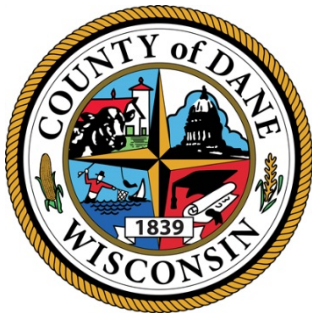


RFB NO. 317035



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. 317035 COLISEUM PERFORMANCE AREA LIGHTING & RIGGING UPGRADES ALLIANT ENERGY CENTER 1919 ALLIANT ENERGY CENTER WAY MADISON, WISCONSIN

Due Date / Time: **TUESDAY, FEBRUARY 6, 2018 / 2:00 P.M.**

Location: **PUBLIC WORKS OFFICE, 1919 ALLIANT ENERGY CENTER WAY, MADISON, WI 53713**

Performance / Payment Bond: **100% OF CONTRACT AMOUNT**

Bid Deposit: **5% OF BID AMOUNT**

FOR INFORMATION ON THIS REQUEST FOR BIDS, PLEASE CONTACT:

J. ERIC URTES, AIA - PROJECT MANAGER
TELEPHONE NO.: 608/266-4798
FAX NO.: 608/267-1533
urtes.eric@countyofdane.com

TABLE OF CONTENTS FOR RFB NO. 317035

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

- Project Manual Cover Page
- Table of Contents
- Advertisement for Bids (Legal Notice)
- Best Value Contracting Application
- Instructions to Bidders
- Bid Form
- Fair Labor Practices Certification
- Sample Public Works Contract
- Sample Bid Bond
- Sample Performance Bond
- Sample Payment Bond
- Equal Benefits Compliance Payment Certification Form
- General Conditions of Contract
- Supplementary Conditions

DIVISION 01 - GENERAL REQUIREMENTS

- 01 00 00 – Basic Requirements
- 01 14 13 – Access to Site
- 01 31 19 – Project Meetings
- 01 33 00 – Submittal Procedures
- 01 74 19 – Construction Waste Management, Disposal & Recycling
- 01 77 00 – Closeout Procedures
- 01 78 00 – Closeout Submittals

DIVISION 02 - EXISTING CONDITIONS

- 02 41 19 – Selective Demolition

DIVISION 05 - METALS

- 05 12 00 – Structural Steel Framing

DIVISION 11 - EQUIPMENT

- 11 81 29.13 – Rigging Fall Protection

DIVISION 26 - ELECTRICAL

- 26 01 01 – Sports and Event Lighting System Scope Design Narrative
- 26 09 05 – Advanced Lighting Control
- 26 50 03 – Arena Lighting Fixtures

DRAWINGS

- E100 – Electrical (New Work)
- E101 – Electrical (Demolition)
- Exhibit 1 – Musco Lighting Illustration Summary (8 sheets total)
- Exhibit 2 – Musco Preliminary Truss Concept (1 sheet total)
- S1 – Cover Sheet
- S2 – Rigging Access Beam Plan and Details
- S3 – Rigging Access Beam Details

- S4 – Rigging Access Beam Isometric View
- S5 – Lighting Truss Demo Plan
- S6 – Lighting Truss Demo Isometric Views
- S7 – Existing Catwalk Plan
- S8 – New Electrical Platform Details
- S9 – General Notes & Lighting Truss Elevation

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, FEBURARY 6TH, 2018

REQUEST FOR BIDS NO. 317035

COLISEUM PERFORMANCE AREA LIGHTING & RIGGING UPGRADES

ALLIANT ENERGY CENTER

1919 ALLIANT ENERGY CENTER WAY

MADISON, WISCONSIN

Dane County is inviting Bids for construction services for lighting and rigging demolition and upgrades in the Alliant Energy Center Coliseum. Only firms with capabilities, experience & expertise with similar projects should obtain this Request for Bids document & submit Bids.

Request for Bids document may be obtained after **2:00 p.m. on Thursday, January 4th, 2018** by downloading it from bids-pwht.countyofdane.com. Please contact J. Eric Urtes, AIA - Project Manager, at 608/266-4798, urtes.eric@countyofdane.com, or our office at 608/266-4018, for any questions or additional information.

All Bidders must be a registered vendor with Dane County & pay an annual registration fee & must be pre-qualified as a Best Value Contractor before award of Contract. Complete Vendor Registration Form at danepurchasing.com/Account/Login? or obtain one by calling 608/266-4131. Complete Pre-qualification Application for Contractors at countyofdane.com/pwht/BVC_Application.aspx or obtain one by calling 608/266-4029.

A pre-bid site tour will be held Thursday, January 11th, 2018 at 10:00 a.m. at the Alliant Energy Center Coliseum, starting at the west side lobby ticket will call window on the main floor. Bidders are strongly encouraged to attend this tour.

PUBLISH: JANUARY 2ND & 9TH, 2018 - WISCONSIN STATE JOURNAL
JANUARY 2ND & 9TH, 2018 - THE DAILY REPORTER



DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

County Executive
Joseph T. Parisi

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 pre-qualification 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 fifteen (15) days of any changes to its business or operations that are relevant to the pre-qualification application. Failure to do so could result in suspension, revocation of the contractor's pre-qualification, debarment from County contracts for up to three (3) 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 who employ less than five (5) apprenticeable trade workers are not required to pre-qualify.
- 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, pre-qualified 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?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
16	Is your firm exempt from being pre-qualified 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 pre-qualified with the County or become so ten days prior to commencing work?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
18	Contractor has been in business less than one year?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
19	Is your firm a first time Contractor requesting a one time exemption, but, intend to comply on all future contracts and are taking steps typical of a "good faith" effort?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
20	Not applicable. My firm does not intend to work on Best Value Contracts. Note: Best Value Contracting is required to bid on most Public Works Contracts (if unclear, please call Jan Neitzel Knox 608-266-4029).	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:

JAN NEITZEL KNOX
EMAIL: NEITZEL-KNOX@COUNTYOFDANE.COM
OFFICE: (608)266-4029, 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

INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

1. GENERAL.....	1
2. DRAWINGS AND SPECIFICATIONS	2
3. INTERPRETATION.....	2
4. QUALIFICATIONS OF BIDDER (CONTRACTOR AND SUBCONTRACTOR)	2
5. BID GUARANTEE.....	3
6. WITHDRAWAL OF BIDS.....	3
7. CONTRACT FORM	4
8. CONTRACT INTERESTS BY COUNTY PUBLIC OFFICIALS	4
9. EMERGING SMALL BUSINESS PROVISIONS	4
10. METHOD OF AWARD - RESERVATIONS.....	6
11. SECURITY FOR PERFORMANCE AND PAYMENTS	6
12. TAXES.....	7
13. SUBMISSION OF BIDS	7
14. SUBCONTRACTOR LISTING.....	8
15. ALTERNATE BIDS	8
16. INFORMATIONAL BIDS.....	8
17. UNIT PRICES.....	8
18. COMMENCEMENT AND COMPLETION	8
19. WORK BY OWNER	8
20. SPECIAL HAZARDS COVERAGE.....	8
FORM A.....	9
FORM B.....	10
FORM C.....	11
FORM D	12

1. GENERAL

- A. Before submitting Bid, bidder shall thoroughly examine all Construction Documents. Successful Bidder shall be required to provide all the Work that is shown on Drawings, set forth in Specifications, or reasonably implied as necessary to complete Contract for this project.
- B. Bidder shall visit site to become acquainted with adjacent areas, means of approach to site, conditions of actual site and facilities for delivering, storing, placing, and handling of materials and equipment.
- C. Pre-bid meeting is scheduled on January 11th, 2018 at 10:00 a.m. at the Alliant Energy Center Coliseum, 1919 Alliant Energy Center Way, at the west side ticket will call on the main level. Attendance by all bidders is optional, however bidders and subcontractors are strongly encouraged to attend.
- D. Failure to visit site or failure to examine any and all Construction Documents will in no way relieve successful Bidder from necessity of furnishing any necessary materials or equipment, or performing any work, that may be required to complete the Work in accordance with Drawings and Specifications. Neglect of above requirements will not be accepted as reason for delay in the Work or additional compensation.

2. DRAWINGS AND SPECIFICATIONS

- A. Drawings and Specifications that form part of this Contract, as stated in Article 1 of General Conditions of Contract, are enumerated in Document Index of these Construction Documents.
- B. Complete sets of Drawings and Specifications for all trades will be available 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.
- C. For deposit refund, return complete sets of Drawings and Specifications to same location they were picked up within ninety (90) calendar days after Bid Due Date. After that time, deposit will be forfeited.

3. INTERPRETATION

- A. No verbal explanation or instructions will be given in regard to meaning of Drawings or Specifications before Bid Due Date. Bidders shall bring inadequacies, omissions or conflicts to Owner or Architect / Engineer's attention at least ten (10) calendar days before Bid Due Date. 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 Consultant / 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 no more than three (3) 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) business days after Bid Due Date. 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) business 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 Due Date.
- 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 (3) lowest qualified, responsible bidders, will be returned to their makers within three (3) business days after Bid Due Date. 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 Due Date, 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 sixty (60) calendar days after Bid Due 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 Due Date.

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 \$15,000.00 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 twenty-five (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 ten (10) business days of Bid Due Date 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 ten (10) business days after Bid Due Date. Bidder who fails to submit Emerging Small Business Report shall be deemed not responsive.
- D. **ESB Goal.** Goal of this project is ten percent (10%) ESB participation. 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 may solicit bids from this ESB listing:
pdf.countyofdane.com/commissions/2013-2015_Targeted_Business_Directory.pdf.
- G. **ESB Certification.** All contractors, subcontractors and suppliers seeking ESB certification must complete and submit Emerging Small Business Report 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) business days prior to Bid Due 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 Due Date.

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

- 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. 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 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. Wisconsin Statute 77.54 (9m) allows building materials that become part of local unit government facilities to be exempt from sales & use tax. Vendors & materials suppliers may not charge Bidders sales & use tax on these purchases. This does not include highways, streets or roads. Any other Sales, Consumer, Use & other similar taxes or fees required by law shall be included in Bid.
- 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 may 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 due time to place designated in Invitation to Bid, and identified with project name, bid number, location, category of work being bid upon, Bid Due Date, name and address of bidder.
- G. Bidder shall be responsible for sealed Bid being delivered to place designated for Bid Due Date 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 or emailed 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. Not Applicable.

16. INFORMATIONAL BIDS

- A. Not Applicable.

17. UNIT PRICES

- A. Not Applicable.

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. Not Applicable.

20. SPECIAL HAZARDS COVERAGE

- A. Not Applicable.

FORM A

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

In accordance with General Conditions of Contract, submit this Emerging Small Business Report within ten (10) days after Bid Due Date.

PROJECT NAME: _____

BID NO.: _____ BID DUE DATE: _____

BIDDER INFORMATION

COMPANY NAME: _____

ADDRESS: _____

TELEPHONE NO.: _____

CONTACT PERSON: _____

EMAIL ADDRESS: _____

FORM B

Page ___ of ___

DANE COUNTY

(Copy this Form as necessary to provide complete information)

EMERGING SMALL BUSINESS REPORT - INVOLVEMENT

COMPANY NAME: _____

PROJECT NAME: _____

BID NO.: _____ BID DUE DATE: _____

ESB NAME: _____

CONTACT PERSON: _____

ADDRESS: _____

PHONE NO & EMAIL.: _____

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

ESB NAME: _____

CONTACT PERSON: _____

ADDRESS: _____

PHONE NO & EMAIL.: _____

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

FORM C

Page ___ of ___

DANE COUNTY

(Copy this Form as necessary to provide complete information)

EMERGING SMALL BUSINESS REPORT - CONTACTS

COMPANY NAME: _____

PROJECT NAME: _____

BID NO.: _____ BID DUE DATE: _____

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

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

Name of Bidding Firm: _____

BID FORM

BID NO. 317035

**PROJECT: COLISEUM PERFORMANCE AREA RIGGING/LIGHTING UPGRADES
ALLIANT ENERGY CENTER**

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

**NOTE: WISCONSIN STATUTE 77.54 (9M) ALLOWS FOR NO SALES & USE TAX ON
THE PURCHASE OF MATERIALS FOR COUNTY PUBLIC WORKS PROJECTS.**

BASE BID - LUMP SUM:

The base bid includes construction services for lighting and rigging upgrades in the Alliant Energy Center as specified in Construction Documents. 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 Base Bid stipulated sum of:

_____ 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 Public Works must have this project completed by June 22, 2018. Assuming this Work can be started by April 24, 2018, 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 Bids Due Date to another bidder or competitor; that the above statement is accurate under penalty of perjury.

The undersigned further agrees to honor the Base Bid and the Alternate Bid(s) for sixty (60) calendar days from date of Award of Contract.

SIGNATURE: _____
(Bid is invalid without signature)

Print Name: _____ Date: _____

Title: _____

Address: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

Contact Person: _____

THIS PAGE IS FOR BIDDERS' REFERENCE AND NEED NOT BE SUBMITTED WITH BID FORM.

BID CHECK LIST:

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

- Bid Form Bid Bond Fair Labor Practices Certification
 Project Experience / Reference Summary (attach separate sheet with list of projects)

BIDDERS SHOULD BE AWARE OF THE FOLLOWING:

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 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.countyofdane.com/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 25.13. Contractor shall provide equal benefits as required by that Ordinance to all required employees during the term of the contract. Equal Benefits Compliance Payment Certification shall be submitted with final pay request. For more information:

www.danepurchasing.com/partner_benefit.aspx

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 bid, application or proposal for a contract or agreement 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 25.09 is as follows:

- (1) 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 Controller 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.

Include this completed Certification with your bid, application or proposal.

COUNTY OF DANE

PUBLIC WORKS CONSTRUCTION CONTRACT

Contract No. _____ Bid No. 317035

Authority: 2018 RES - _____

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 Assistant Public Works Director, 1919 Alliant Energy Center Way, Madison, WI 53713, desires to have CONTRACTOR provide Coliseum Performance Area Lighting & Rigging Upgrades ("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 _____ (hereinafter referred to as "the Architect / Engineer"), and as enumerated in the Project Manual Table of Contents, 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) business 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 25.13 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. 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.

9. 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.

10. 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) business 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 Assistant Public Works Director.

FOR COUNTY:

Joseph T. Parisi, County Executive Date

Scott McDonell, County Clerk Date

AIA[®] Document A310[™] – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

BOND AMOUNT:**PROJECT:**

(Name, location or address, and Project number, if any)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner 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. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, 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. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this _____ day of _____

_____	(Contractor as Principal)	(Seal)
(Witness)	_____	(Title)
_____	(Surety)	(Seal)
(Witness)	_____	(Title)

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 A312[™] – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status 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 Section 16

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature: _____

Name and Title: _____

(Any additional signatures appear on the last page of this Performance Bond.)

Signature: _____

Name and Title: _____

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and 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 when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. 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;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

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

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

§ 5.3 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 a 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 Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right 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, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven 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 Section 5.4, and the Owner refuses the payment 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.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, 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. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .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 Section 5; and
- .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.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 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, successors and assigns.

§ 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 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 a declaration of 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.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 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. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **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.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 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

SURETY

Company: _____

(Corporate Seal)

Company: _____

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

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 A312™ – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

SURETY

Company: *(Corporate Seal)*

Signature: _____

Name _____
and Title: _____

Signature: _____

Name _____
and Title: _____

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:**OWNER'S REPRESENTATIVE:**

(Architect, Engineer or other party:)

§ 1 The Contractor and 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, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 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 Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 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 the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 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.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, 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.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 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. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 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 Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. 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.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(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 _____

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.

EQUAL BENEFITS COMPLIANCE PAYMENT CERTIFICATION FORM

PURPOSE

25.13 of the Dane County Ordinance requires that each contractor receiving payment for contracted services must certify that he or she has complied fully with the requirements of Chapter 25.13 “Equal Benefits Requirement” of the Dane County Ordinances. Such certification must be submitted prior to the final payment on the contract.

This form should be included with a copy of the final contract invoice forwarded to your contract representative at Dane County.

CERTIFICATION

I, _____ certify that
Printed or Typed Name and Title

Printed or Typed Name of Contractor

has complied fully with the requirements of Chapter 25.13 of the Dane County Ordinances “Equal Benefits Requirements”.

Signed _____

Date _____

For questions on this form, please contact Chuck Hicklin at 608-266-4109 or your contract representative at Dane County.

GENERAL CONDITIONS OF CONTRACT

TABLE OF CONTENTS

1. CONSTRUCTION DOCUMENTS	2
2. DEFINITIONS	2
3. ADDITIONAL INSTRUCTIONS AND DRAWINGS	2
4. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES	3
5. CUTTING AND PATCHING.....	4
6. CLEANING UP	4
7. USE OF SITE.....	4
8. MATERIALS AND WORKMANSHIP	5
9. CONTRACTOR'S TITLE TO MATERIALS	5
10. "OR EQUAL" CLAUSE.....	5
11. PATENTS AND ROYALTIES.....	6
12. SURVEYS, PERMITS, REGULATIONS AND TAXES.....	7
13. CONTRACTOR'S OBLIGATIONS AND SUPERINTENDENCE.....	7
14. WEATHER CONDITIONS	8
15. PROTECTION OF WORK AND PROPERTY	8
16. INSPECTION AND TESTING OF MATERIALS	8
17. REPORTS, RECORDS AND DATA	9
18. CHANGES IN THE WORK	9
19. EXTRAS	10
20. TIME FOR COMPLETION.....	10
21. CORRECTION OF WORK.....	10
22. SUBSURFACE CONDITIONS FOUND DIFFERENT	11
23. RIGHT OF DEPARTMENT TO TERMINATE CONTRACT	11
24. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES	11
25. PAYMENTS TO CONTRACTOR	12
26. WITHHOLDING OF PAYMENTS.....	13
27. ACCEPTANCE OF FINAL PAYMENT AS RELEASE	14
28. PAYMENTS BY CONTRACTOR.....	14
29. CONTRACT SECURITY	14
30. ASSIGNMENTS.....	15
31. MUTUAL RESPONSIBILITY OF CONTRACTORS	15
32. SEPARATE CONTRACTS	15
33. SUBCONTRACTS	15
34. PUBLIC WORKS PROJECT MANAGER'S AUTHORITY	16
35. ARCHITECT / ENGINEER'S AUTHORITY	16
36. STATED ALLOWANCES	17
37. ESTIMATES OF QUANTITIES	17
38. LANDS AND RIGHTS-OF-WAY	17
39. GENERAL GUARANTEE.....	18
40. CONFLICTING CONDITIONS	18
41. NOTICE AND SERVICE THEREOF	18
42. PROTECTION OF LIVES AND HEALTH	19
43. AFFIRMATIVE ACTION PROVISION AND MINORITY / WOMEN / DISADVANTAGED BUSINESS ENTERPRISES	19
44. COMPLIANCE WITH FAIR LABOR STANDARDS	20
45. DOMESTIC PARTNERSHIP BENEFITS	20
46. USE AND OCCUPANCY PRIOR TO ACCEPTANCE	20
47. MINIMUM WAGES	20
48. CLAIMS	21
49. ANTITRUST AGREEMENT	21
50. INSURANCE.....	22
51. WISCONSIN LAW CONTROLLING	24

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 Architect / Engineer or Public Works Project Manager 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 Manager is appointed by and responsible to Department. Public Works Project Manager 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 Manager 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 Architect / 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 Architect / Engineer's approval, one (1) copy shall remain in Architect / 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 Architect / 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 Architect / 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 Architect / Engineer in writing of any deviation in Shop Drawings or Samples from requirements of Construction Documents. Architect / Engineer will not consider partial lists.
- E. Architect / Engineer will review and approve or reject Shop Drawings with reasonable promptness to cause no delay. Architect / Engineer's approval shall not relieve Contractor from responsibility for errors or omissions in Shop Drawings.
- F. Contractor shall not commence any work requiring Shop Drawing, Product Data or Sample submission until Architect / 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 times 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. Architect / 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 Architect / 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 Architect / 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 Architect / 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 Architect / Engineer, of equal substance and function. Architect / 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 Architect / 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 Architect / 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, Architect / 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 Architect / Engineer and Department, shall constitute violation of Contract, and that Architect / 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. Architect / 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 Architect / 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, Architect / 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 Architect / 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, Architect / 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 Manager.
- 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 Architect / Engineer and Department.
- F. Remove from project or take other corrective action upon notice from Architect / Engineer or Department for Contractor's employees whose work is considered by Architect / 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 Architect / Engineer or Public Works Project Manager shall not relieve Contractor of any obligations.

