCALE	
				JUNE 6, 2011	1/8" = 1'-0"	
REVISIONS TO CONFORM TO CONSTRUCTION RECORDS DATE BY						
ALL RIGHTS RESERVED						

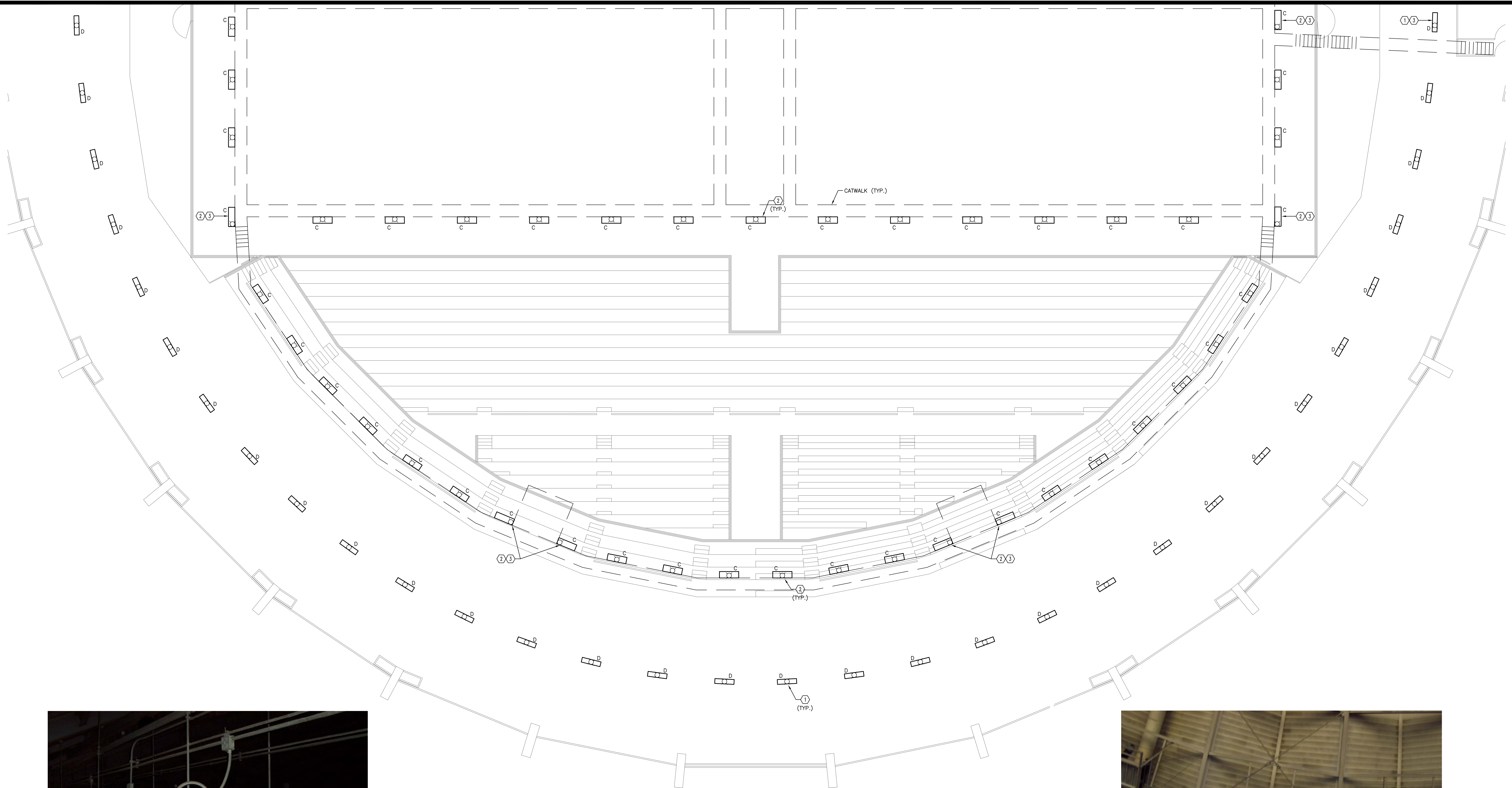
Powrtek Engineering, Inc.
 20900 SWENSON DR., SUITE 570
 WAUKESHA, WI 53186
 VOICE: 262-827-9575
 FAX: 262-827-9615

ELECTRICAL UPGRADES
VETERANS MEMORIAL COLISEUM
MADISON, WISCONSIN

COLISEUM SEATING LIGHTING PLAN -
NORTHEAST HALF

PROJECT NO.	311021
SHEET NO.	E1
FILE NO.	

MATCHLINE 'A'



LIGHTS AT CATWALK



LIGHTS AT CATWALK

COLISEUM SEATING LIGHTING PLAN - SOUTHWEST HALF

1/8" = 1'-0"



KEYED NOTES:

- ① REMOVE EXISTING PENDANT LIGHT OVER SEATING (OUTER RING) AND INSTALL PROPOSED LIGHT FIXTURE.
- ② REMOVE EXISTING CATWALK LIGHT FIXTURE AND INSTALL PROPOSED LIGHT FIXTURE. PROVIDE MOUNTING SUPPORT ON SIDE OF CATWALK TO SUSPEND PROPOSED LIGHT FIXTURE FROM AERIAL SO FIXTURE IS LEVEL WITH BOTTOM OF CATWALK AND CAN BE FLIPPED/ROTATED TO ALLOW RE-LAMPING FROM CATWALK. DESIGN OF SUPPORT TO BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL.
- ③ COORDINATE LOCATION OF PROPOSED FIXTURE WITH CONFLICT CREATED BY PLATFORMS AND/OR STAIRS AS PART OF CATWALK.

GENERAL NOTE:

1. REFER TO PICTURES ON SHEET E4 & E5.

NO.	REVISIONS	BY	DATE	VERIFY SCALES	DRAWN BY:	DESIGNED BY
RD	RECORD DRAWINGS	PEI	5/11	BAR IS ONE INCH ON ORIGINAL DRAWING.	PRELIM JR	I. PFEFFERKORN
				IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.	FINAL BF	CHECKED BY G. SADOWSKI
				DATE	SCALE	
				JUNE 6, 2011	1/8" = 1'-0"	
REVISIONS TO CONFORM TO CONSTRUCTION RECORDS DATE BY						

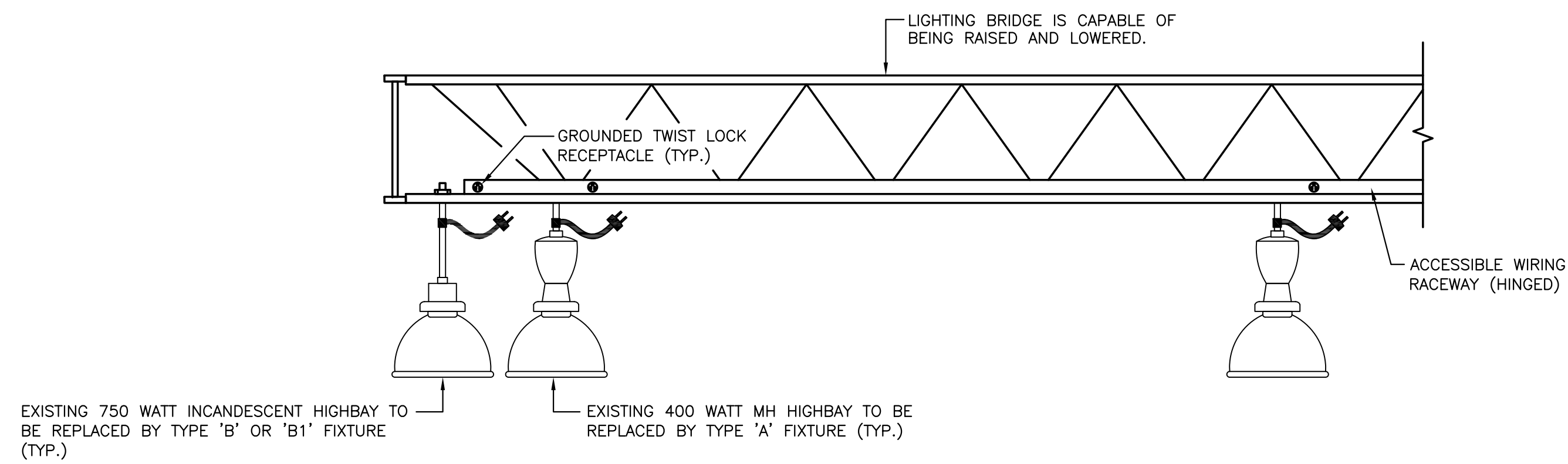
Powrtek Engineering, Inc.
 20900 SWENSON DR., SUITE 570
 WAUKESHA, WI 53186
 VOICE: 262-827-9575
 FAX: 262-827-9615