14. WEATHER CONDITIONS

- A. In event of temporary suspension of work, or during inclement weather, or whenever Architect / 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 Architect / 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 is 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 Architect / Engineer and / or Department, in emergency that threatens loss or injury of property, or safety of life. Contractor shall notify Architect / Engineer and / or Department immediately thereafter. Promptly submit any claim for compensation by Contractor due to such extra work to Architect / 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, Architect / Engineer's, or Public Works Project Manager's instructions require any work to be specially tested or approved, Contractor shall give Architect / Engineer and Public Works Project Manager 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. Architect / 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 Architect / Engineer and Public Works Project Manager 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 Architect / 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 Architect / 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 Manager 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 Architect / Engineer and Public Works Project Manager 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 Architect / Engineer's and Public Works Project Manager'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) business 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 Architect / 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 Architect / Engineer and Public Works Project Manager of such conditions before they are disturbed. Architect / Engineer will thereupon promptly investigate conditions, and if Architect / Engineer finds that they materially differ from those shown on Drawings or indicated in Specifications, Architect / 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) business 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) business 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) business 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 Manager.
- 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 labor 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 Manager.
- 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 Architect / Engineer and Public Works Project Manager.

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.
- B. Submit these estimates for approval first to Architect / Engineer, then to Public Works Project Manager. 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.
- C. 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 Architect / Engineer and approval of Department.
- D. Contractor shall submit for approval first to Architect / Engineer, and then to Public Works Project Manager 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.

- E. 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) business days from receipt of payment.
- F. Payments by County will be due within forty-five (45) business days after receipt by Department of Application and Certificate for Payment.
- G. 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 Architect / Engineer and Public Works Project Manager find that progress of the Work corresponds with Construction Schedule. If Architect / Engineer and Public Works Project Manager 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.
- H. 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.
- I. County will make final payment within sixty (60) calendar days after final completion of the Work, and will constitute acceptance thereof. Submit Equal Benefits Compliance Payment Certification with final pay request. Payment may be denied if Certification is not included.
- J. 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.
- K. 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, workers, 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) business 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 Architect / 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) business 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 MANAGER’S AUTHORITY

- A. Public Works Project Manager 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. ARCHITECT / ENGINEER’S AUTHORITY

- A. Architect / Engineer is retained by, and is responsible to Department acting for County.
- B. Architect / 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. Architect / 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. Architect / Engineer shall provide responsible observation of construction. Architect / Engineer has authority to stop the Work whenever such stoppage may be necessary to insure proper execution of Construction Documents.
- E. Architect / Engineer shall be interpreter of conditions of Construction Documents and judge of its performance.
- F. Within reasonable time, Architect / Engineer shall make decisions on all matters relating to progress of the Work or interpretation of Construction Documents.
- G. Architect / Engineer’s decisions are subject to review by Public Works Project Manager.

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 Architect / Engineer and Public Works Project Manager.
- 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) business 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 affect 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) business 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 25.13, 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 Manager, 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, worker 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 Assistant Public Works Director has reviewed Architect / 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 Assistant Public Works Director the 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 Architect / 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 Architect / 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 50.A.2.b) shall not extend to liability of Architect / 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 Architect / 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 50.A.2 & 50.A.3. 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) business days written notice has been received by Risk Manager."

B. Builder's Risk:

1. County shall provide Builder's Risk insurance coverage for its insurable interests in construction or renovation projects with completed value of \$500,000 or less. Therefore, if project completed value is more than \$500,000, Contractor shall obtain and maintain in force, at its own expense, Builder's Risk Insurance on all risks for amount equal to full completed value of covered structure or replacement value of alterations or additions. Any deductible shall not exceed \$25,000 for each loss. Policy shall include occupancy clause and list Dane County as loss payee.

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 Architect / 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 Architect / 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.

SUPPLEMENTARY CONDITIONS

1. APPLICATION & CERTIFICATE FOR PAYMENT

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


AIA Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:	PROJECT:	APPLICATION NO:	Distribution to:
FROM CONTRACTOR:	VIA ARCHITECT:	PERIOD TO:	OWNER <input type="checkbox"/>
		CONTRACT FOR:	ARCHITECT <input type="checkbox"/>
		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.
 AIA Document G703™, Continuation Sheet, 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
 (Columns D + E on G703) \$ _____

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

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

6. TOTAL EARNED LESS RETAINAGE \$ _____
 (Line 4 minus Line 5 Total)

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

8. CURRENT PAYMENT DUE \$ _____

9. BALANCE TO FINISH, INCLUDING RETAINAGE \$ _____
 (Line 3 minus Line 6)

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

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

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

Notary Public:
 My commission expires: _____

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

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

ARCHITECT:
 By: _____ Date: _____

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

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 G702™ – 1992, Copyright © 1963, 1965, 1971, 1978, 1983 and 1992 by The American Institute of Architects. All rights reserved. WARNING: 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 ten (10) 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.

Continuation Sheet

AIA Document G702™-1992, Application and Certificate for Payment, or G732™-2009, Application and Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached. In tabulations below, amounts are in US dollars. Use Column I on Contracts where variable retainage for line items may apply.

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

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED <i>(Not in D or E)</i>	G TOTAL COMPLETED AND STORED TO DATE <i>(D+E-F)</i>	H BALANCE TO FINISH <i>(C-G)</i>	I RETAINAGE <i>(if variable rate)</i>
			FROM PREVIOUS APPLICATION <i>(D-E)</i>	THIS PERIOD				
GRAND TOTAL								

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 © 1963, 1965, 1966, 1967, 1970, 1978, 1983 and 1992 by The American Institute of Architects. All rights reserved. WARNING: 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 ten (10) 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. 10-1204504

2. CONTRACTOR WAGE AFFIDAVIT

- A. 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 in form as hereinafter set forth in this section. Affidavit affirms that all persons employed by contractor or by any of contractor's subcontractors on such contract have been paid no less than minimum wages established under Dane County Ordinances, Chapter 40, Subchapter II (Minimum Wage Ordinance) and in effect at date of execution of contract, that full payment of wages earned has been made, and that no rebates either directly or indirectly have been made. Form of such affidavit is included in this section.
- B. Form should be included with a copy of the final contract invoice forwarded to your contract representative at Dane County.

3. INSURANCE

A. **Contractor Carried Insurance.** In order to protect itself and the County, Contractor shall not commence work under this Contract until obtaining all required insurance and the County has approved such insurance. Contractor shall not allow any subcontractor to commence work on subcontract until insurance required of subcontractor has been so obtained and approved.

1. **Pollution Insurance Policy**

Contractor shall procure and maintain during life of this Contract, Pollution Insurance Policy in amount of at least \$1,000,000 per occurrence, \$5,000,000 aggregate.

SAMPLE ONLY -
NOT FOR
SUBMITTAL

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. Change Procedures
 6. Alternates
 7. Coordination
 8. Cutting and Patching
 9. Conferences
 10. Progress Meetings
 11. Submittal Procedures
 12. Proposed Products List
 13. Shop Drawings
 14. Product Data
 15. Samples
 16. Manufacturers' Instructions
 17. Manufacturers' Certificates
 18. Quality Assurance / Quality Control of Installation
 19. References
 20. Interior Enclosures
 21. Protection of Installed Work
 22. Parking
 23. Staging Areas
 24. Occupancy During Construction and Conduct of Work
 25. Protection
 26. Progress Cleaning
 27. Products
 28. Transportation, Handling, Storage and Protection
 29. Product Options
 30. Substitutions
 31. Starting Systems
 32. Demonstration and Instructions
 33. Contract Closeout Procedures
 34. Final Cleaning
 35. Adjusting
 36. Operation and Maintenance Data
 37. Spare Parts and Maintenance Materials
 38. As-Built and 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 upgrades of rigging and lighting in the Alliant Energy Center Arena Performance area.
- B. Work by Owner: Not applicable.
- 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.
- B. Coordinate utility outages and shutdowns with Owner.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit one (1) original copy with “wet” signatures 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.
- D. Submit Applications for Payment to Architect / Engineer for initial approval. Architect / Engineer will forward approved copies to Owner who will also approve & process for payment.
- E. Submit Applications for Payment to Public Works Project Manager for approval & processing for payment.

1.5 CHANGE PROCEDURES

- A. Change Order Forms: Dane County Contract Change Order, Form 014-32-20 (latest issue).
- B. Contractor's costs for Products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from contingency allowance.

1.6 ALTERNATES

- A. Alternates quoted on Bid Form shall be reviewed and accepted or rejected at Owner's option.

- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates: there are no alternates proposed for this project.

1.7 COORDINATION

- A. Coordinate scheduling, submittals, and work of various sections of Specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify utility requirement characteristics of operating equipment are compatible with building utilities.
- C. Coordinate space requirements and installation of mechanical and electrical work that are indicated diagrammatically on Drawings.
- D. Refer to Drawings for recommended work sequence and duration.
- E. Contractor shall provide Public Works Project Engineer with work plan that ensures the Work will be completed within required time of completion.
- F. Construct work in stages to accommodate Dane County Alliant Energy Center operations. All activities shall be coordinated one (1) week (minimum) in advance with Public Works Project Manager unless noted otherwise in these specifications.
- G. The preferred schedule of work is for construction to begin on April 24, 2018 with final completion on June 22, 2018. If this schedule cannot be met, there will be an additional 29 days in August and September for completion. However, the minimum completion prior to June 22, 2018 must include installation and operation of the new lights and removal of the existing light racks.**
- H. 24 hour access and weekend will be available during most of the scheduled work period.
- I. The entire month of July 2018 will not be available for work due to event scheduling at the Alliant Energy Center Coliseum.
- J. Public Works Project Manager may choose to photograph or videotape site or workers as the Work progresses.

1.8 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.

1.9 CONFERENCES

- A. There will be pre-bid conference for this project; see Instructions to Bidders.
- B. Owner will schedule a preconstruction conference after Award of Contract for all affected parties.
- C. Contractor shall submit Construction Schedule at pre-construction meeting.

1.10 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at minimum of one (1) bi-weekly, at a time agreed upon by the Public Works Project Manager.
- B. Preside at meetings, record minutes, and distribute copies within two (2) business days to those affected by decisions made.
- C. Attendance at progress meetings by General Contractor, subcontractors, or their authorized representative, is mandatory.
- D. Contractors shall give verbal reports of progress on the Work, discuss schedule for upcoming period and present all conflicts, discrepancies or other difficulties for resolution.
- E. Day & time of progress meetings to be determined at pre-construction meeting.

1.11 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.

1.12 PROPOSED PRODUCTS LIST

- A. Within fifteen (15) business 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.

1.13 SHOP DRAWINGS

- A. Submit number of copies that Contractor requires, plus three (3) copies that shall be retained by Public Works Project Manager.

1.14 PRODUCT DATA

- A. Submit number of copies that Contractor requires, plus two (2) copies that shall be retained by Public Works Project Manager.
- 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.

1.15 SAMPLES

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

1.16 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.

1.17 MANUFACTURERS' CERTIFICATES

- A. When specified in individual Specification sections, submit manufacturers' certificate to Public Works Project Manager 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.

1.18 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.

1.19 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 Manager before proceeding.

1.20 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.

1.21 PROTECTION OF INSTALLED WORK

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

1.22 PARKING

- A. Employee and construction vehicle parking will be available at the Work site.
- B. All contractors and their employees shall cooperate with General Contractor and others in parking of vehicles to avoid interference with normal operations and construction activities.
- C. Do not obstruct existing service drives and parking lots with equipment, materials and / or vehicles. Keep accessible for Owner's use at all times.

1.23 STAGING AREAS

- A. Coordinate staging areas with Alliant Energy Center staff and Public Works Project Manager prior to starting the Work.
- B. On-site space for use as staging areas and storage of materials will be apportioned among 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.

1.24 OCCUPANCY DURING CONSTRUCTION AND CONDUCT OF WORK

- A. Smoking is prohibited on Dane County property.
- B. Owner reserves right at any time to dismiss from premises any Contractor or construction personnel that do not uphold requirements of this Section.
- C. Owner shall not be held liable for any lost time, wages, or impacts to construction schedule by any Contractor or construction personnel dismissed for failure to uphold requirements of this Section.
- D. Areas of existing facility will be occupied during period when the Work is in progress. Work may be done during normal business hours (8:00 am to 4:30 pm), but confer with Owner, schedule work and store materials so as to interfere as little as possible with

normal use of premises. Work performed on Saturday shall be by permission of Owner. 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.

- E. 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.
- F. Contractor shall, at all times, provide approved, safe walkways and facility entrances for use by Owner, employees and public.
- G. Contractor shall provide adequate protection for all parts of facility, its contents and occupants wherever the Work under this Contract is to be performed.
- H. 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.
- I. 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.
- J. Contractor is not responsible for providing & maintaining temporary toilet facilities.

1.25 PROTECTION

- A. Contractor shall protect from damage / injury all trees, shrubs, hedges, plantings, grass, mechanical, electrical & plumbing equipment, walks and driveways and pay for any damage to same resulting from insufficient or improper protection.

1.26 PROGRESS CLEANING

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

1.27 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.

1.28 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

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

1.29 PRODUCT OPTIONS

- A. Where definite material is specified, it is not intentional 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 Public Works Project Manager for approval at least seven (7) business days prior to Bid Due Date.
- B. Products and materials that are not specified, but have been approved for use by Public Works Project Manager shall be identified in addenda to all bidding contractors.
- C. Requests for material or product substitutions submitted after Bid Due Date may be considered. Owner reserves right to approve or reject substitutions based on Specification requirements and intended use.

1.30 SUBSTITUTIONS

- A. Public Works Project Manager shall **consider** requests for Substitutions only within fifteen (15) calendar days after date of Public Works Construction Contract.
- B. Substitution of lighting or control systems must include a complete scope design proving the substitution will meet all requirements for light levels, controls, user interface, remote operation, equipment space requirements, structural loading limitations and electrical system load capability.**
- C. Document each request with complete data substantiating compliance of proposed Substitution with Construction Documents.
- D. Submit three (3) copies of requests for Substitution for consideration. Limit each request to one (1) proposed Substitution.
- E. Substitutions shall not change contract price established at Bid Due Date.

1.31 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.

1.32 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 photograph or videotape demonstration session; demonstration and demonstrator shall be to level of satisfaction of Owner.

1.33 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 Manager's inspection.
- B. Submit final Application for Payment identifying total adjusted Contract Sum / Price, previous payments, and amount remaining due.

1.34 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.

1.35 ADJUSTING

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

1.36 OPERATION AND MAINTENANCE MANUAL

- A. Provide two (2) bound, hard-copy operation and maintenance manuals that include all systems, materials, products, equipment, mechanical and electrical equipment and systems supplied and installed in the Work. Provide electronic version of operation and maintenance manual also.

1.37 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.

1.38 AS-BUILT AND 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 Manager with original marked up redlines of Construction Documents' drawings and specifications that shall include all Addendums, Change Orders, Construction Bulletins, on-site changes, field corrections, etc. These are project As-Built Drawings & Specifications. Record Drawings & Specifications shall be created from these As-Built by Public Works.
- B. Architect / Engineer shall update original Construction Documents to include all Addendums & any other changes including those provided by Contractor in As-Built Drawings & Specifications. These updates are project Record Drawings & Specifications.
- C. Architect / Engineer shall furnish Public Works Project Manager with Record Drawings as detailed in Professional Services Agreement.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 14 13

ACCESS TO SITE

PART 1 GENERAL

1.01 SITE ACCESS AND AVAILABILITY

- A. Site will be available to Contractor upon receipt of the Owner's written notice to proceed unless otherwise indicated in these Documents. Care, custody, and control of the site work area, equipment area, and material storage area are vested in Contractor during the term of operations under the Contract.
- B. Failure to examine the building and the site and to become familiar with the existing conditions shall not constitute cause for complaint or claim for extra payment. Accept Project site as it exists.
- C. Means of ingress or egress to buildings shall not be blocked for any reason or hamper the normal operation of the building in any way unless permission is first obtained from the Owner. Fire protection and immediate access for firefighting equipment must be maintained at all times.
- D. Equipment and material storage areas are limited to those designated. Fencing of ground work area may be required to keep unauthorized personnel out of the area.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01 31 19
PROJECT MEETINGS

PART 1 GENERAL

1.01 PROJECT MEETINGS

A. Pre-Construction Conference

1. Prior to starting any work on the Contract, the Owner, the Engineer and the Contractor will meet at the site to discuss procedures, schedules, review submittals, etc. for the Work. The Contractor's manpower scheduler and foreman, who will be on the Project full-time directing the Work, and the Contractor's subcontractors' foremen, must attend this meeting. If the Contractor's foremen are not present at this scheduled meeting, the meeting will be canceled and rescheduled at Contractor's expense.
2. The agenda will include, but not be limited to:
 - a. Review of insurance certificates.
 - b. Submission of list of subcontractors, list of products, schedule of values, and construction schedule that have not been previously submitted.
 - c. Designation of personnel representing the parties in the Contract and the Engineer.
 - d. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract close-out procedures.
 - e. Scheduling.
 - f. Use of premises by Owner and Contractor(s).
 - g. Security and housekeeping procedures.
 - h. Procedures for maintaining record documents.
3. The prime contractor shall record the meeting minutes and distribute copies within 2 days to all participants and those affected by decisions made.

B. Progress Meetings:

1. The Prime Contractor shall schedule and administer meetings throughout the progress of the work at weekly intervals.

2. The Prime Contractor shall make arrangements for meetings, prepare an agenda with copies for participants, preside at meetings, record meeting minutes, and distribute copies within 2 days to all participants and those affected by decisions made.
3. Attendance required: All job superintendents, major subcontractors and suppliers, Owner, and Engineer (as requested by Owner).
4. Agenda:
 - a. Review minutes of previous meetings
 - b. Review work progress
 - c. Field observations, problems, and decisions
 - d. Identification of problems which impede planned progress
 - e. Review of submittals schedule and status of submittals
 - f. Review of off-site fabrication and delivery schedules
 - g. Maintenance of progress schedule
 - h. Corrective measures to regain projected schedules
 - i. Planned progress during succeeding work period
 - j. Coordination of projected progress
 - k. Maintenance of quality and work standards
 - l. Effect of proposed changes on progress schedule and coordination
 - m. Other business relating to the work

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 PROCEDURES

- A. Deliver submittals electronically to the Engineer with a copy to the owner.

Engineer: Ziad Salameh, LLC (ZS LLC)
Address: 10501 W Research Drive, Suite 207
Milwaukee, WI 53226
Contact: Ryan Larson
Email: rlarson@zslc-us.com

Owner: Alliant Energy Center
Address: 1919 Alliant Energy Center Way
Madison, WI 563713
Contact: Mark Clark
Email: Clarke@alliantenergycenter.com

- B. Identify submittals with Contractor's name, Project name and date of submittal.
- C. Make any corrections to the submittals required by Engineer and resubmit until approved. Direct specific attention in writing to revisions on resubmittals other than the corrections requested by the Engineer.

1.02 CONSTRUCTION SCHEDULE

- A. Submit work schedule in graph or tabular form for the various phases of the Work including delivery of materials to site, set-up, start-up, tear off (if applicable), recover, phased work (with area designation and key plan), detail reconstructions (if applicable), metal work, etc.
- B. Should any activity critical to the full completion date be, in the judgment of the Engineer, behind schedule by seven (7) or more days, the Engineer may direct the Contractor to expedite the Work to regain compliance with the schedule. If so directed, the Contractor shall promptly expedite the Work by whatever means required including but not limited to, increasing the work force, adding additional shifts and working overtime. Such expediting shall be at no additional cost to the Owner. Failure of the Engineer to so direct shall not relieve the Contractor of his responsibility to comply with the construction schedule.
- C. Submit documents to claim conflicts with the work schedule due to weather, labor, etc. within ten (10) working days of said incident(s) for proper evaluation and action by the Engineer.
- D. Additional time provided by ZS LLC personnel for meetings, construction site visits, final walkovers, closeout paperwork, communications, etc. when following the specified construction completion date above will be charged to the Contractor as a deduct change order to the contract cost between Alliant Energy

Center and the Contractor. The additional costs shall include all reimbursable expenses.

1.03 **SHOP DRAWINGS AND SAMPLES**

- A. Submit all drawings, diagrams, illustrations, schedules, performance charts, instructions, specifications and other product data illustrating portions of the Work as required by the Specification sections. Such submittals, whether or not referred to as shop drawings, shall comply with the requirements for shop drawings herein prescribed. Unless otherwise noted in the Specification sections, submit a minimum of one (1) set of electronic shop drawings to the Engineer in PDF format.
- B. Submit all samples of materials, equipment and workmanship as required by the Specification sections.
- C. Unless the precise color and pattern is specifically specified in the Specification sections, and whenever a color or pattern is available in a specified product, submit accurate color and pattern charts and samples for review and selection.
- D. Review, stamp with approval and submit all shop drawings and samples required by the Specification sections. Shop drawings or samples submitted without the Contractor's approval stamp will be returned without review.
- E. By approving and submitting shop drawings and samples, the Contractor thereby represents that he has determined and verified all field measurements, field construction criteria, materials, catalog numbers and similar data and that he has checked and coordinated each shop drawing and sample with the requirements of the Work and of the Contract Documents.
- F. Shop drawings and samples will be reviewed and approved by the Owner and/or Engineer to determine in general if they are in compliance with the Contract Documents. Such approval shall not relieve the Contractor of responsibility for any deviations from the requirements of the Contract Documents or from the responsibility for errors or omissions in the shop drawings or samples.
- G. Do not commence any portion of the Work requiring a shop drawings or sample submittal until the submittal has been approved as prescribed herein. All such portions of the Work shall be in accordance with approved shop drawings or samples.

1.04 **MATERIAL SAFETY DATA SHEETS**

- A. Submit "Material Safety Data Sheets".

1.05 **CERTIFICATES OF COMPLIANCE**

- A. Submit in duplicate, certificates of compliance for each product specified, prior to installation of applicable product.
- B. Certificates of compliance shall include certified laboratory test reports, manufacturer's certificates or other evidence sufficient to verify compliance with the products specified.

- C. Submit all warranties, guarantees, manuals, etc. as described more fully in subsequent sections.

1.06 **WAIVER OF LIEN**

- A. Submit for approval, duplicate sample of executed Waiver of Lien to be used with each invoice.
- B. Submit letter listing persons approved to sign Waiver of Lien.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT, DISPOSAL & RECYCLING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Summary
 - 2. Waste Management Goals
 - 3. Construction and / or Demolition Waste Management
 - 4. Waste Management Plan
 - 5. Reuse
 - 6. Recycling
 - 7. Materials Sorting and Storage On Site
 - 8. Lists of Recycling Facilities Processors and Haulers
 - 9. Waste Management Plan Form

- B. Related Sections:
 - 1. Section 01 00 00 - Basic Requirements

1.2 WASTE MANAGEMENT GOALS

- A. Dane County requires that as many waste materials as possible produced as result of this project be salvaged, reused or recycled in order to minimize impact of construction waste on landfills and to minimize expenditure of energy and cost in fabricating new materials. Additional information may be found in Dane County Green Building Policy, Resolution 299, 1999-2000.

1.3 CONSTRUCTION AND / OR DEMOLITION WASTE MANAGEMENT

- A. All construction and demolition waste suitable for recycling may go to Dane County Construction & Demolition Recycling Facility located at 7102 US Hwy 12, Madison, located across from Yahara Hills Golf Course. This facility can receive mixed loads of construction and demolition waste. For complete list of acceptable materials see www.countyofdane.com/pwht/recycle/CD_Recycle.aspx.
- B. Dane County Landfill, also at 7102 US Hwy 12, Madison, must receive all other waste from this project. www.countyofdane.com/pwht/recycle/landfill.aspx.

1.4 WASTE MANAGEMENT PLAN

- A. Contractor shall develop Waste Management Plan (WMP) for this project. Dane County's Special Projects & Materials Manager may be contacted with questions. Outlined in RECYCLING section of this specification are examples of materials that can be recycled or reused as well as recommendations for waste sorting methods.

B. Contractor shall complete WMP and include cost of recycling / reuse in Bid. WMP will be submitted to Public Works Project Manager within fifteen (15) business days of Bid Due date. Copy of blank WMP form is in this Section. Submittal shall include cover letter and WMP form with:

1. Information on:
 - a. Types of waste materials produced as result of work performed on site;
 - b. Estimated quantities of waste produced;
 - c. Identification of materials with potential to be recycled or reused;
 - d. How materials will be recycled or reused;
 - e. On-site storage and separation requirements (on site containers);
 - f. Transportation methods; and
 - g. Destinations.

1.5 REUSE

A. Contractors and subcontractors are encouraged to reuse as many waste materials as possible. Salvage should be investigated for materials not reusable on site.

1.6 RECYCLING

A. These materials may be recycled at Dane County Construction & Demolition Recycling Facility:

1. Wood.
2. Wood Pallets.
3. PVC Plastic (pipe, siding, etc.).
4. Cardboard.
5. Metal.
6. Unpainted Gypsum Drywall.

B. These materials can be recycled elsewhere in Dane County area:

1. Fluorescent Lamps.
2. Foam Insulation & Packaging (extruded and expanded).
3. Carpet Padding.
4. Barrels & Drums.

C. All materials must be recycled at WDNR permitted waste processing facilities that adhere to all State Statutes.

1.7 MATERIALS SORTING AND STORAGE ON SITE

A. Contractor shall provide separate containers for recyclable materials. Number of containers will be dependent upon project and site conditions.

B. Contractor shall provide on-site locations for subcontractors supplied recycling containers to help facilitate recycling.

C. Mixed loads of recycled materials are allowed only per instructions at www.countyofdane.com/pwht/recycle/CD_Recycle.aspx.

1.8 LISTS OF RECYCLING FACILITIES PROCESSORS AND HAULERS

- A. Refer to www.countyofdane.com/pwht/recycle/CD_Recycle.aspx for information on Dane County Construction & Demolition Recycling Facility.
- B. Web site www.countyofdane.com/pwht/recycle/categories.aspx lists current information for Dane County Recycling Markets. Contractors can also contact Allison Hackner at 608/266-4990, or local city, village, town recycling staff listed at site www.countyofdane.com/pwht/recycle/contacts.aspx. Statewide listings of recycling / reuse markets are available from UW Extension at <https://www.uwgb.edu/shwec/>.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

WASTE MANAGEMENT PLAN FORM



Contractor Name: _____

Address: _____

Phone No.: _____ Recycling Coordinator: _____

MATERIAL	ESTIMATED QUANTITY	DISPOSAL METHOD (CHECK ONE)		RECYCLING / REUSE COMPANY OR DISPOSAL SITE
Salvaged & reused building materials	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Wood	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Wood Pallets	_____ units	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
PVC Plastic	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Cardboard	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Metals	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Unpainted Gypsum / Drywall	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Fluorescent Lamps	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Foam Insulation	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Carpet Padding	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Barrels & Drums	_____ units	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Glass	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Other	_____	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Other	_____	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Other	_____	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	

SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 GENERAL

1.01 CLOSEOUT PROCEDURES

- A. Comply with the procedures stated in the General Conditions for “Issuance of Certificate of Substantial Completion”. When the Contractor considers the Work has reached Substantial Completion, submit written certification that the Contract Documents have been reviewed, Work has been inspected, and that the Work was completed in accordance with the Contract Documents and ready for the Engineer’s observation.

1.02 CLEANING

- A. Prior to a final inspection and acceptance of the Work, remove all debris, rubbish, waste material, tools, construction equipment, machinery, and surplus materials from the Project site and thoroughly clean the building of all roofing stains, marks, spills, or coatings. Remove all dirt, dust, marks, smears, spots, grease, and stains from all floors, walls, ceilings, steel, piping, interior fixtures, equipment, hardware, and all finish surfaces.

END OF SECTION

SECTION 01 78 00

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 RECORD DRAWINGS AND SHOP DRAWINGS

- A. Provide a clean, undamaged set of Contract Drawings including coordination drawings and shop drawings shall be kept at the job site as as-built record documents. Record "as-built" drawings shall be comprised of all sheets contained in the Contract Drawings, as well as all special equipment or systems drawings.
 - 1. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawings that show conditions fully and accurately. Where shop drawings, RFI's or other communication record are used to identify a change, record a cross-reference at the corresponding location on the Contract

- B. Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date. Items required to be marked include, but are not limited to, the following: Manuals shall be bound with covers of durable material, arranged in the sequence of the Specification sections and shall include the following:
 - 1. Indicate field changes of dimension and detail.
 - 2. RFIs
 - 3. Note changes of directions and locations, by dimensions and elevations, as utilities are actually installed.
 - 4. Record accurate locations of drainage piping and cleanouts.
 - 5. Indicate details not on original Contract drawings.
 - 6. "X-out" conditions not constructed and appropriately annotate "not constructed" to convey the actual "as constructed" condition. Neatly typewritten index.
 - 7. Complete written instructions regarding how to notify the Manufacturer in case of warranty claims.
 - 8. Instructions shall include: names, addresses and telephone numbers of the Manufacturer's headquarters personnel responsible for warranty work.
 - 9. Assemble all guarantees, warranties, and assignments thereof as required by the General Conditions and the Specification sections. The guarantees, warranties, and assignments shall be delivered to the Engineer prior to final payment for the Work.

- C. Mark record sets in a clear, legible manner, using red ink (no pencils); use other colors to distinguish between variations in separate categories of the work. Use 'whiteout' to erase errors.
- D. Mark new information that is important to Owner, but which was not shown on Contract Documents or Shop Drawings.
- E. Mark new information that is important to Owner, but which was not shown on Contract Documents or Shop Drawings.
- F. Show addenda items, change orders, RFI, or other means of communication used in the construction process.
- G. Show and date revisions to drawings with a "cloud" drawn around the revision.
- H. Organize record drawing sheets in manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set. Where shop drawings, RFI's or other communication record are used as a reference, include a copy of them as part of the record drawings.
- I. Shop Drawings:
 - 1. Maintain as record documents; legibly annotate to record changes made after review.
- J. Project Manual: During the construction period, maintain one complete copy of the Project Manual, including Specifications, addenda, and one copy of other written construction documents, such as Change Orders and RFI's issued in printed form during construction.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Selective Building Demolition:
 - 1. Selective demolition of systems, and building components designated to be removed.
 - 2. Protection of portions of building adjacent to or affected by selective demolition.
 - 3. Removal of abandoned utilities and wiring systems.
 - 4. Notification to Owner of schedule of shut-off of utilities which serve occupied spaces.
 - 5. Pollution control during selective demolition, including noise control.
 - 6. Removal and legal disposal of materials.
 - 7. Protection of designated site improvements and adjacent construction.
 - 8. Salvage of designated items.
 - 9. Interruption, capping or removal of utilities as applicable.

1.02 SUBMITTALS

- A. Schedule: Submit for approval selective demolition schedule, including schedule and methods for capping utilities to be abandoned and maintaining existing utility service.

1.03 QUALITY ASSURANCE

- A. Codes and Regulations: Comply with governing codes and regulations. Use experienced workers.

1.04 PRE-INSTALLATION MEETINGS

- A. Convene minimum two weeks prior to starting work of this section.

1.05 SEQUENCING

- A. Immediate areas of work will not be occupied during selective demolition. The public, including children, may occupy adjacent areas.

- B. No responsibility for buildings and structures to be demolished will be assumed by the Owner.
- C. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PART 2 PRODUCTS – NOT APPLICABLE TO THIS SECTION

PART 3 EXECUTION

3.01 SELECTIVE DEMOLITION

- A. Demolition Operations: Do not damage building elements and improvements indicated to remain. Items of salvage value, not included on schedule of salvage items to be returned to Owner, shall be removed from structure. Storage or sale of items at project site is prohibited.
- B. Utilities: Locate, identify, disconnect, and seal or cap off utilities in building components to be demolished.
- C. Occupied Spaces: Do not close or obstruct streets, walks, drives or other occupied or used spaces or facilities without the written permission of the Owner and the authorities having jurisdiction. Do not interrupt utilities serving occupied or used facilities without the written permission of the Owner and authorities having jurisdiction. If necessary, provide temporary utilities.
- D. Operations: Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.
- E. Security: Provide adequate protection against accidental trespassing. Secure project after work hours.
- F. Restoration: Restore finishes of patched areas.

3.02 SCHEDULE

- A. Items for Protection During Demolition and Construction: (The following are samples only)
 - 1. Adjacent construction.
- B. Items to be Salvaged for Reinstallation:
- C. Items to be Salvaged for Delivery to Owner:
- D. Utilities Requiring Interruption, Capping, or Removal:
 - 1. Electric

END OF SECTION

SECTION 05 12 00

STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 – Specification sections, apply to work of this section.

1.02 SCOPE

- A. Extent of structural steel work is shown on the Drawings.

1.03 QUALITY ASSURANCE

- A. Fabricator Qualifications: Minimum of five (5) years in fabrication and erection of structural steel for projects of similar size and difficulty. Subject to approval of Engineer and Owner.
- B. Welder Qualifications: Welding shall be done only by welding operators currently qualified according to AWS D1.1.
- C. Testing Agency:
 - 1. Testing and inspection will be made by an approved testing laboratory selected and paid by the Owner. Contractor shall furnish testing agency access to work, facilities, and incidental labor required for testing and inspection. Retention by the Owner of an independent testing agency shall in no way relieve the Contractor of responsibility for performing all work in accordance with the contract requirements.
 - 2. Furnish the testing agency with the following:
 - a. A complete set of Shop and Erection Drawings.
 - b. Information as to time and place of all rollings and shipment of material to shops.
 - c. Full and ample means and assistance for testing all materials.
 - d. Proper facilities, including scaffolding, temporary work platforms, etc., for inspection of the work in the mills, shop and field.
 - e. Representative sample pieces requested for testing.
 - f. Each person installing connections shall be assigned an identifying symbol or mark, and all shop and field connections shall be identified so that the inspector can refer back to the person making the connection.

3. See Section 3.04 for Scope of Testing.
- D. Reference Standards:
1. Welding: Meet requirements of AWS Structural Welding Code D1.1, latest edition.
 2. High Strength Bolts: Meet requirements of AISC Specifications for Structural Joints Using ASTM A325 or A490 Bolts, latest edition.
 3. Surface Preparation: Meet requirements of specifications contained in Steel Structures Painting Council's Steel Structures Painting Manual, Volume 2, Systems and Specifications, latest edition.
 4. Structural Steel and Metal Fabrications: The Testing Agency's inspector will perform his duties in such a way that neither fabrication nor erection is unnecessarily delayed or impeded. In no case will the inspector recommend or prescribe the method of repair of a defect.
- E. Welding and Materials:
1. Inspection of welding by the Testing Agency will be such as to assure that the work conforms to specified requirements, and will include:
 - a. Ascertainment that electrodes used for manual shielded metal-arc welding and the electrodes and flux used for submerged arc welding conform to the requirements of Section 05 12 00 Structural Steel Framing.
 - b. Ascertainment that the approved welding procedure and the approved welding sequence are followed without deviation, unless specific approval for change is obtained from the Structural Engineer. All welds to be prequalified.
- F. Documentation:
1. The Contractor shall maintain a complete and current set of submittals including shop and erection drawings, copies of all mill test reports, materials testing reports and inspection reports.
 2. Construction Deficiency Log: The Contractor shall maintain a Deficiency Log of construction deficiencies and non-conforming work noted by the Owner, Engineer, Contractor or Independent Testing Agency to be addressed and corrected by the Contractor. Each item in the Deficiency Log shall be referenced by an item number, with a description of the deficiency, the date the deficiency was noted, a description of the corrective action taken (if any) and the date when the corrective action was taken. Corrective actions shall be reviewed and approved by the Engineer and shall be documented in a Non-Conformance Report (NCR) and issued to the Engineer for distribution. A Request for Information (RFI) shall not be used for this purpose. A log of resolved and outstanding NCR's shall be maintained by the contractor.

3. The Contractor shall maintain a copy of all documentation on-site and accessible by the Engineer and Owner's representative.

1.04 SUBMITTALS

- A. Shop Drawings: Submit Shop Drawings as specified under Section 01 33 00. Shop drawings shall be original drawings produced by the subcontractor or supplier, and shall not be reproductions of the contract documents. Clearly indicate profiles, sizes, spacing and locations of structural members, connections, attachments, anchorages, framed openings, size and type of fasteners, cambers, and clearances. Indicate welded connections using standard AWS welding symbols. Clearly indicate net weld lengths, sizes and welding sequences. Shop drawings shall be checked for accuracy by fabricator and initialed by individual responsible for checking prior to submittal to Engineer for review. Shop drawings shall be complete when submitted unless prior approval was given.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Storage of Structural Steel: Structural steel members which are stored at the project site shall be above ground on platforms, skids, or other supports and stored upright to prevent twisting. Protect steel from corrosion. Store other materials in a weather-tight and dry place, until ready for use. Store packaged materials in their original, unbroken package or container.