**ELECTRICAL UPGRADES
 VETERANS MEMORIAL COLISEUM
 MADISON, WISCONSIN**

**COLISEUM SEATING LIGHTING PLAN -
 SOUTHWEST HALF**

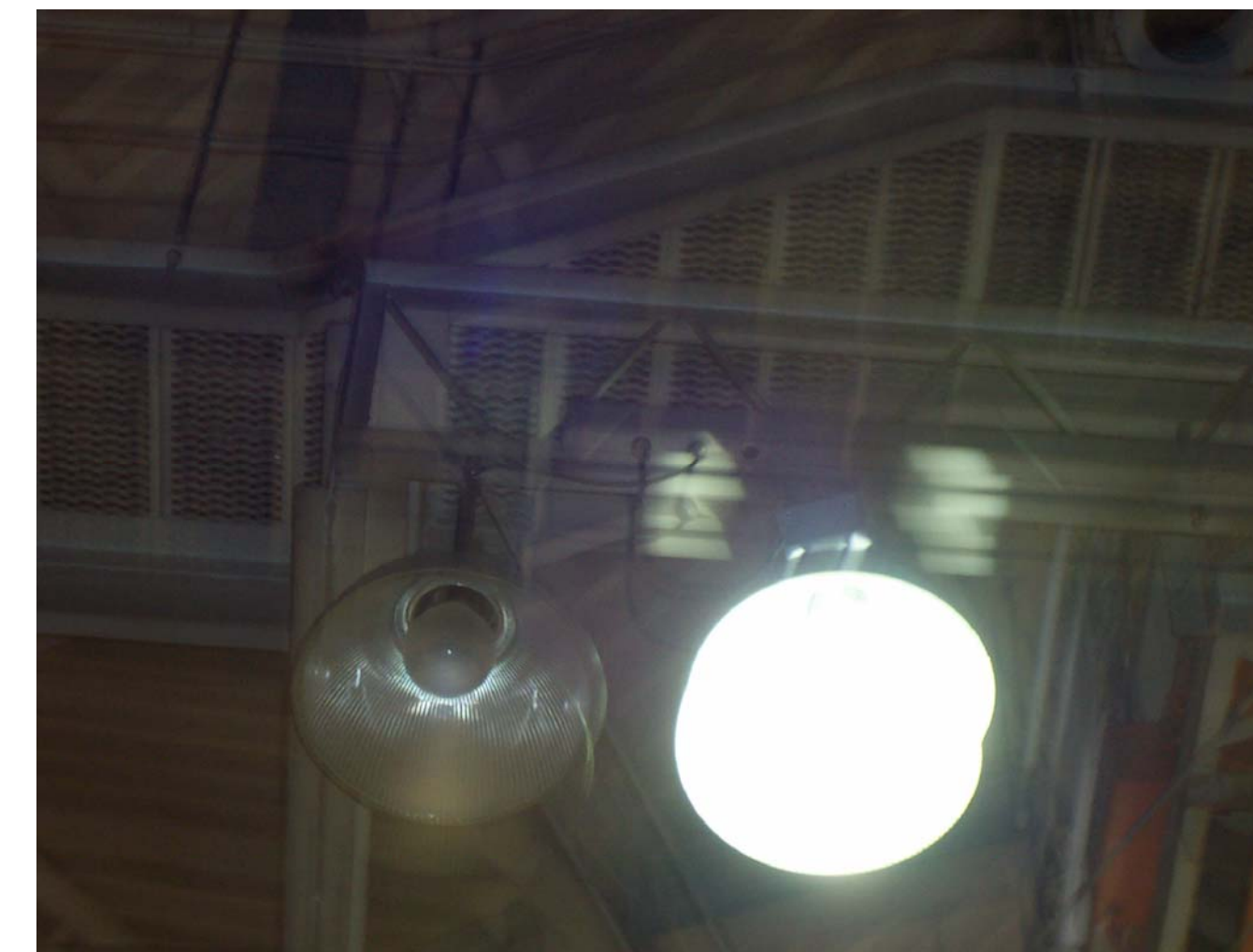
PROJECT NO.
311021
 SHEET NO.
E2
 FILE NO.

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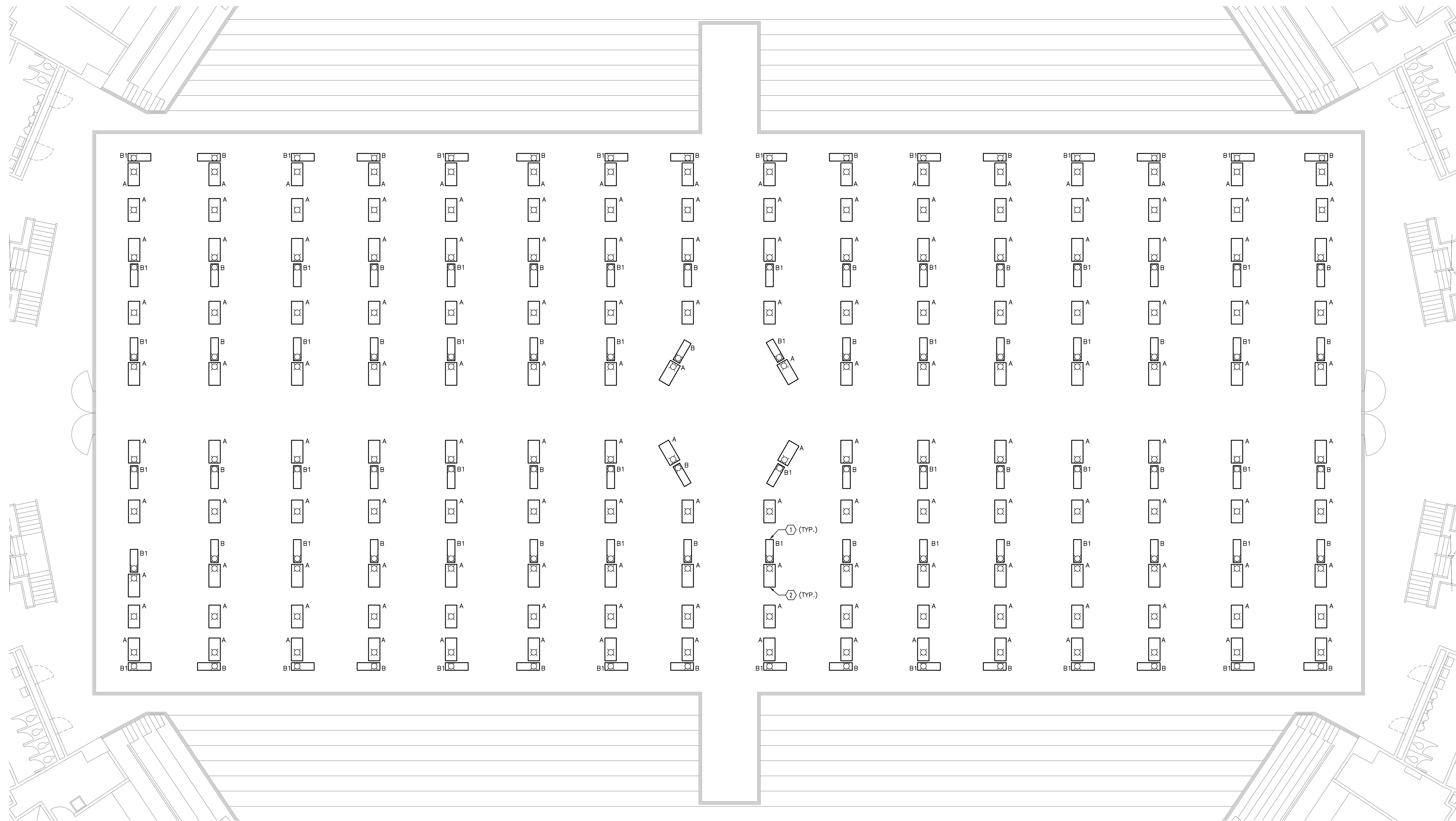


LIGHTING BRIDGE WITH TYPICAL EXISTING EQUIPMENT

N.T.S.