1.06 JOB CONDITIONS

- A. Protection: Protect any adjacent materials or areas below from damage due to weld splatter or sparks during field welding.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Structural Steel: Unless otherwise noted or indicated, all W shapes shall meet requirements of ASTM A992. All other structural steel shapes and plates shall meet either ASTM A572 Grade or ASTM A36, latest editions.
- B. Unfinished Bolts: Meet requirements of ASTM A307, Carbon Steel Externally and Internally Threaded Standard Fasteners, latest edition with washers and hexagonal heads and nuts.
- C. High Strength Bolts: Meet requirements of ASTM A325, Type 1, High Strength Bolts for Structural Steel Joints, including suitable nuts and plain hardened washers, latest edition. Nuts and bolts shall be manufactured by the same entity to insure proper fit.
- D. Pipe: Meet requirements of ASTM A53, Type E or S, Grade B, ASTM A500, Grade B, or ASTM A501 excluding furnace butt welding, latest editions. Provide seamless pipe where pipe is utilized as a sleeve.
- E. Tube: Meet requirements of ASTM A500, Grade B or ASTM A1085, latest editions. Provide seamless tube where tube is utilized as a sleeve.

- F. Filler Metals for Welding: Meet requirements of AWS D1.1, 70 Series.
- G. Shop Primer: Fabricator's standard alkyd gray oxide, rust-inhibiting primer. Where steel is to be field painted, provide shop primer compatible with finish paint system specified in Division 9.
- H. Threaded rod: ASTM A193 Grade B7, zinc electroplated finish complying with ASTM B633 SC 1. For installations in corrosive or damp conditions, provide galvanized finish in accordance with ASTM A153, Class C or D.
- I. Nut: ASTM A563, Grade DH. Finish matching threaded rod.
- J. Washer: ANSI B18.22.1, Type A. Finish matching threaded rod.

2.02 FABRICATION

- A. General:
 - 1. Meet requirements of standards listed under 1.03.D. Reference Standards.
 - 2. Fabricate and assemble structural assemblies in shop to greatest extent possible as indicated on final shop drawings. Provide camber in structural members where indicated.
 - 3. Detailing and fabrication procedures shall account for distortion and shrinkage due to welding processes, both in the shop and in the field.
- B. Connections:
 - 1. Provide connections as shown or noted on the Drawings. Connections not shown or noted shall be standard Simple Shear Connections as shown in Part 10 of the AISC Steel Construction Manual, 13th Edition. See the Connections paragraph under the Submittals section for additional connection requirements.
 - 2. No combination of bolts and welds shall be used to transmit stress in the same faying surface of any connection.
 - 3. Shop connectors shall be welded or bolted using high-strength bolts.
 - 4. Field connections: Bolt field connections except where welded connections are indicated.
 - 5. Provide high-strength bolts for principal connections including all beam to beam and all beam to column connections.
- C. Shop Painting:
 - 1. Surface Preparation: After fabrication and shop assembly, clean all steel members, plates, connection angles and miscellaneous pieces. Remove loose rust, loose mill scale and spatter, slag or flux deposits.

- a. For steel not to receive shop primer, clean steel of grease and oil with solvent cleaners and of dirt and other foreign materials by sweeping with a fiber brush or other suitable means.
 - b. For steel to receive shop primer, prepare surfaces to be painted according to the requirements of SSPC Specification SP-2 "Hand Tool Cleaning".
 2. Priming: Immediately after surface preparation, apply primer in accordance with the manufacturer's recommendations at a rate to provide a uniform dry film thickness of not less than 2 mils per coat. Use painting methods which result in full coverage of joints, corners, edges and exposed surfaces.
 - a. Omit shop paint on surfaces to be welded. All other steel shall be shop primed.
 3. Painting: Paint all steel OSHA Safety Yellow. After painting, apply 8" wide, black/yellow striped oxide grit anti-slip safety tape to the top of the HSS10 walking beams.
- D. Marking: Mark all members in protected, plainly visible locations in accordance with reference numbers on setting diagrams. The member work point at each end of columns shall be determined and marked in the shop with a center punch or other acceptable means. Marking shall be placed on the flanges and web at each end of columns. Work point shall be as defined in AISC Code of Standard Practice, Section 7.13.
- E. Finished Work: All work shall be finished in accordance with the approved Shop Drawings and shall be true and free from twists, kinks, buckles, open joints and other defects.
- F. Cutting and Fitting: Perform all necessary cutting, fitting and drilling for the accommodation of other trades and do whatever is necessary to secure correct information for same, both before and after steel is delivered. No cutting or drilling will be permitted on the job site without the approval of the Engineer.
- G. Milling: Subassemblies with milled surfaces shall be completely assembled and welded before milling.
- H. Welding: Comply with AISC specifications and latest American Welding Society standards. Welds not specified shall be 3/16" fillet continuous but not less than the AISC minimum based on thickness of the parts to be joined.
- I. Splices: Splicing of members to obtain the required lengths will not be permitted without prior acceptance of the Engineer unless shown on the Drawings.
- J. Substitutions: Where exact sizes and weights called for are not readily available, secure the Engineers' acceptance of suitable sizes in time to prevent delay due to such substitutions.

PART 3 EXECUTION

3.01 PREPARATION

- A. Field Measurements: Take measurements on site as required for correct fabrication and installation. Fabricator shall be responsible for errors in fabrication and for correct fit of structural steel.

3.02 ERECTION

- A. General: Erect structural steel in accordance with AISC Code of Standard Practice for Steel Buildings and Bridges, latest edition, with additional requirements of this section.
- B. Field Assembly:
 - 1. Assemble structural steel to lines and elevations indicated within erection tolerances specified in AISC Code of Standard Practice for Steel Buildings and Bridges, Section 7.
 - 2. Align and adjust members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 3. Level and plumb individual members of structure.
 - 4. Make allowance for difference between temperature at time of erection and mean temperature when structure is complete and in service.
 - 5. Measure and adjust for distortion and shrinkage of field welded assemblies as erection proceeds. Submit procedure to Testing Agency for review prior to start of erection.
 - 6. Splice only where indicated on Drawings.
- C. Field Connections: Make field connections with bolts, high strength bolts or field welding unless otherwise indicated. Clean existing surfaces before welding to existing steel. No drifting or cutting to enlarge unfair holes will be allowed. Make minor corrections by reaming. Serious defects may not be corrected in the field but shall be called to the attention of the Engineer for a decision as to the method and/or procedure.
- D. Bolting:
 - 1. Non Slip-Critical Connections:
 - a. All connections not required to be slip-critical and/or axial tension shall be Shear/Bearing Connections.
 - b. All Shear/Bearing Connections shall use the specified standard high-strength bolts.

- c. All bolts shall be tightened to the snug tight condition. "Snug tight condition is defined as the tightness that exists when all plies in a joint are in firm contact (per AISC)".
- E. Temporary Bracing: Consider all structural steel as non-self-supporting steel frames. Provide suitable temporary bracing as necessary to maintain structural steel in proper position until permanently secured. Leave temporary bracing in place as required for safety.
- F. Field Modification: Written acceptance from the Engineer must be obtained before using cutting torch for field modification or re-fabrication of structural steel. The structural steel fabricator shall be responsible for errors in fabrication and for correct fit in the field.
- G. Erection Tolerances: Comply with requirements of AISC Code of Standard Practice for Steel Buildings and Bridges.

3.03 FIELD QUALITY CONTROL

- A. Testing and Inspections: All quality control tests and inspections required herein will be performed by the Owner's independent testing and inspections agency (Testing Agency) employed under the terms of Technical Specifications Section 01 45 00. Quality assurance testing and inspections are for the Owner's benefit and use, and are not to be construed as limiting Contractor's contractual responsibility for performing work in accordance with the Contract Documents.
- B. Coordination and Assistance: The Owner's testing and inspection agency will maintain a complete set of shop and erection drawings, copies of all mill test reports, and full and ample means and assistance for testing all materials, including proper facilities, scaffolding, temporary work platforms, etc., in mill, shop, and field.
- C. The testing agency's inspector will perform his duties in such a way that neither fabrication nor erection is unnecessarily delayed or impeded. In no case shall the inspector recommend or prescribe the method of repair of a defect.
- D. Field Inspection: Field inspection by the Testing Agency of erected steel shall be such as to assure that the work conforms to specified requirements and will include:
 - 1. Inspection of field welding as required herein.
 - 2. Ascertainment of proper fit and alignment.
 - 3. Ascertainment of proper installation and tensioning of bolts.
- E. Welding Materials and Workmanship: Inspection of welding will be such as to assure that the work conforms to specified requirements, and will include:
 - 1. Ascertainment that electrodes used for manual shielded metal-arc welding and the electrodes and flux used for submerged arc welding conform to the requirements of this section.

2. Ascertainment that the approved welding procedure and the approved welding sequence are followed without deviation, unless specific approval for change is obtained from the Engineer.
 3. Ascertainment that the welding is performed only by welding operators and welders who are properly certified. The Testing Agency shall witness such qualification testing of welding operators and welders, as may be required.
 4. Ascertainment that the fit-up, joint preparation, size, contour, extent of reinforcement, and length and location of welds conform to specified requirements and the contract drawings, and that no specific welds are omitted or unspecified welds added without approval of the Engineer.
- F. Welder Identification: Assign an identifying symbol or mark to each person installing welded connections; identify all shop and field connections so that the inspector can refer to the person making connection.
- G. Shop Welds: The Testing Agency shall perform tests in the fabricator's shop as follows:
1. All welds: 100% visual.
 2. All partial or full penetration groove welded connections and splices: 100% ultrasonic.
 3. All other welds: 10% magnetic particle.
- H. Field Welds: The Testing Agency shall test field welds as follows:
1. All welds: 100% visual.
 2. All partial or full penetration groove welds: 100% ultrasonic.
 3. All other welds: 10% magnetic particle.
 4. Radiographic testing may be substituted for ultrasonic.
- I. Additional Testing:
1. If more than 10% of the tested welds are rejected, then an additional 10% of all such welds shall be tested using the same method. This 10% additional testing process shall be repeated until the rejection rate drops below one in 10.
 2. In addition, if defective welds are discovered, the remaining uninspected welds shall receive such ultrasonic or magnetic particle inspection as may be required by the Engineer.
 3. All costs of additional inspection and testing required by this paragraph shall be borne by the Contractor.

- J. Authority for Rejection: The welding inspector shall have the authority to reject weldments. Such rejection may be based on visual inspection where in the inspector's opinion the weldment would not pass a more detailed investigation.
- K. Reports: Reports by the Testing Agency's inspector shall contain, as a minimum, an adequate description of each weld tested, the identifying mark of the welder responsible for the weld, a critique of any defects noted by visual inspection or testing, and a statement regarding the acceptability of the weld tested, as judged by current A.W.S. standards. Reports shall be distributed as early as possible, but not later than one (1) work week after the tests have been performed. The Engineer shall be notified by telephone if, in the judgment of the inspector, test results require immediate comment.
- L. Bolted Connections: Visually inspect all bolted connections to ascertain that all bolts, nuts and required washers have been installed and are of proper type and that all faying surfaces have been brought into snug contact.
- M. Bolt Quality: Test random samples of each type of bolt with nuts and washers to verify compliance with respective ASTM requirements. Test two bolt assemblies (bolt, nut, and washer) from each barrel, keg, box, or other container delivered to site.

3.04 EVALUATION AND ACCEPTANCE CRITERIA

- A. Basis of evaluation and acceptance of work under this section shall be in accordance with the provisions of the Code of Standard Practice for Steel Buildings and Bridges and the following:
 - 1. All special inspections required by the governing building code and the Project Documents have been completed by the Independent Testing Agency with no deficiencies left outstanding.
 - 2. All items pertinent to structural steel construction listed in the Construction Deficiency Log must be resolved to the Architect's and Engineer's satisfaction with all outstanding Non-Conformance Reports completed and closed.

END OF SECTION

SECTION 11 81 29.13

ARENA RIGGING FALL PROTECTION

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Comply with the conditions of the Owner's Contract, Division 1 – General Requirements.

1.02 SECTION INCLUDES

- A. Fall protection systems and related appurtenances to protect the workers walking on the rigging access beams.

1.03 RELATED SECTIONS

- B. Section 01 33 00 – SUBMITTAL PROCEDURES
- C. Section 05 12 00 – Structural Steel Framing
- D. Section 05 50 00 – METAL FABRICATIONS

1.04 DEFINITIONS

- A. The following terms as included within this document, shall be construed to indicate the following. These terms are capitalized throughout this document.
 1. PROJECT – The final design, fabrication, supply, and installation of the fall protection system for the Alliant Energy Center.
 2. OWNER – The owner, owner's representative, leasing agent, property Management Company or other representative for the building on which the PROJECT is to be performed.
 3. CONTRACT – The contract formed between the Owner and the Contractor for the Project under consideration.
 4. CONSULTANT – ZS LLC, 10501 West Research Drive, Milwaukee, WI 53226, 414-727-5000
 5. SYSTEM DRAWINGS – Drawing package attached to this specification document as prepared by the consultant. The drawing package outlines the specifics of the Project, including equipment types and locations.
 6. CONTRACTOR – The Company, project manager or other representative under Contract with the Owner.
 7. MANUFACTURER – The Company responsible for the detailed design and fabrication of the individual equipment.

8. INSTALLER – The Company responsible for the on-site installation of the equipment.

1.05 REFERENCES

- A. Regulatory Requirements
 1. 29 CFR (OSHA) 1910 - Occupational Safety and Health Standards
 2. 29 CFR (OSHA) 1926 - Safety and Health Regulations for Construction
 3. ANSI Z359 Fall Protection Code – American National Standard for General Industry
- B. Material and Construction Specific (use the latest revision)
 1. AA ADM-1: Aluminum Design Manual; Aluminum Association
 2. AISC: Steel Construction Manual (LRFD)
 3. AWS D1.1: Structural Welding Code – Steel
 4. AWS D1.2: Structural Welding Code - Aluminum D. American Society for Testing and Materials (use latest revision)
 5. ASTM A36 Specification for Structural Steel.
 6. ASTM A53 (Grade B) Specification for pipe, Steel, Black or Hot-Dipped, Zinc-Coated, Welded and Seamless.
 7. ASTM A167 Specification for Stainless and Heat Resisting Chromium Nickel Steel Plate, Sheet and Strip.
 8. ASTM A276 Standard Specification for Stainless Steel Bars and Shapes.
 9. ASTM A123 Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 10. ASTM A193 Specification for Alloy-Steel and Stainless Steel Bolting Materials.
 11. ASTM A492 Specification for Stainless Steel Rope.

1.06 DESIGN REQUIREMENTS

- A. Design a fall protection system to allow safe work on the rigging access beams as per Occupational Health and Safety regulations. The fall protection system shall allow the user to walk uninterrupted the entire length of the system without having to unhook from the system to pass through intermediate support points and provide secure anchorage to arrest a fall by the user. All essential components shall be included as part of the above referenced system, though not specifically stated in the following Specifications, so as to provide a complete and fully operational system.

- B. System components to meet the requirements of this specifications Section 2.0.
- C. Design the horizontal lifeline systems to accommodate 2 users per cable sub-span simultaneously.
- D. All components of the horizontal lifeline system shall be designed to maintain a factor of safety of at least 2, relative to the dynamic forces generated by the falling workers.
- E. All components to be designed by a registered Professional Engineer licensed in Wisconsin. The Professional Engineer shall be experienced in the design of suspended access and fall protection equipment.

1.07 BID PROPOSAL SUBMITTALS

- A. General
 - 1. A minimum of three (3) hardcopies of any required submittals shall be sent to the Consultant. Additional copies may be required per the direction of the architect or engineer of record.
 - 2. The Consultant shall forward submittal copies as necessary for approvals.
 - 3. Proposal: Include with the bid proposal for analysis by the Owner the following:
 - a. Product Data: For standard manufactured products submit product data describing characteristics. All items that are uncertain before the equipment has been designed and which others must furnish should be described in this submittal.
 - b. Preliminary reactions on the structure from all components.

1.08 CONTRACT SUBMITTALS

- A. General
 - 1. Submit per Section 01 33 00 – SUBMITTAL PROCEDURES
 - 2. All contract submittals shall be reviewed and stamped by the contractor prior to submitting to the Consultant. Submittals not reviewed by the contractor prior to submittal will be returned without review by the Consultant and a resubmittal will be required.
- B. Product Data
 - 1. General product data, such as marketing materials, with photos and general descriptions.
 - 2. Product testing report sealed by a professional engineer
 - 3. Instructions and guidelines on use

4. Installation instructions and guidelines
 5. Maintenance tasks with recommended intervals
- C. Drawings
1. Prior to fabrication, submit scaled shop drawings showing layout, profiles and product components, including anchorage, accessories and finish, along with general arrangement of the equipment and their working positions. Shop drawings to be sealed by a Professional Engineer licensed in Wisconsin.
 2. Drawings to include materials, dimensions, hardware, design loads, electrical requirements, and general fabrication notes.
- D. Test Reports
1. Certified test reports showing compliance with specified material characteristics and physical properties.
- E. Calculations
1. Calculations for the equipment shall be submitted for the Consultant's record and be sealed by a Professional Engineer licensed in Wisconsin.
- F. Testing
1. Shop load tests shall be conducted on each representative equipment type and design. Tests shall be constructed as field replicated conditions and materials.
 2. The test procedure and results shall be reviewed and approved by a registered Professional Engineer licensed in the state where the system is installed and used permanently.
 3. If there are documented test results existing that meet the criterion for the product(s) being provided by the manufacturer, additional product testing for this Project shall not be necessary. This does not include or pertain to post-installation testing.
 4. The test procedure and results shall be made available upon request.
- G. Close-Out Documents
1. As-built drawings showing the location of all equipment with associated identification numbers. Drawings to include dimensioned layout in a plan view and elevation view noting any deviation from the supplied System Drawings. Include in the as-built drawings, wiring diagrams showing all electrical connections of equipment with a legend sheet.
 2. Certificate of Compliance signed by manufacturer certifying system complies with specified performance characteristics and criteria, and applicable codes.

3. Documentation provided by a CWI (certified weld inspector) registered with AWS for any field welding performed during installation.
4. Laminated signs for each wire rope ladder access location showing the locations and intended use of the equipment that may be accessed by that location. Per Owner request, the text may be required to be in Spanish as well as English.
5. Operation and Maintenance Manuals: Submit 3 sets of the Operation and Maintenance Manuals that are bound and neatly labeled describing operation and maintenance of all equipment installed; include:
 - a. Methods for maintaining installed products
 - b. Precautions against cleaning materials and methods detrimental to finishes and performance.
 - c. A detailed rescue plan.
 - d. Three (3) copies of the warranty documents specified.
 - e. A sample inspection log for Owner's use in recording inspections; include recommended list of daily, weekly, periodic, and biannual inspections.

1.09 SCHEDULING, ACCESS & COORDINATION

A. Scheduling

1. All activities to be performed on-site shall be coordinated with all other parties. All deliveries, installation activities, and access shall conform to the Project's required schedule.
2. Any additional charges or circumstances that are deemed necessary for non-business hours activities, expedited schedules, or other scheduling requirements shall be determined in advance and shall be incorporated into the initial bid package.
3. Sequence with other work and comply with equipment manufacturer's written recommendations for sequencing construction operations.

- B.** Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer

1.10 QUALITY ASSURANCE

A. Qualifications

1. The suspended access and fall protection equipment shall be provided by a Manufacturer specializing in the design and fabrication of such equipment. The Manufacturer shall have a minimum of 5 years documented experience with said equipment.

2. Liability insurance
 3. The Manufacturer shall carry liability insurance on their products. Refer to the Owner's Contract for specific amounts and any additional requirements.
 4. The Installer shall carry liability insurance on their completed operations. Refer to the Owner's Contract for specific amounts and any additional requirements.
 5. The Installer shall be qualified by the Manufacturer to perform the installation for the specific suspended access and fall protection systems. The Manufacturer or the Manufacturer's provided documentation shall specifically identify the methods and techniques for installation.
- B. Required tests shall be made in the presence of the authorized representative of the Consultant.
- C. Regulations, Codes and Standards
1. All on-site operations shall comply with the following regulations, as applicable.
 - a. OSHA – 29 CFR 1910 "Occupational Safety and Health Standards"
 - b. OSHA – 29 CFR 1926 "Safety and Health Regulations for Construction"
 - c. State specific regulations and building code requirements
 - d. Local municipality specific regulations and building code requirements.
 2. Welding and welders
 - a. All welding and welders shall be performed and certified in accordance with AWS D1.1 and D1.2 as applicable.
 - b. All welders shall be pre-qualified by having an up-to-date welding certificate listing specific welding certifications. Copies of welding certificates shall be submitted to the Manufacturer, General Contractor and the project's Special Inspector (where required by local jurisdiction).

1.11 WARRANTY

- A. The Manufacturer shall warranty all fall protection equipment for a minimum of one calendar year from the date of final acceptance system certification letter.
- B. The Contractor shall warranty all completed attachments and installations for a minimum of one calendar year from the date of final acceptance system certification letter.

1.12 OPERATIONAL INSTRUCTIONS

- A. The fall protection equipment supplier shall instruct the Owner's representatives and selected user personnel in the proper usage of the equipment.
- B. Equipment training attendance certificates are to be issued by the equipment supplier to each of the Owner's Representatives and selected user personnel upon completion of training.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. The following Manufacturers provide products in compliance with this specification and applicable codes, standards, and regulations.
 - 1. Tractel Ltd., 1615 Warden Avenue, Toronto, Ontario, Canada, M1R 2T3, 1-800-465-4738
 - 2. Pro-Bel Enterprises Ltd., 765 Westney Road South, Ajax, Ontario, L1S 6W1, 800-461-0575
 - 3. Thaler Metal USA Inc., 3141 S. 28th Street, Milwaukee, WI 53215, 414-645-8400
 - 4. Spider / Saferworks LLC, 11222 Melrose Ave, Suite 100, Franklin Park, IL 60131, 847-455-6627
- B. Other Manufactures products may be substituted, once deemed equivalent or superior and approved by the Consultant. The Manufacturer to be substituted shall adhere to this document and the attached System Drawings.

2.02 MATERIALS

- A. General
 - 1. All structural components shall be constructed of stainless steel metal, hot dip galvanized carbon steel, or structural grade aluminum.
 - 2. All exposed components shall be constructed of materials appropriate to withstand weathering and environment effects.
 - 3. All attachment hardware shall be constructed of stainless steel.
 - 4. Dissimilar metals shall be protected from galvanic attack
 - 5. All materials shall have an ASTM designation or the equivalent Canadian standard designation.

6. Certified welders shall make all welds and the project's Special Inspector shall examine all welds by using means of non-destructive testing.
- B. Metal sections, plates and bars
1. Steels
 - a. All steel sections shall conform to one of the ASTM standards listed in section 1.5 of this document.
 - b. All carbon steel components having an exterior exposure shall be hot-dip galvanized in accordance with ASTM A123 having a minimum G75 coating grade.
 - c. All carbon steel components having an interior exposure shall receive one coat of standard shop primer from fabricator, additional coating required as specified.
 - d. All welding shall use electrodes with strength greater than or equal to 70,000 psi.
 2. Aluminum
 - a. All aluminum sections shall conform to one of the ASTM standards listed in section 1.5 of this document.
 - b. All aluminum components shall have a yield strength greater than or equal to 35,000 psi and shall have an ultimate strength greater than or equal to 38,000 psi.
 - c. All welding to aluminum components shall consider the weakening effects of the welding process or shall be properly heat-treated to restore the original material properties.
 - d. Consideration shall be given to the effects of any cold-working of aluminum sections.
- C. Non-Metallic Materials
1. Non-metallic components shall not be load bearing and shall be located such to permit inspection and replacement.
 2. Non-metallic wear surfaces shall have inspection and replacement intervals listed in the maintenance literature provided by the Manufacturer.
- D. Fasteners
1. Structural (load-carrying) threaded fasteners
 - a. All bolts shall have material designation markings on the cap of the bolt.
 - b. All load-carrying threaded fasteners shall conform to ASTM A193.

- c. All threaded fasteners shall be new, clean and free of corrosion and pitting.

2.03 FALL ARREST SYSTEM PRODUCTS

A. General

1. The Fall Arrest System shall consist of a stainless steel safety cable attached to the structure with anchors at ends and intermediates points as required to meet the performance requirements. The cable shall be continuous or shall have swaged splices, which allow the user to pass without unhooking from the system.
2. The cable shall have stainless steel swaged end, swaged to the cable, at each end of the cable.
3. An energy absorber will be provided at one or both ends, if required by system analysis. Provide steel end brackets or anchors to attach the cable to the structure.
4. Support cable with stainless steel intermediate brackets designed to allow the user to pass without unhooking from the cable.
5. The system shall be designed to operate hands free and shall pass intermediate supports without disconnecting from the system.
6. The supports for the lifeline shall be attached to the anchors shown on the drawings.
7. The system shall be designed to support two workers per cable sub-span.
8. Signage label - Installation date, certification, usage and capacity information.
9. Provide two (2) lanyard cable runner with automatic bypass runner for continuous hands-free operation at each Horizontal Life Line.

PART 3 – EXECUTION

3.01 EXAMINATION

A. Preliminary

1. Examine all working surfaces and areas necessary to complete the Project. Communicate any of the following conditions to the Owner:
 - a. Unsafe conditions.

- b. Conditions which would be detrimental to timely and proper execution of Work
 - c. Dimensions or conditions which do not match the approved shop drawings.
 - d. Corridors, doorways, stairways or elevators that are of insufficient size to house items to be transported to Work areas and surfaces.
2. Verify site dimensions.
3. Commencement of Work will imply acceptance of all working areas and surfaces and the areas and surfaces necessary to gain access to those working areas and surfaces. Issues that may arise due to acceptance of unsatisfactory conditions shall be corrected with no impact or cost to the Owner.

3.02 GENERAL

A. Safety

1. All Work crews shall demonstrate safe practices and shall identify and discuss all potential safety issues.
2. All personnel shall be provided with necessary personal protective equipment (PPE) and shall utilize that equipment as necessary and as dictated by OSHA.
3. Any personnel observing unsafe practices of other crews or personnel shall:
 - a. Communicate these issues to the Owner and the General Contractor.
 - b. Instruct the violators to cease and desist Work tasks

B. Walking and Working Surfaces

1. All personnel shall conform to the Owner's requirements for floor finish protection in any areas that may be accessed.

C. Protection of Finishes

1. Contractor shall protect or guard any architectural components and finishes that may be encountered.

D. Professionalism

1. All personnel shall demonstrate general professionalism and courtesy while on-site.

E. Dress Code

1. All personnel shall wear apparel that indicates the company they represent.

3.03 DELIVERY, TRANSPORTATION AND STORAGE OF MATERIALS

A. Delivery

1. Materials shall be delivered to the building per the Owner's schedule (see section 1.9) and at the locations specified by the Owner.

B. Transportation

1. Materials shall be transported by hand or by carts to the Work areas using the corridors, stairwells and elevators designated by the Owner.
2. The Contractor shall be responsible for all manpower required during equipment hoisting, and shall also be responsible for coordinating the location of his equipment on the roof as required so as not to interfere with other roof construction.

C. Storage

1. Materials shall be stored at Owner designated locations, but shall not be stored in a fashion in which the following conditions may occur:
 - a. Overloading of floor structures
 - b. Exposure to inclement weather
 - c. Damage to any of the products to be installed

3.04 INSTALLATION

A. General

1. All Work shall achieve a true, level, plumb, tight-fitting and flush condition as applicable.
2. All Work shall conform to the standards listed in sections 1.5 and 1.10 of this document.
3. Install all equipment and components in strict accordance with the approved shop drawings and at such time as approved when construction and finish of adjoining work will permit and in sufficient time to avoid delays to the construction process.

B. Locating of Fall Protection Systems

1. Equipment to be located as shown on the approved shop drawings.

2. Any discovered conditions which would prevent the equipment from being located as shown in the shop drawings shall be communicated to the Consultant and the Owner.
- C. Fastening
1. All threaded fasteners shall be tightened to a minimum of a “snug-tight” condition if a tightening torque has not been specified. Never exceed the torque recommendations of the Manufacturer.
 2. All threaded fasteners shall be provided with one of the following means to lock the fastener and prevent loosening.
 - a. Locking nuts
 - b. Cotter pins
 - c. Mechanical disabling/deforming of threads
 - d. Tack welding

3.05 END-OF-DAY PROCEDURES

- A. Waste
1. All waste materials shall be bagged and either disposed of into Owner’s designated bins or stored in Owner designated areas.
- B. Tools
1. If tools are to be left on-site they shall be organized and presentable, and left in an Owner designated area.
- C. Housekeeping
1. All areas in which Work has been performed shall be cleaned and shall resemble the state in which they were found.

3.06 FIELD QUALITY CONTROL

- A. Inspection
1. Work shall not commence beyond the point at which municipal building authorities require (if necessary) until the inspections have been performed and the satisfactory results are achieved.
 2. An AWS certified weld inspector (CWI) or the project’s Special Inspector (who is certified to inspect welds) shall be present for all field welding.
- B. After the safety system is installed and properly tensioned, the safety system manufacturer’s approved authorized representative shall inspect and shall make all final adjustments for proper operation.

- C. After the system has been placed in operation, the manufacturer's authorized representative shall issue a certificate attesting to the system's design and installation.

3.05 FINAL ADJUSTING, INSPECTION AND DEMONSTRATIONS

- A. Final Inspection
 - 1. The Contractor shall perform the final inspection in the presence of the Owner or a representative of the Owner.
 - 2. Any observed issues shall be corrected in a timely manner.
- B. Demonstration
 - 1. At a time mutually agreeable to all parties, conduct operational demonstrations for the Owner and/or the Owner's representative and the Consultant, after completion of the operational tests as agreed to in the Contract.

END OF SECTION

SPORTS AND EVENT LIGHTING SYSTEM SCOPE DESIGN NARRATIVE
26 01 01

Basis of Design

The sports and event lighting will provide suitable LED lighting for events such as national broadcast of NCAA sports such as hockey and basketball, Horse Fair, CrossFit Games and similar events. The extent of the work is limited to that required to provide new sports lighting of the main event floor and provide control and dimming of the existing house lighting above the seating areas surrounding the arena.

The system configuration will include stationary trusses for mounting all new lighting fixtures. All lighting system power, LED drivers, controls cabinets and other system equipment shall be located on a new platform for full accessibility at the catwalk level above the main event floor. Dimming for the existing house lighting shall be located at the existing house lighting panels. See structural drawings for structural modification being provided by others.

The document is based on using Musco Lighting and ETC controls. Scope lighting design documents by Musco are included with these documents for reference. Musco contact is Nathan Johnson, (641) 673-2721, nathan.johnson@musco.com Equals to Musco or ETC must be pre-approved, any submission for approved as equal must include a complete design of lighting, power and control for consideration.

Technical support for lighting system and control system must be available 24/7 with onsite tech support within 24 hours.

The existing emergency egress lighting system is totally standalone from all house and event lighting. As such no modifications are required as part of this project.

Additional requirements are included in Section 26 09 25 Advanced Lighting Control, Section 26 50 03 Arena Lighting Equipment included with these documents.

All design drawings, calculations and equipment shall be submitted for owners' review and approval prior to project start.

1. Applicable Codes, Guidelines and Standards

IES	Illumination Engineering Society
NCAA	Best Lighting Practices
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
IEEE	Institute of Electrical and Electronics Engineers
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NETA	National Electrical Testing Association
NFPA	National Fire Protections Association
NIST	National Institute of Standards & Technology
UL	Underwriters Laboratories, Inc.

2. Design Criteria

- a. Light levels and uniformity shall be based on a 10' x 10' calculation grid 36" above the playing surface. Criteria shall be suitable for national broadcast of NCAA play or as noted.
- b. The following are the basic light level requirements:

	Horizontal	Vertical	Uniformity (Max./Min.)
Basketball			
National Championship	125 fc	125 fc	1.5:1
National Broadcast	100 fc	100 fc	1.7:1
Regional Broadcast	80 fc	75 fc	2:1
Intercollegiate	80 fc		
Hockey			
National Championship	125 fc	125 fc	1.5:1
National Broadcast	100 fc	100 fc	1.7:1
Regional Broadcast	100 fc	75 fc	2:1
Intercollegiate	100 fc		
Volleyball			
National Championship	125 fc	125 fc	1.5:1
National Broadcast	100 fc	100 fc	1.7:1
Regional Broadcast	80 fc	75 fc	2:1
Intercollegiate	80 fc		
CrossFit Competition			
National Championship	125 fc	100 fc	1.5:1
National Broadcast	100 fc	100 fc	1.7:1
Regional Broadcast	80 fc	75 fc	2:1
Animal Shows	50 fc	30 fc	3:1
Trade Shows	30 fc		3:1
Walk In 1 (Complete House)	15 fc		3:1
Walk In 3 (Complete House)	5 fc		3:1
Concert House (Stage North)	5fc (with black out areas)		3:1
Concert House (Stage South)	5fc (with black out areas)		3:1
Event Set Up	30 fc		3:1

- c. Lighting color temperature shall be 5700K with a CRI of 75 min.
- d. Direct and reflected glare must be minimized for both viewing angles and camera angles. A fixture with an output of no more than 40,000 lumens is recommended to reduce glare.
- e. Main Camera Positions

All camera locations indicated are the distance from the event floor. Playing surfaces are located central to the event floor for most events.

- 1 4 camera positions are located 2 on each side of the event floor approximately 30' from the floor and 12' above the floor. These positions are 10' -20' either side of center court.
- 2 1 camera position is above the east press box, approximately 80' from the floor and 57' above the floor to allow a clear view over the hockey backboard.
- 3 1 camera position is above the west press box, approximately 80' from the floor and 57' above the floor to allow a clear view over the hockey backboard.
- 4 2 camera positions are located behind the goals at the edge of the floor and 30' above the floor

3. Design Load:

The design lighting load is approximately 75 kW. This includes existing house lighting remaining in place which will be rewired to the new lighting system.

4. Equipment Sizing:

Lighting Circuit Load Calculations

a. Installed wattage x 1.25

b. Demand Factor

Lighting

100% of total wattage

c. Equipment Sizing and Material Criteria

1. Raceway

Minimum conduit size: ¾"

EMT conduit will be used throughout the project for conduit sizes from ¾-inch up through 4-inch.

All Conduit Fittings shall be steel compression type.

Flexible conduit will be used for wiring to any equipment producing vibration.

Outlet boxes will be minimum 4-inch, square or octagonal.

Pull and junction boxes will be sized per NEC and will be steel with painted enamel finish.

All raceway will be painted to match surface where mounted.

2. Wire

All line voltage wire and cable will be Type THWN, copper, 600V rated, minimum size #12 for all power wiring.

Control wiring will be Type THWN, 600V rated, minimum size #14. Type of wire for communications systems will be as recommended by the manufacturer.

5. Grounding

10-ohm resistance max.

6. Panels

All panel-boards shall be circuit breaker type suitable for the system voltage, phase and network intended as manufactured by the Square D.

5. Lighting Control

1. System Description

The system shall provide control of all scenes and allow for onsite programming and scene modification via a touch screen controller in the lighting booth and multiple wireless touch screen tablets. A DMX gateway will be provided for wired and wireless control of all system presets including direct DMX wired control via plugging in a touring company DMX lighting control board. Additional scene control is required by a manual push button station at the arena level and mobile devices.

Scenes shall be capable of control events such as preprogrammed timed on/off, available daylight and astronomic clock.

System shall be expandable to allow for future control of all concourse and public areas as well as all facility lighting. This shall include scenes as well as automatic control based on occupancy and available daylight.

The system head end shall be provided with UPS back up providing 90 minutes of power to system.

Limited theatrical lighting such as Light Chase and Wave effects shall be possible.

Provide On/Off control of three existing Cage Spot Light groups. Each Cage Spot Light location includes 4 spot lights which are 7 amps per spot light.

Provide On/Off Control of existing Suite lighting. Suite Lighting is currently controlled via switches in the lighting booth.

Provide On/Off control of existing advertiser signage at each quadrant of

the arena floor.

2. Design Criteria

The system shall be preset based with timed fades between presets and instant blackout from any preset. Presets for each event type listed in the lighting design criteria shall be provide as part of this project. All presets shall be storable using alpha numeric naming. The system shall have unlimited capacity for future preset creation and storage.

3. Level Control

Lighting levels shall be met by combination of on/off control and 25% - 100% dimming of fixtures. Positive on/off control shall be provided via contactors or relays for all lighting circuits.

4. Control Stations

All touch screen control stations shall have password protection and assignable access levels. Access levels shall allow for basic scene selection access to full scene creation and real-time modification/programming and storing of system control and set up.

The main control shall be via a large touch screen controller in the existing lighting control booth.

One 10 button scene selection control station will be located at the north Arena Concourse corridor. This shall replace the existing lighting control station at this location. This shall be provided with custom labels for each button.

Four Wireless, Wi Fi enabled touch screen tablet style controllers, will be provide for use by staff during programming events and to allow clients control over system presets.

Direct DMX access shall be provided for touring company direct wired connection to DMX control. This shall also have controlled access and not allow overwriting any facility presents or configurations. Connection of touring company DMX lighting control board to the system shall include a drop cable to serve any location on the arena floor, approximately 300'.

Duplicate System Control software as that at the main lighting control booth shall be provided on one existing AEC laptop and the exiting electrical shop PC.

Limited control from exiting smart devices shall be provided via the owners' local area network. These shall provide basic selection of 8 scenes.