LIGHTS ON RACK OVER FLOOR



KEYED NOTES:

- ① REMOVE EXISTING INCANDESCENT HIGH BAY AND REPLACE WITH PROPOSED LIGHT FIXTURE.
- ② REMOVE EXISTING METAL HALIDE HIGH BAY AND REPLACE WITH PROPOSED LIGHT FIXTURE.

GENERAL NOTES:

- 1. INSTALL PROPOSED LIGHTS AT SAME ELEVATIONS (BOTTOM OF FIXTURE) AS EXISTING.

COLISEUM FLOOR LIGHTING PLAN

1/8" = 1'-0"



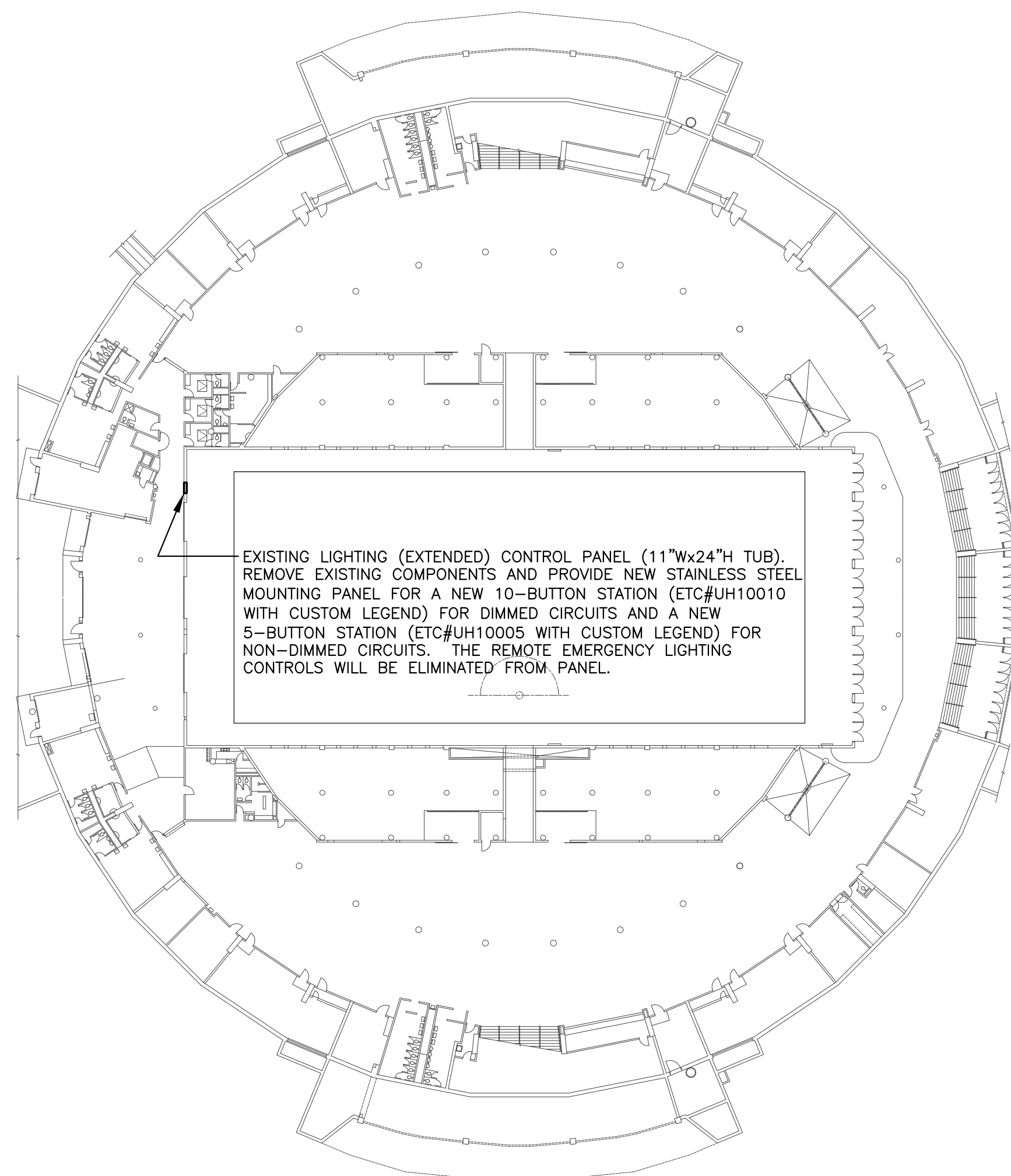
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RD	RECORD DRAWINGS	PE1	5/11	BAR IS ONE INCH ON ORIGINAL DRAWING.	PRELIM JR	I. PFEFFERKORN
					FINAL BF	CHECKED BY G. SADOWSKI
					DATE	SCALE
					JUNE 6, 2011	1/8" = 1'-0"
					REVISOR	DATE
					BY	BY

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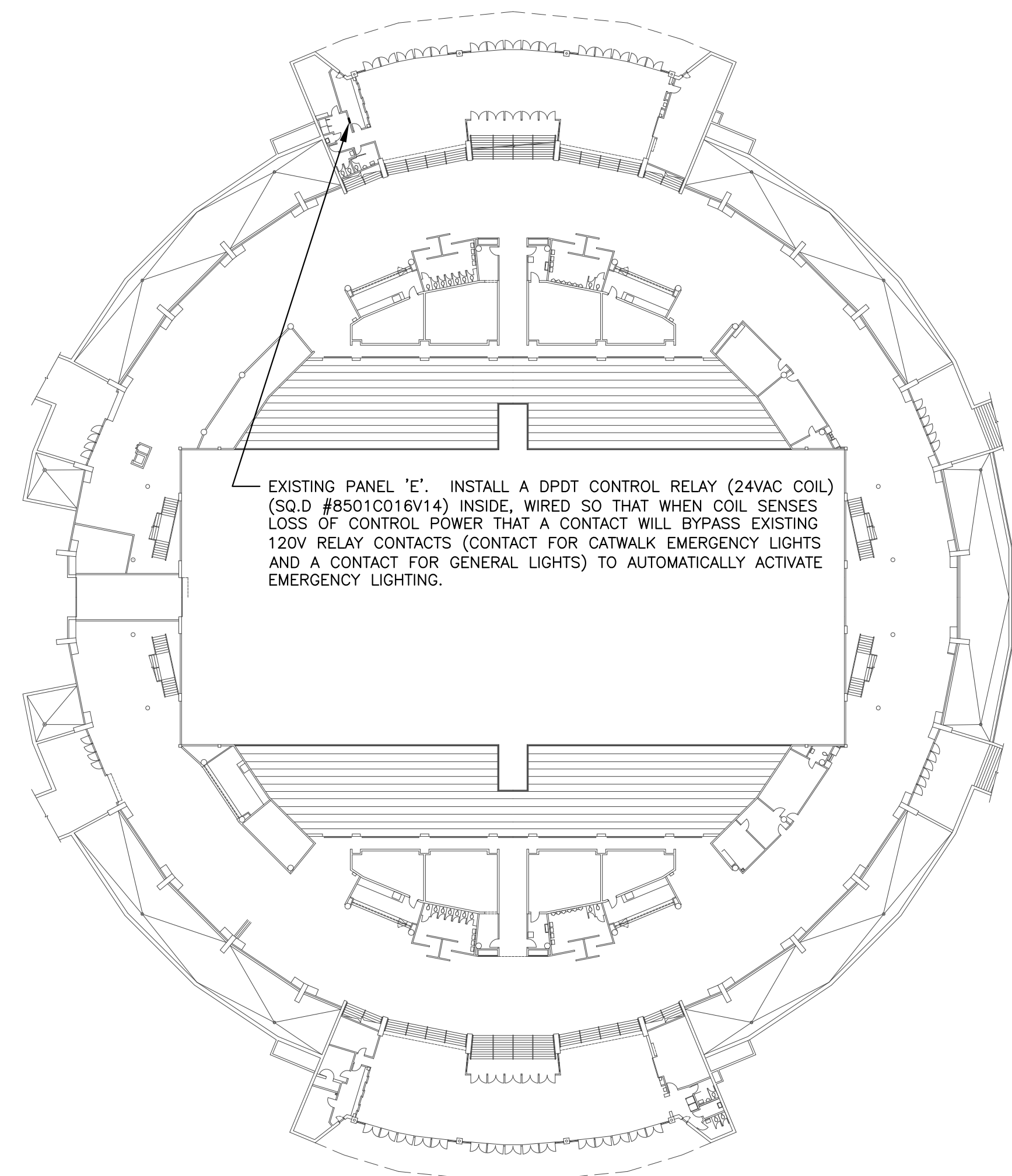
**ELECTRICAL UPGRADES
 VETERANS MEMORIAL COLISEUM
 MADISON, WISCONSIN**