6. Existing House Lighting

a. System Description

The existing house lighting which will remain in place consists of two outer rings of dimmable fluorescent lighting circling the seating areas. The outer most ring is mounted to the dome structure the inner ring is hung from the circular catwalk. These fixtures contain dimmable 120V fluorescent ballast. These fixtures shall be provided with new dimming and control via the new control system. The existing house lighting dimmers and controls will be demolished in their entirety.

New sport lighting fixtures will provide additional event floor house lighting as needed for events like concerts requiring walk in lighting.

b. Design Criteria

Existing circuiting will be used to the extent possible and be rewired to the new system. Some re-wiring will be required to match existing house lighting circuits to new house lighting control zones.

All wiring shall be in conduit.

7. Existing Normal Power System

a. System Description

Ample power is available at the existing catwalk level above the arena floor. A new 400A 208Y/120V 3ph, 4w panel to serve the new lighting system will be provided and connected to an existing 600A feeder which serves a panel located at the catwalk. This existing feeder currently serves loads which will be removed during demolition.

b. Design Criteria

Normal power is 208Y/120V 3ph, 4W.
All wiring shall be in conduit.

8. Demolition

- a. The existing lighting system shall not be permanently taken out of service until the new system is fully operational and accepted by the owner.
- b. All copper, (wire, power drops, etc) removed shall remain property of the owner. Coordinate where and how copper shall be stored on site with owner. All other demolition materials shall be removed by the contractor.
- c. Electrical demolition of the following includes disconnection of equipment and removal of all conduit and wire to source panel. Demolition of trusses and equipment will be by others.
 - 1 All lighting on 8 Existing light truss structures.
 - 2 16 lighting power reels.
 - 3 16 truss hoists.
 - 4 4 existing 60A and 4 existing 90A event floor power drops located in the catwalks above the event floor.

- d. Demolition of the following includes complete demolition of equipment and removal of all conduit and wire to source panel.
 - 1 All existing sport lighting and house lighting attached to catwalks above the event floor.
 - 2 Existing dimmer equipment and controls including the rack equipment in the Second Concourse Equipment Room and control stations located in the lighting control booth and arena floor north outer corridor. Reconfiguration of the dimmer feeders will be required to maintain service to existing panels served by existing feeders.

9. Structural Coordination

- a. All new lighting equipment cabinets for control and fixture LED drivers shall be located on the new equipment platform being provided. Any equipment, suspension points, cable routes, etc. mounted to the structure require design by the structural consultant. All structural work is part of general construction. No conduit or equipment shall be mounted to the existing catwalks. Conduit supports shall be supported from the roof structure and approved by the structural engineer. The lighting supplier shall coordinate all electrical equipment requirements, weights, sizes, locations, etc. with the structural engineer.
- b. The structural engineer is Ryan Larson of ZS Engineering, 10501 West Research Drive, Suite 207, Milwaukee, WI 53226, Phone 414 727 5000

10. Owner Training

- a. Provide sufficient training so the owner knows how to operate and program the system as well as understands system components, system architecture and maintenance procedures.
- b. Training shall take place before the contractor and system manufacturer representative is off site and again 2 months after substantial completion to support the owner in ongoing operations and answer questions.
- c. Tech support shall include one on site tech support during an event. Event shall be as chosen by the owner.
- d. Remote tech support by the manufacturer shall be provided 24/7/365 allowing remote access of the system in support of AEC staff during events.

11. Commissioning and Record

- a. Maintain records of all system components and locations. Provide final electronic record documents in AutoCAD format and two sets of hard copies of record documents.
- b. Provide verification measurement of all scenes. Include up to eight fail safe scenes which can be easily recalled in the event of a system or network outage. Coordinate failsafe modes required with owner.
- c. Maintain records of system verification items such as installation checklists, tests, field measurement of all scenes, function of all controllers, etc.
- d. Provide final testing to verify the system meets all project requirements per this basis of design. A written test record shall be included.
- e. All data shall be compiled and provided along with shop drawings in final

Operation and Maintenance manuals.

12. Warranty

10-Year Warranty: Each manufacturer shall supply a signed warranty covering the entire system for 10 years from the date of shipment. Warranty covers all parts and labor expenses for 10 years. Manufacturer shall cover the cost of lift rental to access fixtures and provide proper floor protection if fixtures cannot be accessed from a catwalk. Warranty work shall be completed per the owners' request using factory trained technicians. Manufacturer shall maintain financial reserves to assure fulfillment of the warranty for the full term. Warranty shall also include all communication costs for the remote diagnostic system. Warranty may exclude fuses, vandalism, abuse, unauthorized repairs or alterations, and acts of God/nature (including but not limited to: earthquake, flood, typhoons, hurricanes, or lightning).

13. Additional Documentation

See Specification sections:

Section 26 09 25 Advanced Lighting Control & Arena Lighting Equipment 26 50 03

See Drawings:

E100, E101, Musco Preliminary Design and fixture documentation.

**Advanced Lighting Control
26 09 05**

1.01 GENERAL

- A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.
- B. The purpose of these specifications is to define the performance and design standards for the project. The manufacturer / contractor shall supply control equipment to meet or exceed the standards set forth by the criteria set forth in these specifications.
- C. The system provided must be suitable for all uses identified in the Basis of Design Document.
- D. These specifications are based on lighting equipment provided by Electronic Theatre Controls (ETC). Other manufacturers will be considered and must be approved prior to bid.
- E. All equipment must be fully compatible with lighting equipment specified in Section 26 50 03 Arena Lighting Fixtures.

1.02 SUBMITTAL REQUIREMENTS

- A. Provide a complete submittal package for approval as required by Division 1. Special manufacturing to meet the standards of this specification may be required. Qualified manufacturers must have at least a minimum of 10 years experience lighting controls for entertainment/sports lighting.

1.03 CENTRAL LIGHTING SERVER

- A. The Architectural Control Server shall be the Unison Paradigm Central Control Server (P-CCS) as manufactured by Electronic Theatre Controls, Inc. (ETC), or equal. Proprietary names in this specification are those of ETC.
 - 1. Connections shall be made between lighting system components over standard Ethernet distribution systems using 10/100BaseT.
 - 2. The server shall be tested to UL standards and labeled ETL Listed
 - 3. The server shall be RoHS Compliant (lead-free)
- B. Mechanical
 - 1. The Central Control Server (P-CCS) assembly shall be designed for use with Unison Paradigm Series Control Systems.
 - 2. User Interface
 - 1 The P-CCS power button shall be backlit for use in low-light conditions.
 - 3. The P-CCS shall provide a Universal Serial Bus (USB) port on the front panel for transfer of configuration data.
 - 4. The P-CCS shall provide rear-panel connections for (2) RJ45 jack for Ethernet connection to the processor for configuration, Virtual Touchscreen (VTS) and web-browser-based system access.

Advanced Lighting Control
26 09 05

5. Architectural Lighting System configuration and program information shall be stored in solid state memory, which does not require battery backup.
 - 1 The P-CCS shall provide a hard drive for storage of system configurations.

C. Electrical

1. The P-CCS shall support 100-240VAC power input and utilize an external transformer power supply
2. The P-CCS shall allow for nearly silent operation
3. The server shall utilize microprocessor based, solid state technology to provide multi-processor lighting and building control
4. The server shall provide two IEEE802.3u Ethernet connections for 100BASE-TX communication with the lighting control system
 - 1 The Primary Ethernet port shall be reserved for connection to the lighting control system
 - 2 The Secondary Ethernet connection shall be used for interface with BACnet IP enabled building systems
 - 3 Both Connections shall support Virtual Touchscreen (VTS) functionality
5. Following a loss of power, the P-CCS shall return to its previous power state upon power being restored

D. Environmental

1. The ambient operating temperature shall be 0° to 40°C (32° to 104°F)
2. The storage temperature shall be -40° to 70°C (-40° to 158°F)
3. The operating humidity shall be 5% - 95% non-condensing

E. Functional

1. Capacity
 - 1 Shall support up to 48 Paradigm Architectural Control Processors (ACP)
 - 2 Shall support up to 12 individual projects
2. System
 - 1 Shall support multi-user LiveControl and LiveEdit simultaneously
 - 2 System shall support the use of Network Time Protocol for real time clock synchronization
 - 3 System shall support remote firmware upload over an Ethernet connection from a connected PC running the LightDesigner software
 - 4 Failure of a single Processor shall not prohibit continuing operation of the remaining connected system
 - 5 Shall log system error messages using Syslog

Advanced Lighting Control
26 09 05

- 6 The server shall support ANSI E1.17 Architecture for Control Networks (ACN)
 - 1 Servers that do not support ANSI E1.17 shall not be acceptable
- 7 The server shall support ANSI/ ASHRAE BSR135.1 BACnet IP protocol.
 - 1 Servers that do not support BSR135.1 shall not be acceptable
3. Diagnostics
 - 1 Shall output an Event log using Syslog format
 - 2 Standard log shall store a fixed-length history of recent activity
 - 3 Separate critical log shall only store important messages (such as boot-up settings)
4. Configuration Data
 - 1 Configuration Data can be uploaded over an Ethernet connection from a PC running the LightDesigner application
 - 2 Configuration Data can be retrieved from any connected Paradigm Processor
 - 3 Configuration Data may be loaded to and from removable media (USB) access provided on front panel
 - 4 Configuration Data for the entire System shall be available for download from any Processor or Central Server
 - 5 Configuration Data shall be stored on solid-state media
5. Scalability
 - 1 Adding additional Processors to a Server System shall proportionately increase its overall capabilities up to a maximum System size
 - 2 The maximum number of Processors configured as a single System shall be at least 12.
 - 3 The maximum number of Paradigm Processors supported by a single Server configuration shall be at least 48
 - 4 Multiple Processors shall utilize the Ethernet network to remain time synchronized and share control information
 - 5 Multiple Processors shall utilize the Ethernet network to maintain configuration data synchronization as modifications are made
 - 6 It shall be possible for multiple Systems to coexist on the same physical network with logical isolation between Systems
 - 7 Shall provide building management interface separate from the Lighting Network using BACnet IP
 - 1 Shall allow for system Timed Event scheduling from another device
 - 8 Shall allow remote use of the customized Virtual Touchscreen Application (VTS)
6. Web User Interface
 - 1 Shall be an internal web server accessible via the primary Ethernet port

Advanced Lighting Control
26 09 05

- 2 Shall support common web browsers on Windows and Mac OS platforms
 - 3 Shall provide functionality to Activate and Deactivate Presets
 - 4 Shall provide functionality to schedule timed events (add/delete)
 - 5 Shall display status information
 - 6 Shall display log files
 - 7 Shall allow for configuration of Processor settings (date, time)
 - 8 Shall allow for upload and download of configuration data
 - 9 There shall be links to other web-enabled devices in the System, including other Paradigm Processors
7. Virtual Touchscreen Stations
- 1 A Virtual Touchscreen (VTS) interface shall be supported from the Central Control Server.
 - 2 General
 - 1 Virtual Touchscreen stations shall support default and fully graphical control pages.
 - 2 The Virtual Touchscreen station shall operate using graphic buttons, faders and other images with support for at least 30 separate programmable control pages.
 - 3 Virtual Touchscreen stations shall also allow programming of page pass-code, lock out and visibility levels.
 - 3 Functional
 - 1 System
 - 1 The Virtual Touchscreen shall support configuration firmware upload from a Paradigm Central Control Server as proxy
 - 2 The Virtual Touchscreen shall support client application download from the Paradigm Central Control Server
 - 3 A minimum of 48 Virtual Touchscreens Stations shall be supported for the Central control Server
 - 4 Virtual Touchscreens shall support user configurable resolutions up to 1080 HD (1920 x 1080)
 - 5 Virtual Touchscreen Station shall support configuration form ControlDesigner Software
 - 2 Operation
 - 1 The Unison Paradigm Control System shall be designed to allow control of lighting and associated systems via Virtual Touchscreen controls. System shall allow the control of presets, sequences, macros and time clock events.
 - 2 System macros and sequences shall be programmable via LightDesigner system software.
 - 3 System time clock events shall be programmable via the Virtual Touchscreen, LightDesigner system software, the processor user interface, or the internal web server.
 - 4 Time clock events shall be assigned to system day types. Standard day types include: anyday, weekday, weekend, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday. System shall support programming of additional custom or special day types.

**Advanced Lighting Control
26 09 05**

- 5 Time clock events shall be astronomic type activated based on sunrise, sunset, time of day or periodic event. System shall automatically compensate for regions using a fully configurable daylight saving time.
- 6 System shall support color changing fixtures providing Hue, Saturation and Brightness (HSB) color selection.
 - i. Be provided with a default layout that requires no user configuration
 - ii. Provide RGB faders in addition to the default HSB color wheel for color selection
 - iii. Shall allow for numerical value input in addition to color wheel and fader control
 - iv. Shall be compatible with color mixing systems that use up to seven discrete color control channels
- 7 Virtual Touchscreen stations shall be designed to operate standard default or custom system functions. Components shall operate default functions unless re-assigned via LightDesigner, the Windows-based configuration program.
 - i. Optional button functions include: preset selection, manual mode activation, record mode activation, station lockout, raise, lower, macro activation, and cue light, or room join/separate.

1.04 PROVIDE SUPPORT FOR OPTIONAL FADER STATIONS.

- A. The Architectural Control Processor shall be the Unison Paradigm P-ACP Series Control Processor as manufactured by Electronic Theatre Controls, Inc., or equal.
- B. The processor shall utilize microprocessor based, solid state technology to provide multi-scene lighting and building control.
 1. ACP shall support functions such as station programming, macro sequencing, electronic lockout, room combine, astronomical time clock events, master control, individual channel control and fade rate. ACP station processor shall allow configuration of the control system via the menus. See software section for additional system details.
 2. When used in a dimming enclosure, the ACP shall allow access to dimming control menus including the status screen, dimming configuration screen, backup menu, test menu and configuration menu.
- C. One ACP shall be rated to drive 1024 channels of control, 1024 zones, 64 rooms, 512 presets, 62 button or button/fader stations and 6 Touchscreen Stations
- D. ACP module electronics shall be convection cooled.
- E. The ACP shall provide front-panel RJ45 jack, Secure Digital (SD) card slot, and Universal Serial Bus (USB) Port for configuration and data exchange.
- F. Architectural Lighting System configuration and program information shall be stored in flash memory, which does not require battery backup.
- G. The ACP shall be contained in a plug-in assembly and require no discrete wiring connections; all wiring shall be terminated into Dimming or Control Enclosure.
 1. The ACP shall support the following communications:

**Advanced Lighting Control
26 09 05**

- 1 Echelon LinkPower
- 2 10/100BaseTX, auto MDI/MDIX, 802.3af compliant Ethernet networking with TCP/IP, ESTA BSR E1.17 Advanced Control Networks (ACN) and ESTA BSR E1.31 (sACN) Protocols
- 3 EIA-232 serial protocol
- 4 ESTA DMX512A, configurable as input or output ports
- 5 Dry contact closure inputs

1.05 CONFIGURATION AND CONTROL SOFTWARE

A. System Configuration

1. The Unison Paradigm LightDesigner software program shall be an application software package that facilitates off-line Unison Paradigm control system configuration. LightDesigner shall also enable a computer to be connected on-line with a Unison Paradigm lighting control system for real time preset selection, editing and recording.
 - 1 Software setup shall include Configuration and Space (Room) Wizards, Zone, Preset, Sequence, Station and Wall Properties, Touchscreen Station Setups, Time clock Events and Macros.
 - 2 The software program shall be supplied complete with Operators Manual and software disk.
2. Functions
 - 1 System program shall support a graphic display of individual rooms, showing zones, presets, control stations and moveable wall placement. Systems with non-graphic displays shall not be acceptable.
 - 2 Software shall support the programming and operation of multi-sectioned rooms with moveable partitions.
 - 3 LightDesigner shall support the programming of station and component electronic security.
 - 4 LightDesigner shall support the transfer of architectural system configurations to processors via Secure Digital (SD) Cards, USB Flash Drives, or Ethernet.
2. Zone, Preset, Station and Wall Properties
 - 1 LightDesigner shall support the configuration of system zone properties. Configurable zone properties shall include zone name, input mode, dimmer to zone patch, and maximum and minimum zone levels.
 - 2 LightDesigner shall support the configuration of system-preset properties. Configurable preset properties shall include preset name and fade time. Presets shall have a discrete fade time, programmable from zero to 86,400 seconds with a resolution of one hundred milliseconds.

Advanced Lighting Control
26 09 05

- 3 LightDesigner shall support the custom programming of control station buttons and faders. Button function assignments shall include Preset (last action, pile on, or toggle), Off, Manual, Zone, Record, Raise, Lower, Wall (toggle or direct) Lockout (toggle or direct), No Action, and Macro. Button properties shall include Lockout Level and Legend. Fader assignments shall include Zone, Preset, Master, and Fade time. Fader properties shall include Lockout Level and Legend.
- 4 LightDesigner shall support the combining or separating of adjacent divisible spaces.
- 3 Time clock Events and Macros
 - 1 LightDesigner software shall support the programming of Astronomical Time Clock (ATC) events for up to ten standard day types and up to 24 custom day types. ATC events include selection of presets or macros. ATC events shall be triggered by sunrise, sunset, time of day and/or periodically.
 - 2 LightDesigner software shall support the programming of multifunction macro sequences. Macros shall be activated via buttons on any Unison station, or via time clock event.

B. Touchscreen Station Configuration

1. The Unison Paradigm ControlDesigner software program shall be an application software package that facilitates off-line Unison Paradigm Touchscreen station configuration.
 - 1 Software setup shall include Configuration and Design Wizards, to create a graphical representation of a control environment.
 - 2 The software program shall be downloadable from the manufacturer's website free of charge.
2. Functions
 - 1 Touchscreen Setup shall include standard or custom control pages. Standard page types shall include zone, preset, wall, or security.
 - 2 Each page may contain graphic objects including buttons, straight or curved faders, and other graphic controls. Pages may also contain imported bitmap images, pop-up windows, animations, numeric keypads, tabs, and clocks.
 - 3 Object Assignments shall include any Action assignable within the System.
 - 4 It shall be possible to adjust LCD contrast and brightness. It shall also be possible to program the station to dim to any level during periods of inactivity.

1.06 MAIN TOUCHSCREEN CONTROL STATION

- A. The Touchscreen Control Stations shall be the Unison Paradigm 18" Touchscreen P-TS18 Series Control Stations by Electronic Theatre Controls, Inc., or equal. This station shall be located in the existing lighting control booth.
- B. General
 - 1 Touchscreen stations shall support fully graphical control pages.

Advanced Lighting Control
26 09 05

- 2 The Touchscreen station shall operate using graphic buttons, faders and other images on at least 30 separate programmable control pages.
- 3 Touchscreen stations shall also allow programming of page pass-code, lock out and visibility levels.

C. Mechanical

- 1 Touchscreen stations shall consist of an eighteen and one-half inch, backlit liquid crystal display (LCD) with a minimum resolution of 1366 by 768 pixels and 24-bit color depth with a touch interface.
- 2 Touchscreen bezels shall be constructed of ABS plastic and shall have no visible means of attachment.
- 3 The Touchscreen shall have a capacitive touch overlay over the display.
- 4 The Touchscreen shall support tabletop, wall mount and 19" rack mount mounting.