COLISEUM FLOOR LIGHTING PLAN

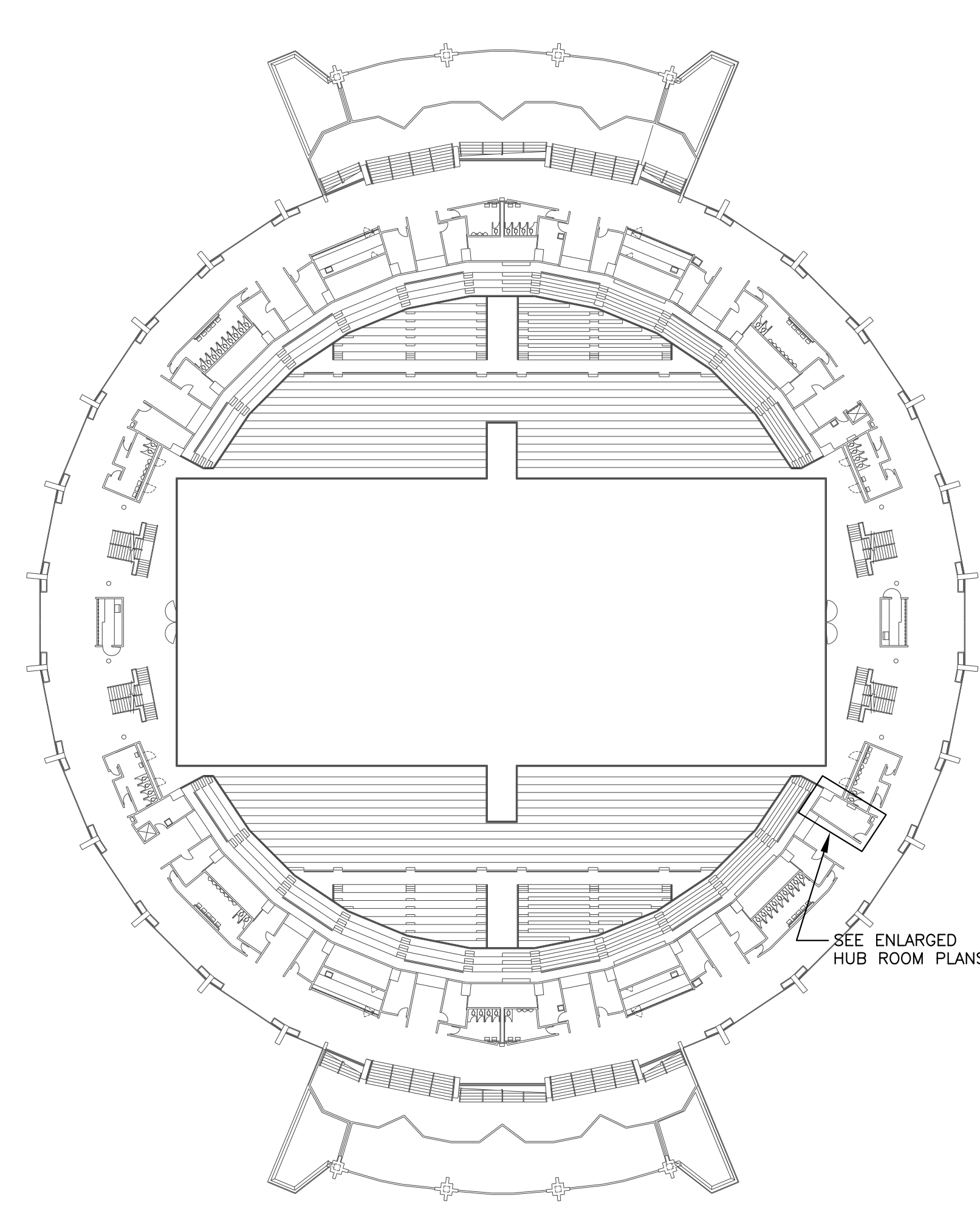
PROJECT NO.
311021
 SHEET NO.
E3
 FILE NO.



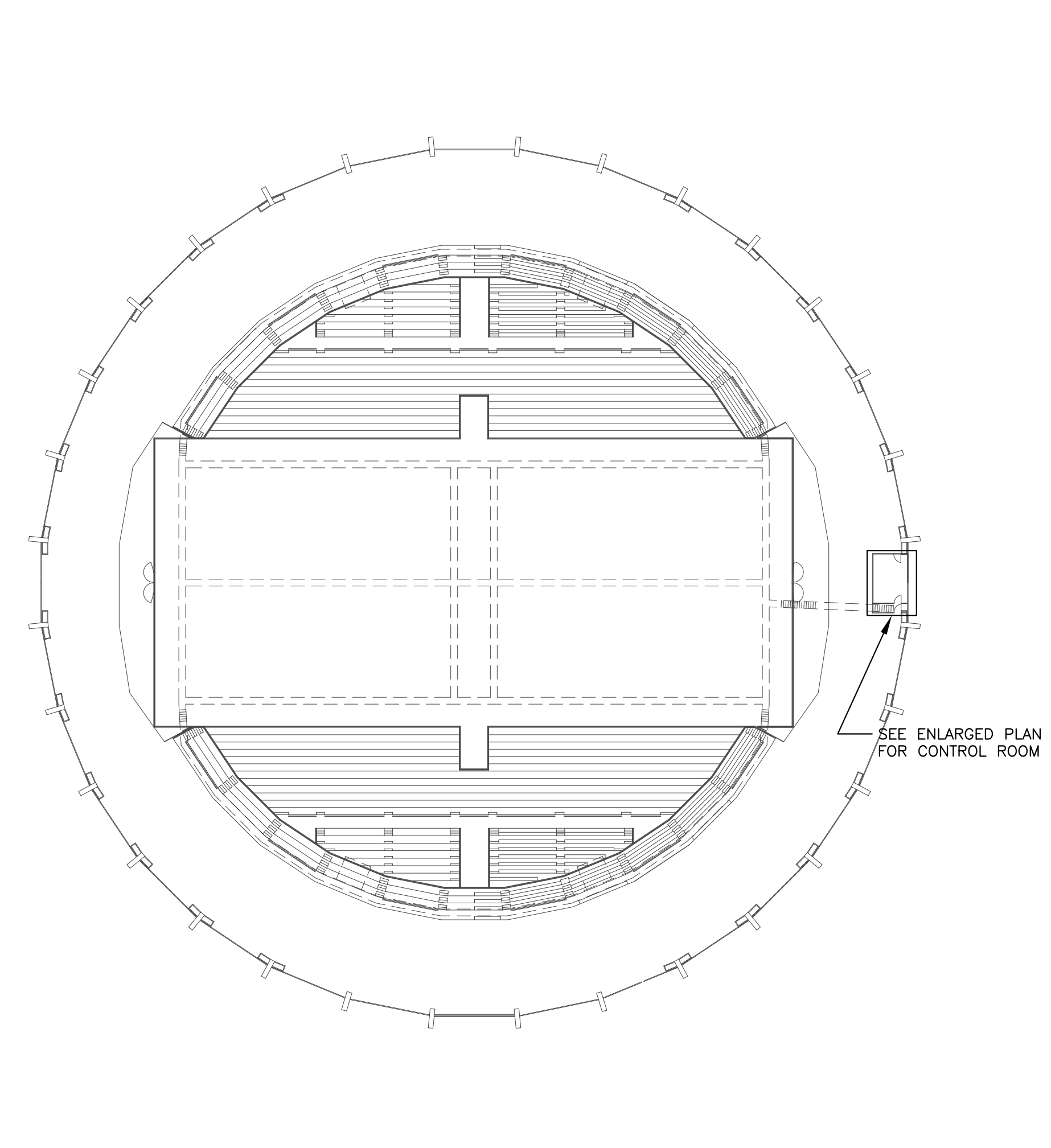
ARENAL FLOOR PLAN
1" = 40'-0"



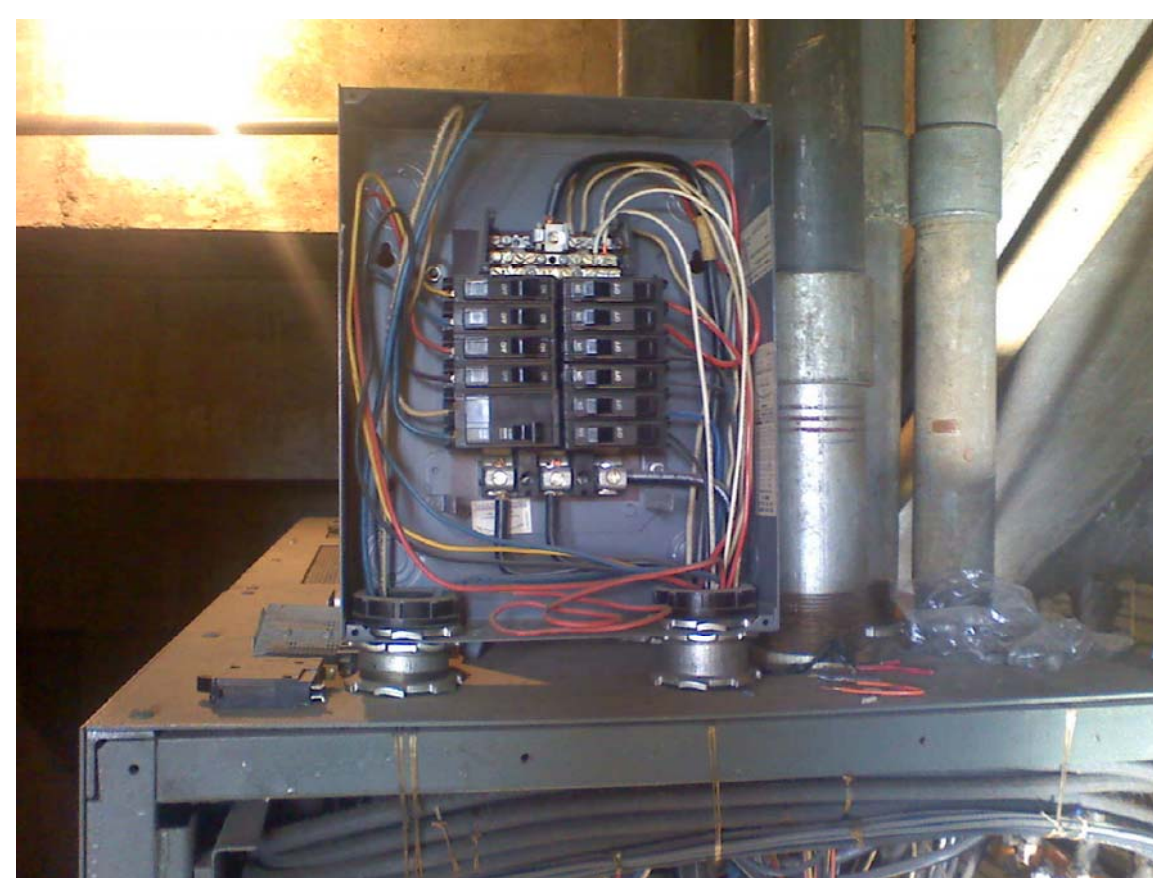
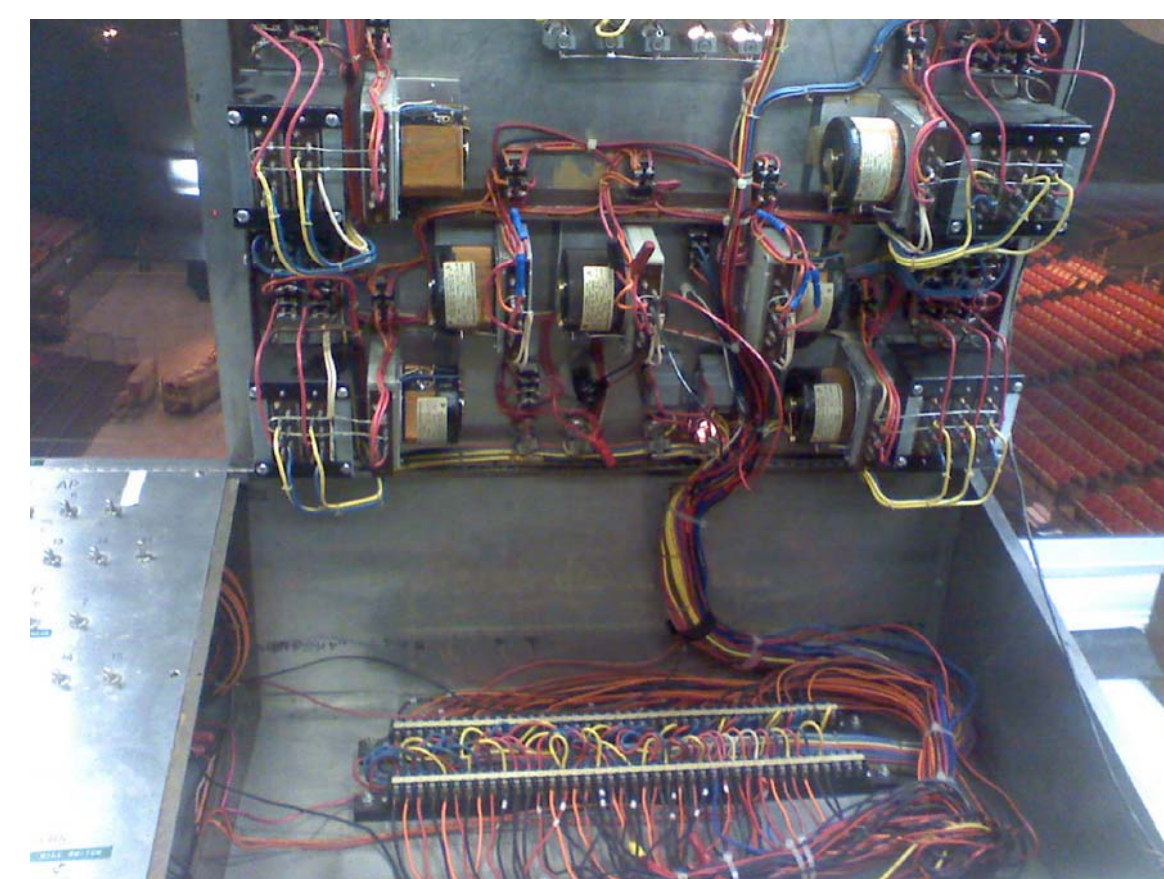
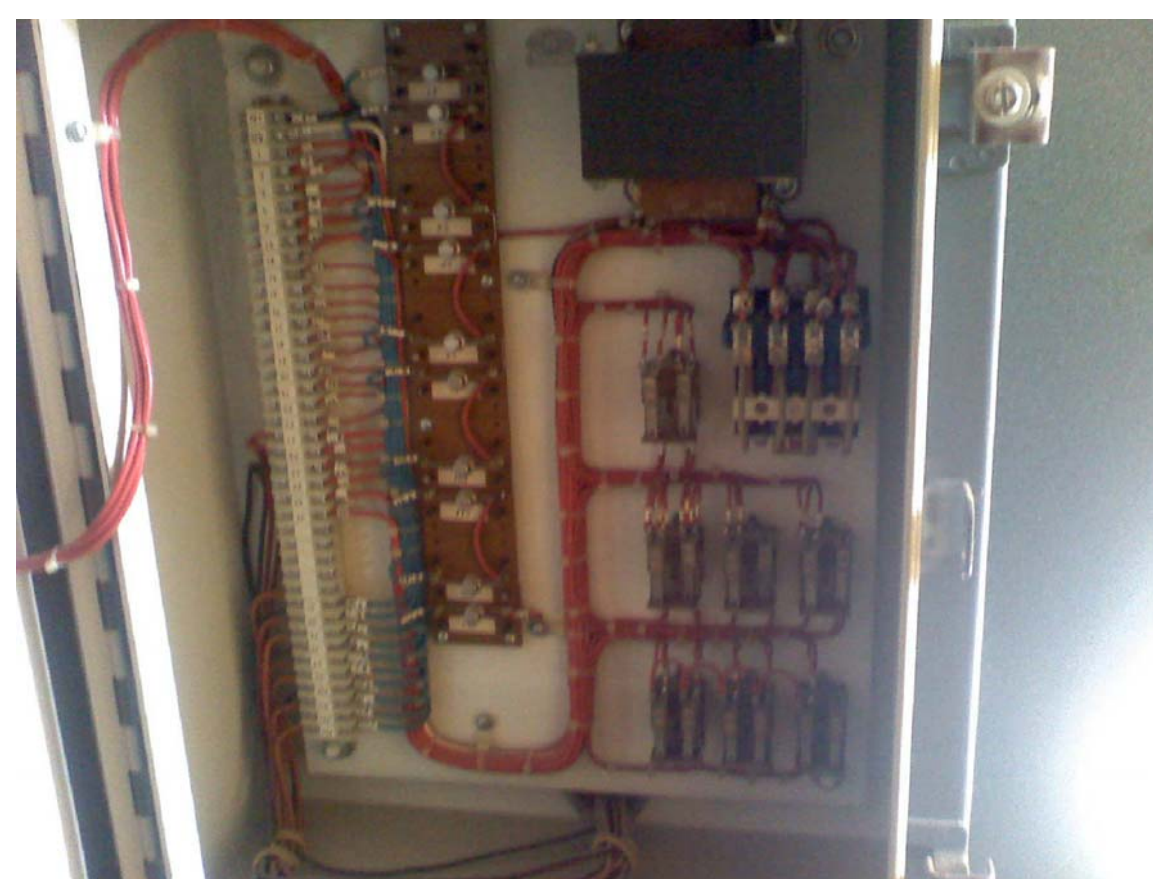
MAIN FLOOR PLAN
1" = 40'-0"



2ND CONCOURSE PLAN
1" = 40'-0"

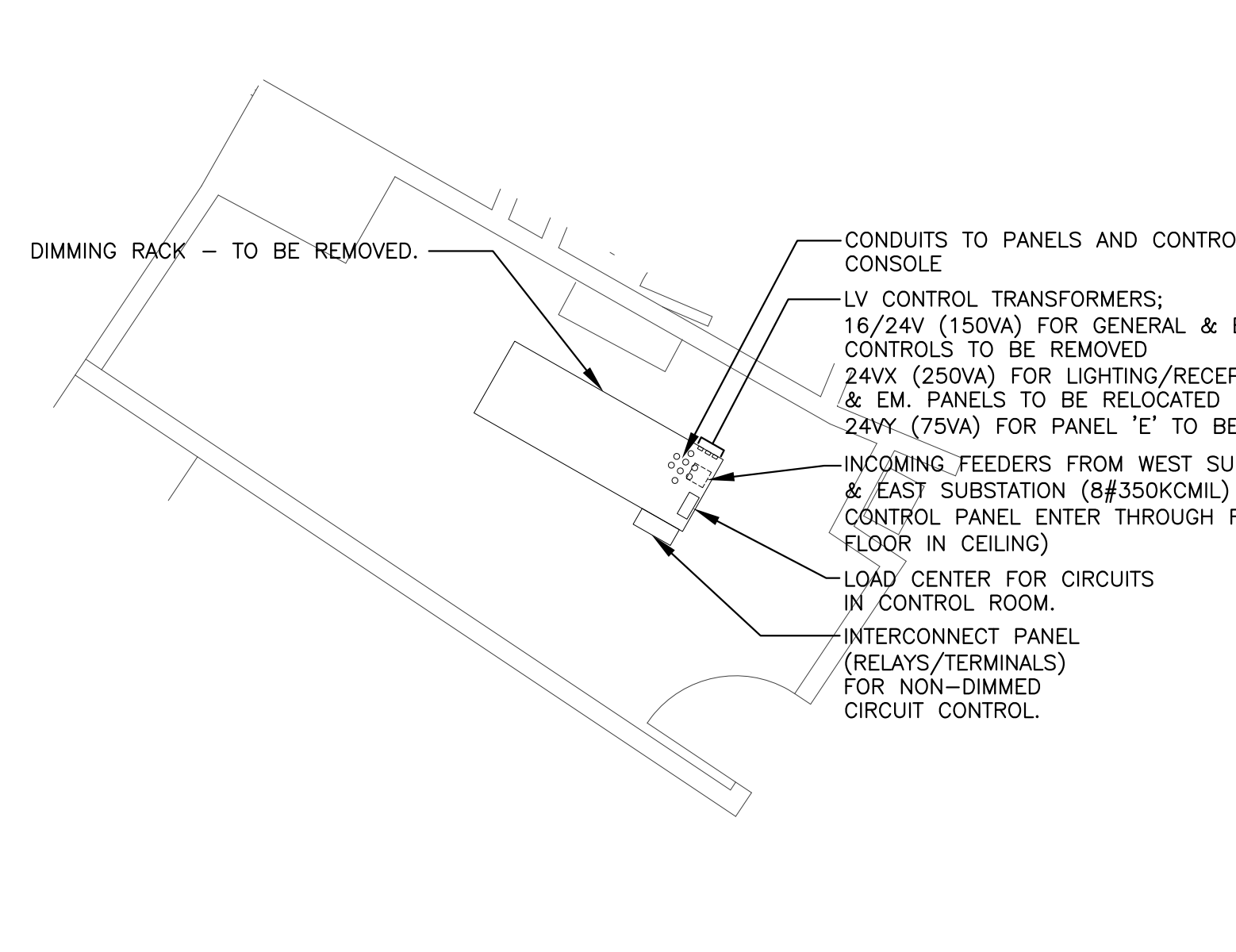


UPPER LEVEL PLAN
1" = 40'-0"

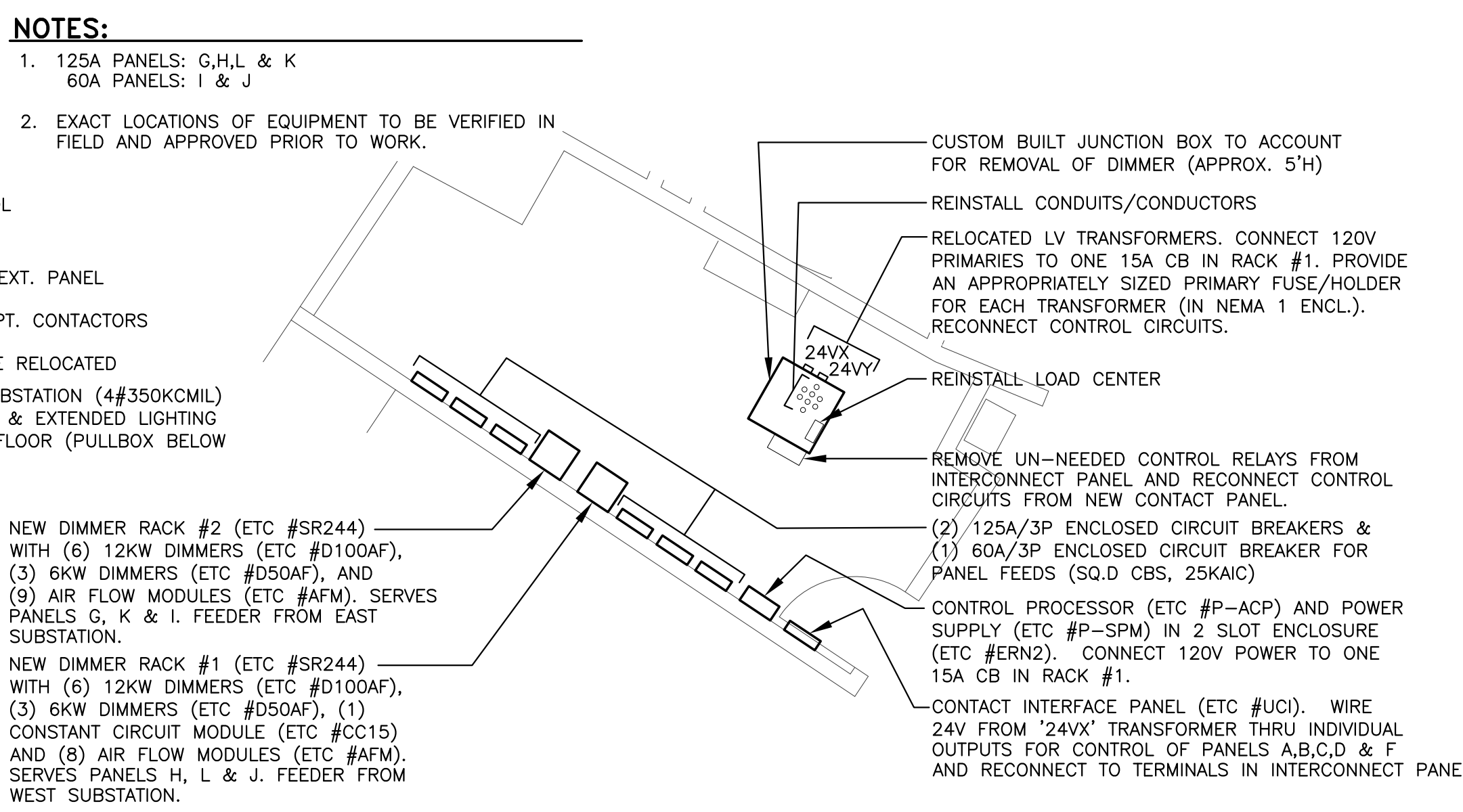
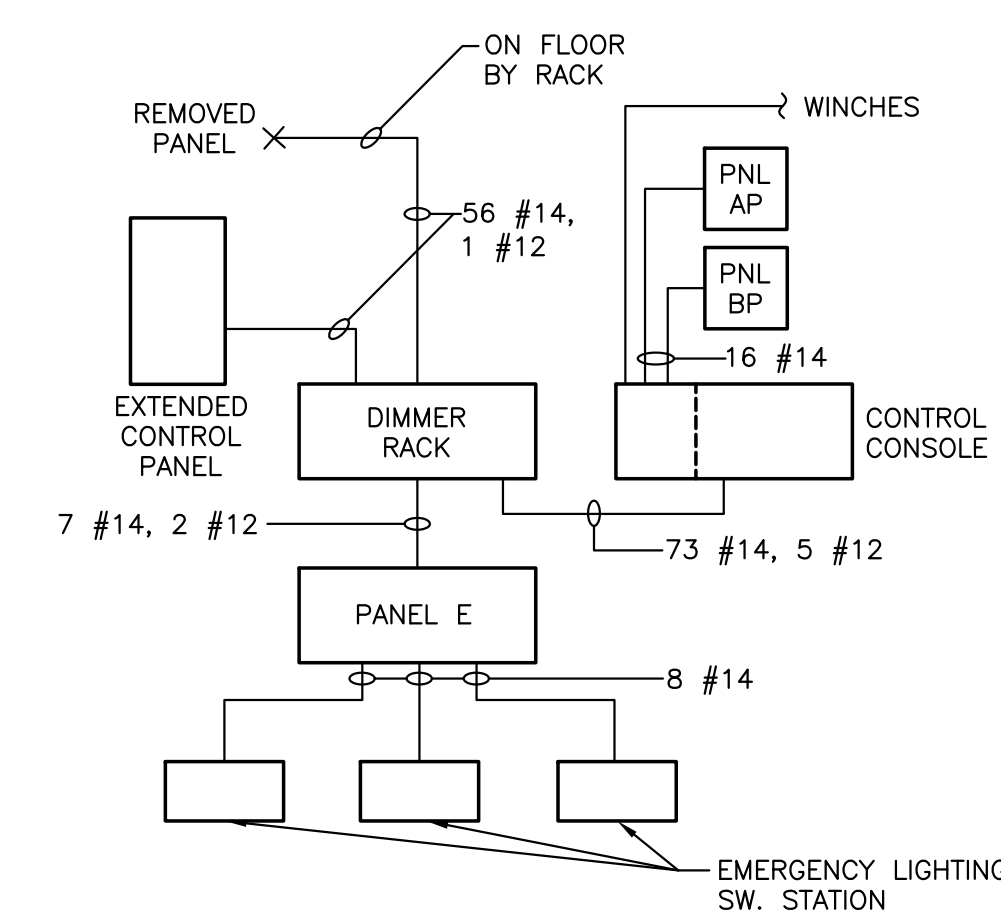


DIMMING RACK

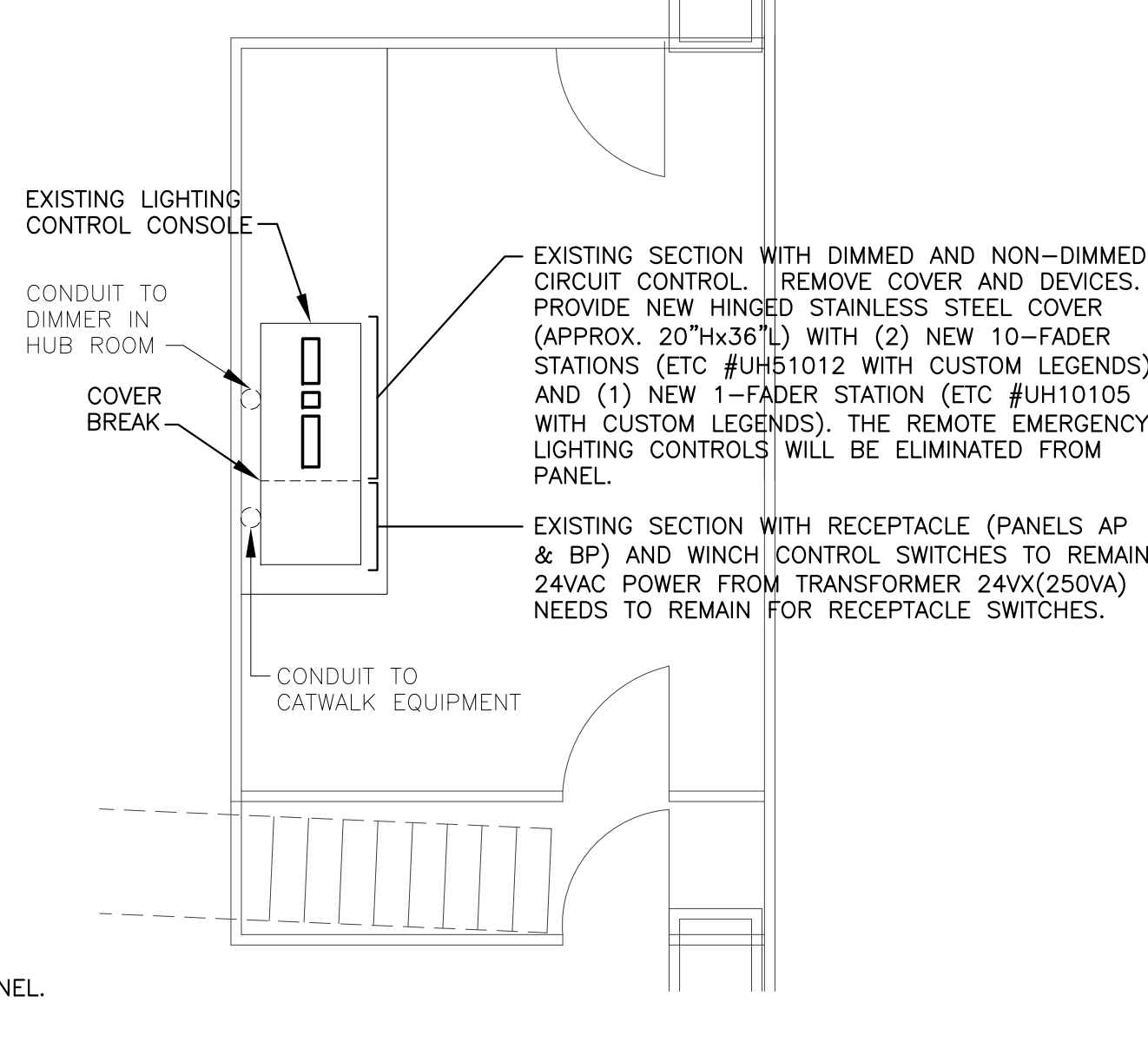
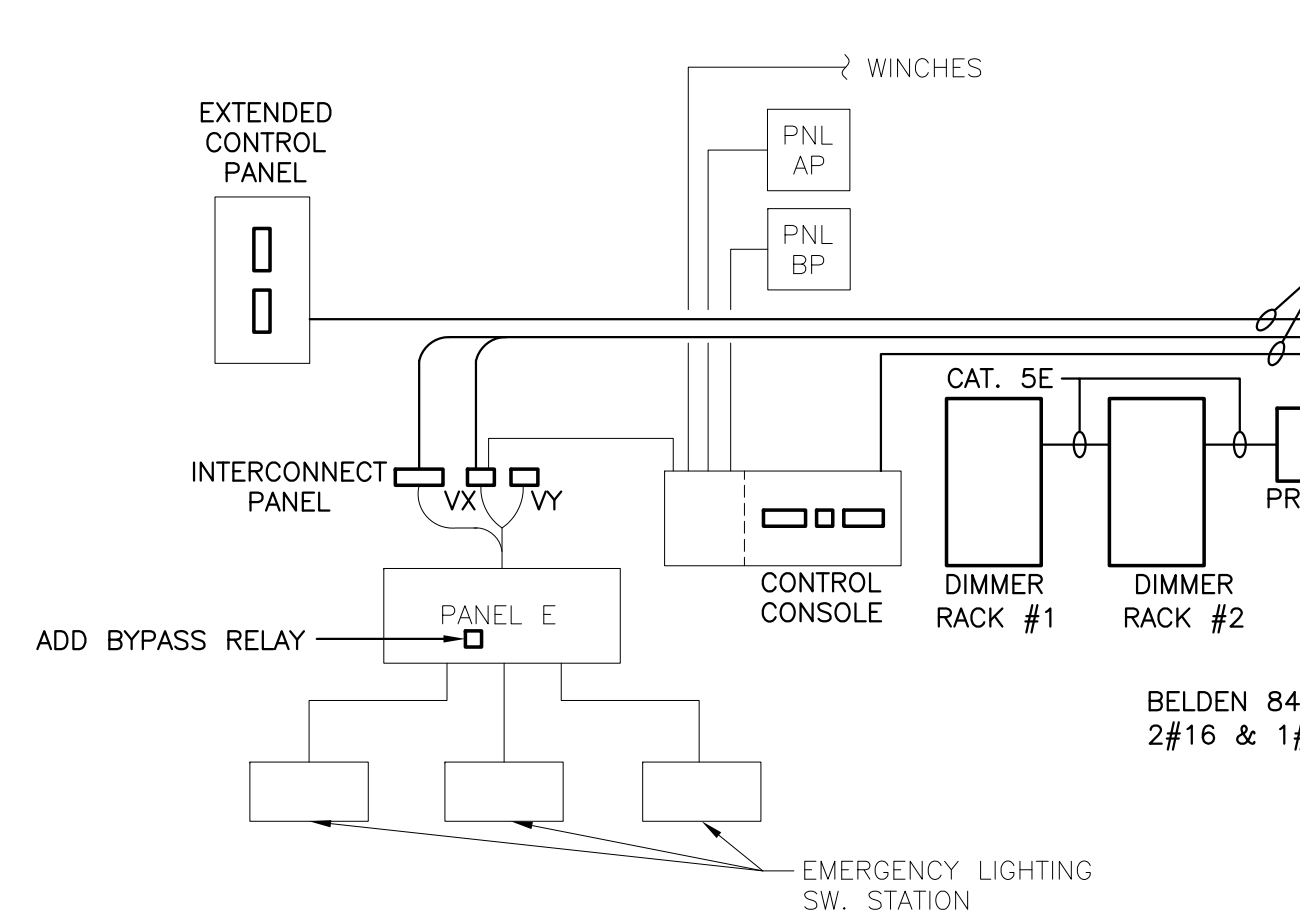
CONTROL CONSOLE



ENLARGED HUB ROOM EXISTING PLAN
1/4" = 1'-0"



ENLARGED HUB ROOM PROPOSED PLAN
1/4" = 1'-0"



ENLARGED CONTROL ROOM PLAN
1/4" = 1'-0"

GENERAL NOTES:

1. THE EXISTING DIMMING SYSTEM CONTROL DRAWINGS WILL BE MADE AVAILABLE TO THE CONTRACTOR AWARDED WORK.
2. THE INFORMATION SHOWN IS BASED ON SITE SURVEY AND DRAWING INFORMATION RECEIVED AND IS NOT GUARANTEED 100% ACCURATE. ROUTING OF CABLES IS ASSUMED AND MAY DIFFER IN THE FIELD. INCLUDE ALL NECESSARY WIRING AND EQUIPMENT.
3. ALL CONDUCTORS AND CABLES TO BE INSTALLED IN CONDUIT. EXISTING CONDUITS MAY BE REUSED. MAINTAIN SEPARATION OF COMMUNICATION CABLES TO OTHER CONDUCTORS.
4. PROVIDE ADEQUATE GROUNDING/BONDING CONDUCTOR FROM JUNCTION BOX BELOW DIMMER RACK (BELOW FLOOR) TO NEW CUSTOM JUNCTION BOX, NEW CONDUITS AND EXISTING CONDUITS TO ESTABLISH GROUNDING PATH.
5. THE LAYOUTS OF PROPOSED CONTROL STATIONS ARE INTENDED TO MIMIC EXISTING CONDITIONS. THE LAYOUTS AND LEGENDS WILL REQUIRE OWNER REVIEW AND APPROVAL.
6. LABEL ALL NEW AND EXISTING CABLES/CONDUCTORS.
7. REMOVE ALL ABANDONED CONDUCTORS.

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					FINAL	BF	G. SADOWSKI
					DATE	JUNE 6, 2011	SCALE
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ALL RIGHTS RESERVED							



**ELECTRICAL UPGRADES
VETERANS MEMORIAL COLISEUM
MADISON, WISCONSIN**

**COLISEUM DIMMING SYSTEM
REPLACEMENT**

PROJECT NO.
311021
SHEET NO.
E4
FILE NO.