D. Electrical

- 1 Touchscreens shall be powered by a 12-volt external power supply. The external power supply shall support 120-240 VAC power input.
- 2 Touchscreens shall connect to the System using an Ethernet network.

1.07 ETHERNET NETWORK

- 1 Ethernet network shall be 10/100BaseTX, auto MDI/MDIX.
- 2 Network shall utilize Unshielded Twisted Pair (UTP) Category 5 wiring.

B. Function

- 1 System
 - 1 The Touchscreen shall support configuration firmware upload from a Paradigm Central Control Server
 - 2 The Touchscreen shall support configuration or firmware upload from local removable USB media
2. Setup Mode
 - 1 There shall be a setup display that is separate from any user-defined configuration
 - 2 It shall be possible to view and modify connectivity settings
 - 3 It shall be possible to view status information
 - 4 It shall be possible to view and modify Touchscreen screen settings
 - 5 It shall be possible to view and modify audio settings
 - 6 The appearance of the setup display shall be standard and not editable
 - 7 The setup display may be invoked from within the user-defined configuration
3. Configurations
 - 1 It shall be possible to have multiple configurations stored within a touchscreen Station

Advanced Lighting Control
26 09 05

- 2 Only one configuration may be active on the touchscreen Station
 - 3 It shall be possible for Touchscreen Stations connected via the Echelon® Link power network to select a configuration automatically based on the configuration of the physical connection.
 - 4 Where multiple configurations are stored there shall be a boot menu to allow selection of a configuration
 - 5 Each configuration shall be identified as a different Station within the System
4. Operation
- 1 The Touchscreen shall provide interaction with the lighting system using the Paradigm Central Control Server (P-CCS) as an interface.
 - 2 The Unison Paradigm Control System shall be designed to allow control of lighting and associated systems via Touchscreen controls. System shall allow the control of presets, sequences, macros and time clock events.
5. System presets shall be programmable via Button, Button/Fader, Touchscreen, or LightDesigner software.
- 1 Presets shall have a discrete fade time, programmable from zero to 84,600 seconds with a resolution of one hundred milliseconds.
 - 2 Presets shall be selectable via Touchscreen stations.
6. System macros and sequences shall be programmable via LightDesigner system software.
- 1 Macro and sequence steps shall provide user selectable steps, and allow the application of conditional logic.
 - 2 Macro and sequences shall be activated by button, time clock event or LightDesigner software.
7. System time clock events shall be programmable via the Touchscreen, LightDesigner system software
- 1 Time clock events shall be assigned to system day types. Standard day types include: any day, weekday, weekend, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday. System shall support programming of additional custom or special day types.
 - 2 Time clock events shall be activated based on sunrise, sunset, time of day or periodic event. System shall automatically compensate for regions using a fully configurable daylight-saving time.
8. A Color picker, supporting Hue, Saturation and Brightness (HSB) color selection shall be available for color selection of color changing fixtures and provide visual feedback of the current color produced by the associated fixture.
- 1 The color picker shall be provided with a default layout that requires no user configuration

Advanced Lighting Control
26 09 05

- 2 The Color Picker shall provide RGB faders in addition to the default HSB color wheel for color selection
 - 3 Color picker values shall allow for numerical value input in addition to color wheel and fader control
 - 4 The color picker shall be compatible with color mixing systems that use up to seven discrete color control channels plus intensity
9. Touchscreen stations shall be designed to operate standard default or custom system functions.
- 1 Optional button functions include: preset selection, manual mode activation, record mode activation, station lockout, raise, lower, macro activation, and cue light, or room join/separate.
 - 2 Optional fader functions include master control, individual channel control, fade rate control or preset master control.
 - 3 Touchscreen stations shall allow programming of station and component electronic lockout levels via LightDesigner.
 - 4 It shall be possible to adjust touchscreen contrast and brightness.
 - 5 It shall be possible to program the station to dim during periods of inactivity.

1.08 DIGITAL BUTTON AND FADER STATIONS

A. Button and Fader Stations

1. General

- 1 The control station shall be the Paradigm Inspire Station Series as manufactured by ETC, Inc., or equal
- 2 It shall be a remote station on a LinkConnect network that can recall presets, provide direct zone control, play macros and provide room combine actions for a control system
- 3 The station shall consist of a dual function (control/ record) push-button with an integral tri-color backlight for each corresponding button and fader

2. Mechanical

- 1 Control stations shall operate using one, two, four, six or eight buttons. A four button with fader station shall also be available
- 2 All button stations shall be available with cream, grey, black or white decorator style faceplates
 - 1 Manufacturer's standard colors shall conform to the RAL CLASSIC Standard
- 3 Stations shall have tri-color backlights for each button and fader
 - 1 Indicators shall utilize a configurable color backlight for active status
 - 2 Indicators shall utilize a configurable color backlight for inactive status to assist in locating stations in dark environments. Stations that do not support a lit inactive or deactivated state shall not be accepted
 - 3 Stations shall support an "off" status with backlight.
- 4 All faceplates shall be designed for flush or surface mounting and have no visible means of attachment

Advanced Lighting Control
26 09 05

- 5 Station faceplates shall be constructed of ABS plastic and designed based on a standard decorator style faceplate.
 - 6 Buttons shall be indelibly laser marked for each button function
 - 7 Control station electronics shall mount directly behind the faceplate. The entire assembly shall mount into a single gang back box. Back boxes for flush mounted stations shall be industry standard back boxes. The manufacturer shall supply back boxes for surface mounted stations.
3. Electrical
- 1 Control station wiring shall be LinkConnect control wiring utilizing low-voltage, Class II unshielded twisted pair, type Belden 8471 or equivalent, and one #14 ESD drain wire (when not installed in grounded metal conduit).
 - 2 The station shall operate on class 2 voltage provided by the control system via the LinkConnect network.
 - 3 Station wiring must be topology free. It may be point-to-point, bus, loop, home run or any combination of these.
 - 4 Wiring termination connectors shall be provided with all stations.
 - 5 Control stations shall be UL/ cUL listed and CE marked and meet WEEE Compliance
4. Function
- 1 The Control System shall be designed to allow control of lighting and associated systems via Button and Fader controls.
 - 1 System presets shall be programmable via LightDesigner configuration software.
 - 1 Presets shall have a discrete fade time, programmable from zero to 1,000 hours with a resolution of one millisecond.
 - 2 System macros and sequences shall be programmable via LightDesigner configuration software.
 - 1 Macro and sequence steps shall provide user selectable steps, and allow the application of conditional logic.
 - 2 Macro and sequences shall be activated by button, time clock event or LightDesigner software.
 - 2 Control components shall be designed to operate default or custom system functions. Components shall operate default functions unless re-assigned via LightDesigner, the software-based configuration program.
 - 1 Optional button functions include: preset selection, manual mode activation, record mode activation, station lockout, raise, lower, macro activation, or room join/separate.
 - 2 Optional fader functions include manual master control, individual zone control, color control fade rate control or preset master control.
- Stations (Button and Button/Fader) shall allow programming of station and component electronic lockout levels via LightDesigner.

ARENA LIGHTING EQUIPMENT

SECTION 26 50 03

1.01 GENERAL

- A. Work covered by this section of the specifications shall conform to the contract documents, engineering plans as well as state and local codes.
- B. The purpose of these specifications is to define the performance and design standards for the project. The manufacturer / contractor shall supply lighting equipment to meet or exceed the standards set forth by the criteria set forth in these specifications.
- C. The lighting provided must be suitable for all uses identified in the Basis of Design Document.
- D. These specifications are based on lighting equipment provided by Musco. Other manufacturers will be considered and must be approved prior to bid.
- E. All equipment must be fully compatible with the control system specified in Section 26 09 25 Advanced Lighting Control.

1.02 LIGHTING PERFORMANCE

- A. Performance shall be as required by the Basis of Design document.
- B. Lighting required shall be based at 36 inches above the playing surface perpendicular to the respective camera position.
- C. Obstruction Compensation: To achieve the illumination and uniformity design levels required, the manufacturers design calculations and fixture aiming positions must compensate for miscellaneous obstructions, equipment sound system speakers, center hung video boards, mechanical ducts, roof support cross bracing, etc.
- D. Mounting Heights and locations: Fixtures shall be mounted in the locations shown on the bid drawings.
- E. Glare Control: The spectator viewing experience and a high-level broadcast quality are primary goals for this facility, therefore:
 - 1. The candlepower of the event lighting fixtures at 15 degrees above photometric center (the point of max candela) must be 0 candela.
 - 2. Maximum fixture wattage is 400w to ensure an adequate quantity of fixtures for increased uniformities and better modeling and intensity of light
 - 3. Each manufacturer must provide a fixture aiming summary showing horizontal and vertical aiming angles, and the nema type of each fixture with the pre-bid submittal for verification. A photometric report shall also be provided for each fixture type and nema type used.

1.03 DELIVERY TIMING

- A. Equipment On-Site: The equipment must be on-site 6-8 weeks from receipt of approved submittals and receipt of complete order information. Project must be installed to meet owner expectations.

1.6 **SUBMITTAL REQUIREMENTS**

- A. Provide a complete submittal package for approval as outlined in Submittal Information at the end of this section and as required by Division 1. Special manufacturing to meet the standards of this specification may be required. All fixture manufacturers must have at least a minimum of 10 years experience in TV Sports lighting.
- B. Light Level Requirements: Manufacturer shall provide computer models to show light levels on the event floor.

PART 2 – PRODUCTS

2.1 **ARENA LIGHTING**

- A. System Description: Lighting system shall consist of the following:
1. LED Lamp Technology Sports Lighting Fixtures. Instant on/off capabilities and DMX Dimming Capabilities. Dimming interface shall be via a hard wire connection enclosed in conduit. Wireless controls not permitted.
 2. Fixtures must have internal optic control and external visors to minimize glare in the seats and on the event floor. Fixture wattage shall not exceed 400 watts and maximum design lumen output shall be 40,000 lumens per fixture to ensure adequate glare control.
 3. Fixtures must come standard with a 10 year full coverage warranty, parts and labor.
 4. Color Temperature of 5,700 Kelvin and 75 CRI.
 5. Event lighting fixtures shall consist of set color temperature diodes to maintain a consistent color temperature of +/-100 Kelvin across the event floor. RGB diodes are not approved for the event lighting. Fixtures that provide color changing and color tuning capabilities are not required.
 6. Fixture Operating Temperature Range of -30 Degrees C to 40 Degrees C. Maximum Junction Temperature of the diodes shall be 90 Degrees C.
 7. Fixtures shall use remote electronic drivers with an efficiency of 95% or greater. Integral driver fixtures are not acceptable. Remote driver enclosures shall be mounted to be accessible from the existing catwalk system. Each enclosure shall house drivers, fusing, and associated wiring.
 8. Manufacturer shall provide a remote diagnostic system that is accessible from the manufacturers remote warranty location. Communication to the unit shall be accessed via a cellular data connection provided and maintained by the manufacturer for 10 years. System shall be capable of confirming proper fixture operation and shall be able to remotely diagnose faulty components to ensure a rapid warranty response during the 10 year warranty period.
 9. Manufacturer shall provide Gateway system to tie into DMX control by others. Gateway shall provide for permanent DMX control system as well as connection for portable touring DMX lighting control boards.
 10. Secondary Wiring: Wiring from the remote driver to the fixture shall be 1000V rated and meet all local electrical codes.
 11. Mounting: Manufacturer shall provide all mounting requirements, locations, sizes, weights, etc. to the structural engineer. Structural engineer will provide all design for all equipment mounting including power equipment, lighting trusses, equipment enclosure and conduit routing.
- B. Manufacturing Requirements: All components shall be designed and manufactured as a system. All luminaires, drivers and other enclosures shall be factory assembled, aimed, wired and tested.
- C. Durability: The lighting system, including all mounting brackets, shall be powder-coat painted for protection. All mounting brackets are to be made of steel construction. Only stainless steel or zinc plated steel hardware is allowed
- D. Safety: All system components shall be UL Listed for the appropriate application.
- E. Electric Power Requirements for the Sports Lighting Equipment:
1. Electric power: 208Y/120V 3 phase 4 wire.
 2. Maximum total voltage drop: Voltage drop to the remote enclosure shall not exceed three (3) percent of the rated voltage.
- F. Spare Parts:
1. Provide spare components for all components likely to require replacement.
 2. Spare parts Shall be as follows:

- a. Contactors 5% spare minimum of 3.
- b. Relays 10% spare minimum of 6
- c. LED Drivers 10% minimum of 6
- d. LED Array boards 10% minimum of 6

PART 3 – EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Manufacturer shall provide a factory trained project manager to be on-site during delivery, installation and testing of the equipment. Project manager shall also supervise owner training at substantial completion of system installation.
- B. System performance testing (SPT) shall be completed, fully operational and findings recorded before final on site verification with owners' representative(s) present. Schedule on site verification of SPT with the Contractor, Project Engineer, Owner's Representative, and Manufacturer's Representative,
- C. Programmed event presets shall be used when testing system lighting. Where multiple events have the same lighting criteria only one typical event preset is required to be tested during SPT. All presets shall be labeled in common language for easy recall.
 - a. Illumination Measurements: illumination measurements shall be taken and verified to meet the design criteria. The illumination measurements shall be conducted in accordance with IESNA RP-6-01, Appendix B. Measurements shall be taken to validate lighting requirements for each intended event as identified in the presets requirements listed in the project criteria.
 - b. Demonstrate the selection and proper operation of all individual presets during SPT.
 - c. A simulated power outage of 1 min. shall be incorporated into the SPT.
 - i. Verify operation of UPS system and that the system automatically switches between normal and UPS power without the need for system reboot or reset.
 - ii. Verify no programed data is lost upon return to normal operation.
 - d. Test all control stations, tablets and remote access devices for proper operation.
 - e. Visually inspect all fixtures and uniformity of output and color.
 - f. Verify proper driver voltages.
 - g. Verify system boot up and self diagnostics. Simulate a fault in the lighting system and in the control system to verify proper system indication. Verify fault condition indication on all appropriate control devices.
- D. Correcting Non-Conformance: If, in the opinion of the Owner or his appointed Representative, the actual performance levels including vertical and horizontal foot candles, uniformity ratios, and maximum kilowatt consumptions are not in conformance with the requirements of the performance specifications and submitted information, the Manufacturer shall be liable to any or all of the following:
 - 1. At no expense to the owner provide and install any necessary additional fixtures to meet the minimum lighting standards.
 - 2. Make modifications until all criteria are met.

- E. Upon completion and owner acceptance a final system acceptance certificate shall be signed to indicate complete conformance with the specifications and project criteria. System is not accepted until signed by the owners' representative.

SUBMITTAL INFORMATION

Design Submittal Data Checklist and Certification

All items listed below are mandatory, shall comply with the specification and be submitted according to pre-bid submittal requirements

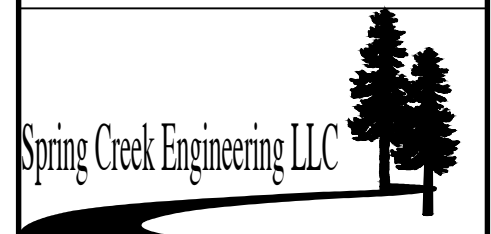
Included	Tab	Item	Description
	A	Letter/ Checklist	Listing of all information being submitted must be included on the table of contents. List the name of the manufacturer's local representative and his/her phone number. Signed submittal checklist to be included.
	B	Arena Lighting Design	Lighting design drawing(s) showing: a. Project Name, date, file number, prepared by, and other pertinent data b. Outline of venue(s) being lighted, as well as fixture locations referenced to the center of the playing surface (x & y). Illuminance levels at grid spacing verified. c. Fixture height, as well as luminaire information including wattage, lumens and optics d. Height of meter above playing surface e. Summary table showing the number and spacing of grid points; average, minimum and maximum illuminance levels in foot candles (fc); uniformity including maximum to minimum ratio, coefficient of variance and uniformity gradient; number of luminaires, total kilowatts. f. Manufacturer must submit a photometric report summary prepared by an independent lab or a NVLAP lab that includes axial candlepower on the horizontal and vertical axis
	D	Life Cycle Cost calculation	Document life cycle cost calculations as defined in the specification. Identify energy costs for operating the luminaires. All costs should be based on 10 Years.
	G	Warranty	Provide written warranty information including all terms and conditions.
	H	Project References	Manufacturer to provide a list of project references of similar products completed within the past three years.
	I	Product Information	Complete set of product brochures for all components, including a complete parts list and UL Listings.
	J	Non-Compliance	Manufacturer shall list all items that do not comply with the specifications.
	K	Compliance	Manufacturer shall sign off that all requirements of the specifications have been met and that the manufacturer will be responsible for any future costs incurred to bring their equipment into compliance for all items not meeting specifications and not listed in item J – Non-Compliance

Manufacturer: _____

Signature: _____

Contact Name: _____

Date: ____ / ____ / ____



218 S. Main Street Ste. A
Lodi, WI 53555
1-608-712-5597
www.springcreekengineering.com

Project Title:
DANE COUNTY COLISEUM
ALLIANT ENERGY CENTER
SPORTS LIGHTING RENOVATION

Project Location:
MADISON, WISCONSIN

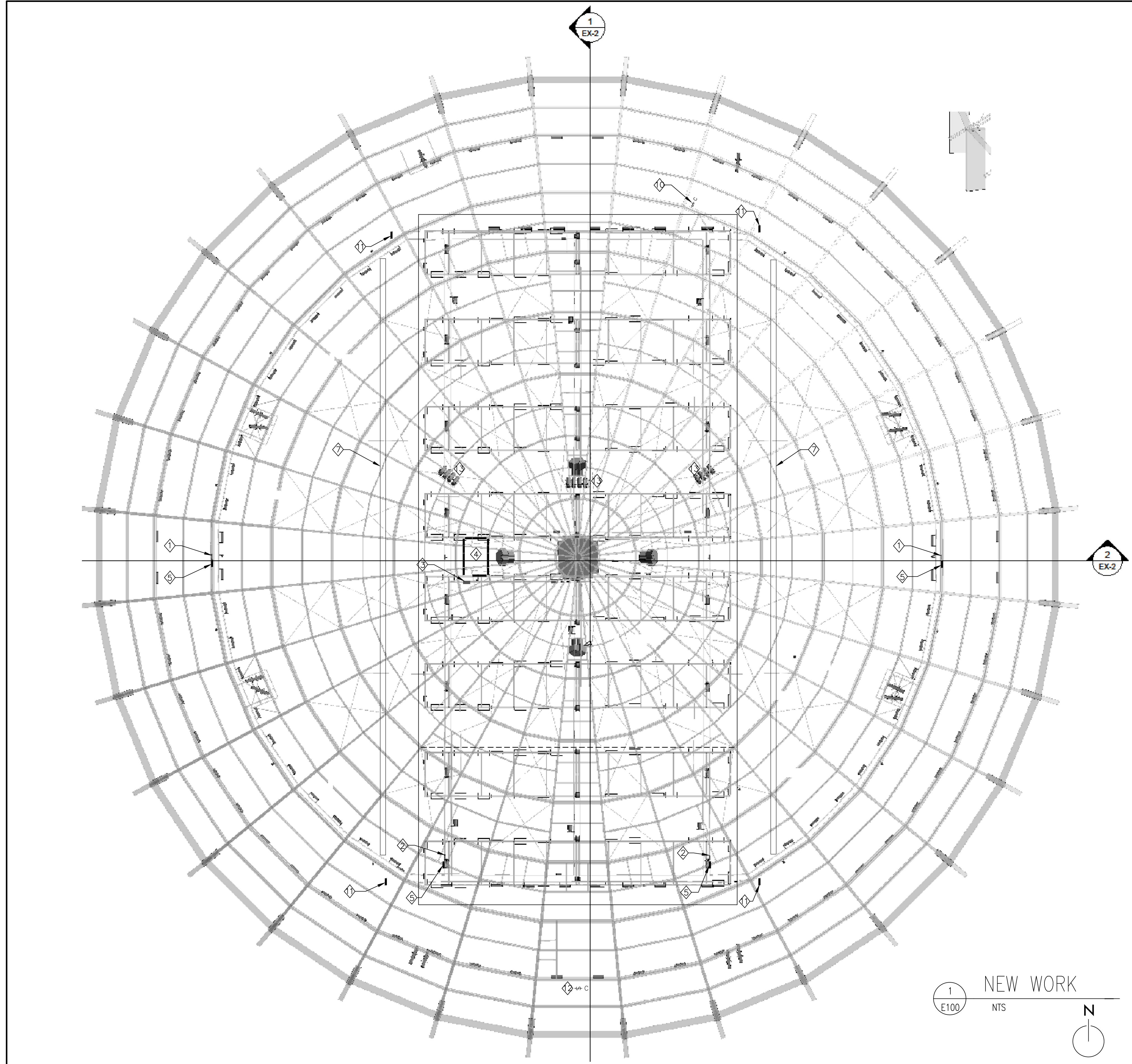
Sheet Title:
ELECTRICAL - NEW WORK

Revisions:

No.	Date:	By:	Description:

Graphic Scale	NONE
DSF Number	17015
Set Type	SCOPE FOR BID
Date Issued	1/4/18
Sheet Number	E100

- NOTES:
- ◇ = PLAN REFERENCE NOTE. NO DIAMOND = GENERAL NOTE
 - ① CATWALK PANEL SERVING OUTER RING OF EXISTING HOUSE LIGHTING.
 - ② CATWALK PANEL SERVING INNER RING OF EXISTING HOUSE LIGHTING.
 - ③ EXISTING 600A 208Y/120V 3PH 4W DISTRIBUTION PANEL SERVING HALF OF CATWALK SYSTEM EQUIPMENT. TIE NEW FEEDER FOR NEW LIGHTING TO EXISTING FEEDER SERVING THIS PANEL.
 - ④ NEW 400A 208Y/120V 3PH 4W PANEL AND LIGHTING CONTROL EQUIPMENT CABINETS ON NEW EQUIPMENT PLATFORM. PROVIDE ALL MOUNTING STRUT TO MOUNT ALL EQUIPMENT. SEE STRUCTURAL DETAIL OF PLATFORM STRUCTURE TO DETERMINE EXTENT OF MOUNTING STRUT REQUIRED.
 - ⑤ NEW DIMMERS AND CONTROL FOR EXISTING FLUORESCENT HOUSE LIGHTING.
 - 6 HOUSE LIGHTING SHALL BE DIVIDED INTO 4 INDEPENDENTLY CONTROLLABLE ZONES:
NORTH BACK STAGE ZONE
SOUTH BACK STAGE ZONE
WEST PARTIAL HOUSE ZONE
EAST PARTIAL HOUSE ZONE
EXACT DIVISIONS MUST BE VERIFIED. SOME RE-CIRCUITING OF EXISTING HOUSE LIGHTING MAY BE REQUIRED.
 - ⑦ NEW SPORT LIGHTING STATIC TRUSS 62' ABOVE EVENT FLOOR. SEE MUSCO PRELIMINARY DESIGN DRAWINGS FOR FIXTURE COUNT AND LOCATIONS.
 - 8 NEW SPORT LIGHTING SHALL BE DIVIDED INTO 5 INDEPENDENTLY CONTROLLABLE ZONES:
NORTH STAGE ZONE
SOUTH STAGE ZONE
NORTH FRONT OF STAGE ZONE
SOUTH FRONT OF STAGE ZONE
CENTER HOUSE
EXACT DIVISIONS MUST BE VERIFIED.
EACH ZONE SHALL BE CAPABLE OF MULTIPLE ON/OFF AND DIMMING LEVELS PER SCOPE DESIGN NARRATIVE DOCUMENT.
 - 9 NEW LIGHTING SYSTEM MUST BE INSTALLED, PROGRAMMED, FULLY OPERATIONAL AND OWNERS' STAFF MUST BE FULLY TRAINED TO OPERATE THE SYSTEM BEFORE THE OLD LIGHTING SYSTEM CAN BE REMOVED FROM SERVICE.
 - ⑩ NEW PUSH BUTTON CONTROL STATION ON ARENA LEVEL AT LOCATION OF EXISTING CONTROL STATION.
 - ⑪ PROVIDE REMOTE CONTROL OF EXISTING LED ADVERTISEMENT AT ARENA LEVEL FROM NEW CONTROL SYSTEM (4 LOCATIONS).
 - ⑫ EXISTING MANUAL SWITCH FOR CONTROL OF SUITE LIGHTING LOCATED IN LIGHTING BOOTH. PROVIDE CONTROL OF EXISTING SUITE LIGHTING FROM NEW CONTROL SYSTEM.
 - ⑬ EXISTING BASKET SPOT LIGHTING LOCATED BELOW CATWALK. EXISTING CONTROL IS BY SWITCHED OUTLETS ON CATWALKS. PROVIDE CONTROL OF THE SWITCHED OUTLETS FROM THE NEW LIGHTING CONTROL SYSTEM. 12 FIXTURES TOTAL 7 AMP LOAD PER FIXTURE.
 - 14 ANY CONNECTIONS TO THE EXISTING STRUCTURE MUST BE COORDINATED WITH THE STRUCTURAL ENGINEER. ALL STRUCTURAL WORK WILL BE BY THE GENERAL CONTRACTOR. COORDINATE EQUIPMENT REQUIREMENTS PRIOR TO START OF WORK. ALL SPORTS LIGHTING EQUIPMENT SHALL BE LOCATED ON NEW EQUIPMENT PLATFORM.
 - 15 REFERENCE SCOPE DESIGN NARRATIVE AND SPECIFICATION FOR ADDITIONAL INFORMATION.

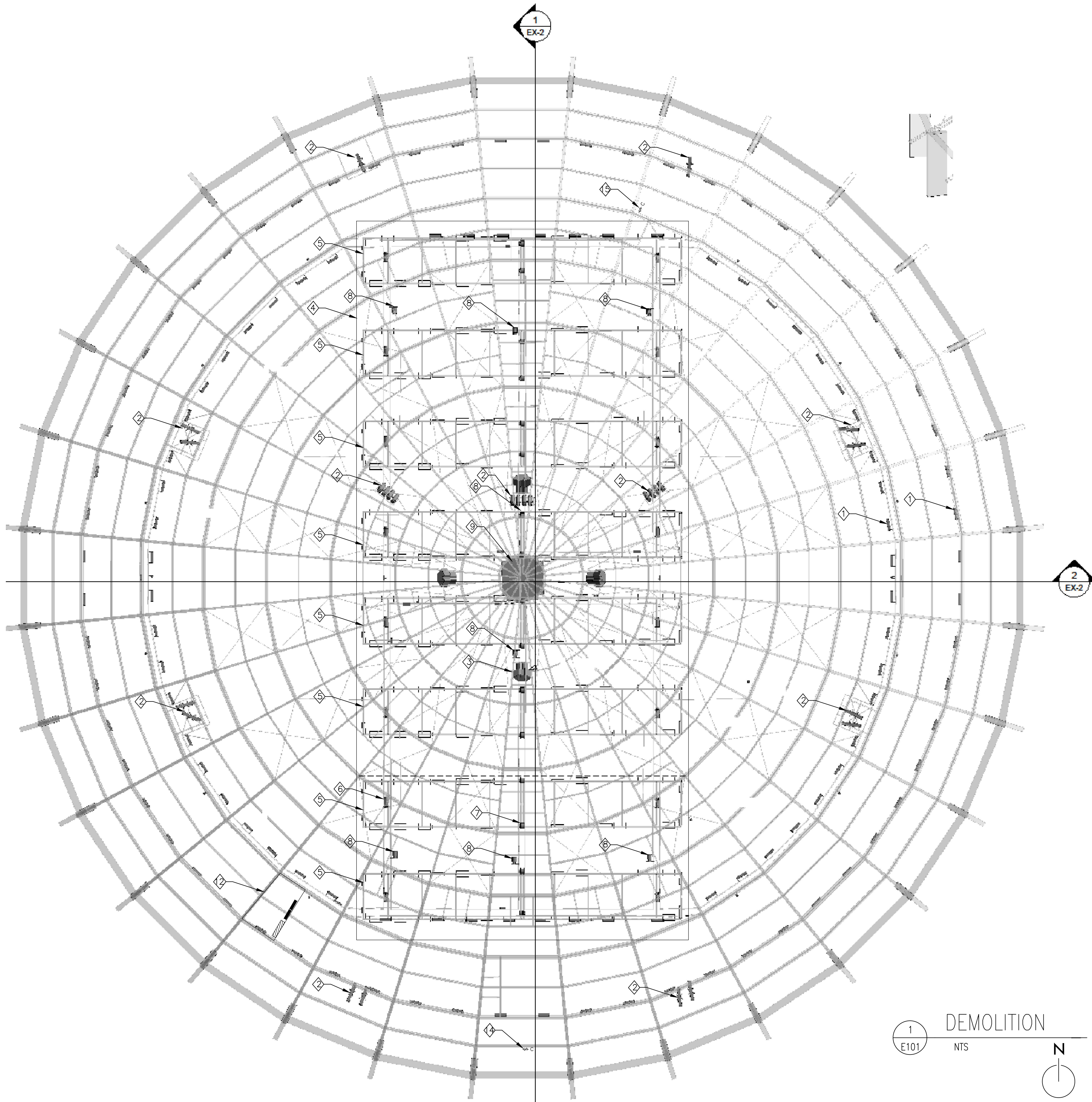


--

Project Title: DANE COUNTY COLISEUM ALLIANT ENERGY CENTER SPORTS LIGHTING RENOVATION	Project Location: MADISON, WISCONSIN	Sheet Title: ELECTRICAL - DEMOLITION
---	---	---

Revisions:			
No.	Date:	By:	Description:

Graphic Scale:	NONE
DSF Number:	17015
Set Type:	SCOPE FOR BID
Date Issued:	1/4/18
Sheet Number:	E101



NOTES:

- # = PLAN REFERENCE NOTE. NO DIAMOND = GENERAL NOTE
- 1 TYPICAL EXISTING HOUSE RING LIGHTING TO REMAIN.
- 2 8 EXISTING FOLLOW SPOT AND 3 BASKET SPOT LOCATIONS TO REMAIN.
- 3 TYPICAL SOUND SYSTEM LOUD SPEAKERS TO REMAIN.
- 4 REMOVE ALL EXISTING LIGHTING IN THIS AREA UNLESS NOTED.
- 5 DISCONNECT ALL POWER TO EQUIPMENT ON 8 EXISTING 12' x 100' LIGHT STRUCTURES INCLUDING LIGHT FIXTURES, CORD REELS AND MOTOR HOISTS.
- 6 EXISTING LIGHT STRUCTURE MOTOR HOIST TO BE DISCONNECTED BY EC REMOVED BY GC. TWO PER STRUCTURE 16 TOTAL.
- 7 EXISTING LIGHT STRUCTURE POWER DROP CORD REEL TO BE DISCONNECTED BY EC REMOVED BY GC. TWO PER LIGHT STRUCTURE, 16 TOTAL.
- 8 EXHIBIT FLOOR POWER DROP TO BE DISCONNECTED BY EC REMOVED BY GC. 8 TOTAL 60A TO 90A EACH.
- 9 EXISTING SCORE BOARD TO REMAIN.
- 10 EQUIPMENT REMAINING APPEARS TO BE FULLY SUPPORTED BY EXISTING STRUCTURE REMAINING IN PLACE.
- 11 DEMOLITION INCLUDES ALL WIRING AND CONDUIT TO THE PANEL SUPPLYING POWER UNLESS NOTED.
- 12 EXISTING DIMMER RACK ROOM ON SECOND CONCOURSE. DEMOLISH EXISTING DIMMER RACKS. REWORK FEEDERS TO EXISTING PANELS ON CATWALK SYSTEM DISRUPTED BY DIMMER REMOVAL.
- 13 NEW LIGHTING SYSTEM MUST BE INSTALLED, PROGRAMMED, FULLY OPERATIONAL AND OWNER MUST BE FULLY TRAINED TO OPERATE THE SYSTEM BEFORE THE OLD LIGHTING SYSTEM CAN BE REMOVED FROM SERVICE.
- 14 DEMOLISH EXISTING MASTER CONTROL STATION AT SOUTH UPPER DECK LIGHTING BOOTH. PROVIDE BRUSHED STAINLESS STEEL COVER PLATE OVER OPENING.
- 15 DEMOLISH PUSH BUTTON CONTROL STATION AT NORTH LOWER CONCOURSE PROVIDE CLOSURE OF OPENING AS PART OF REPLACEMENT CONTROL STATION.
- 16 REFERENCE SCOPE DESIGN NARRATIVE AND SPECIFICATION FOR ADDITIONAL INFORMATION.

EQUIPMENT LIST FOR AREAS SHOWN									
Pole			Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
24	A1-A6 B1-B6 C1-C6 D1-D6		62'	62'	TLC-LED-400	4	4	0	
24	TOTALS						96	96	0

EXHIBIT 1

Madison Coliseum - Dane County Madison, WI

GRID SUMMARY	
Name:	Hockey
Size:	200' x 85'
Spacing:	10.0' x 10.0'
Height:	5.0' above grade

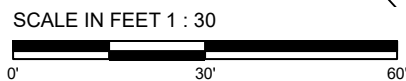
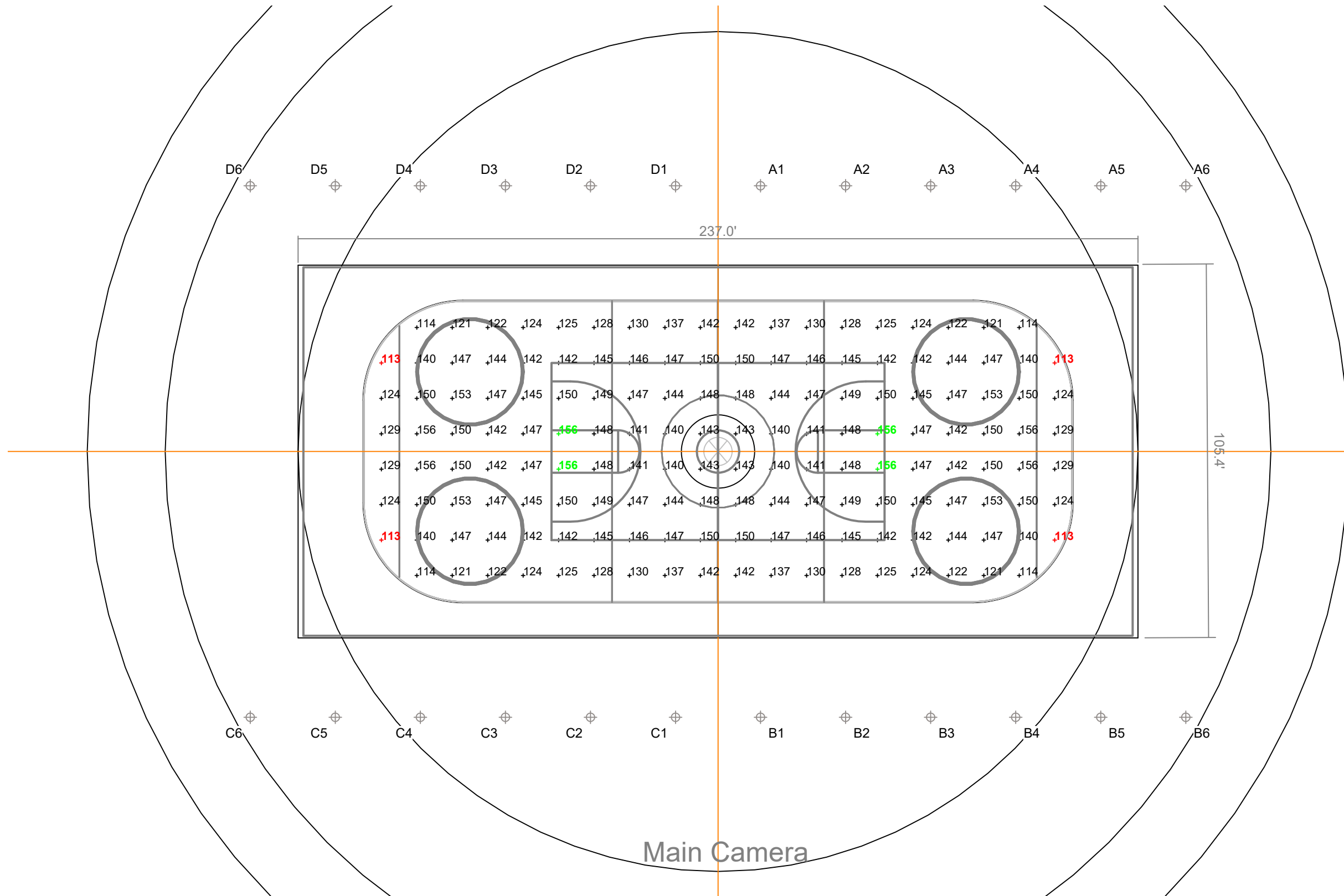
ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
Entire Grid			
Guaranteed Average:	125		
Scan Average:	140.25		
Maximum:	156		
Minimum:	113		
Avg / Min:	1.24		
Guaranteed Max / Min:	1.5		
Max / Min:	1.38		
UG (adjacent pts):	1.24		
CU:	0.57		
No. of Points:	156		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	38,600 lumens		
No. of Luminaires:	96		
Total Load:	38.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	61,000	>72,000	>72,000
Reported per TM-21-11. See luminaire datasheet for details.			

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



We Make It Happen.

EQUIPMENT LIST FOR AREAS SHOWN									
Pole			Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
24	A1-A6 B1-B6 C1-C6 D1-D6		62'	62'	TLC-LED-400	4	4	0	
24	TOTALS						96	96	0

Madison Coliseum - Dane County Madison, WI

GRID SUMMARY	
Name:	Hockey
Size:	200' x 85'
Spacing:	10.0' x 10.0'
Height:	5.0' above grade

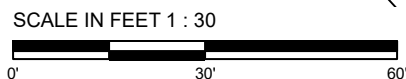
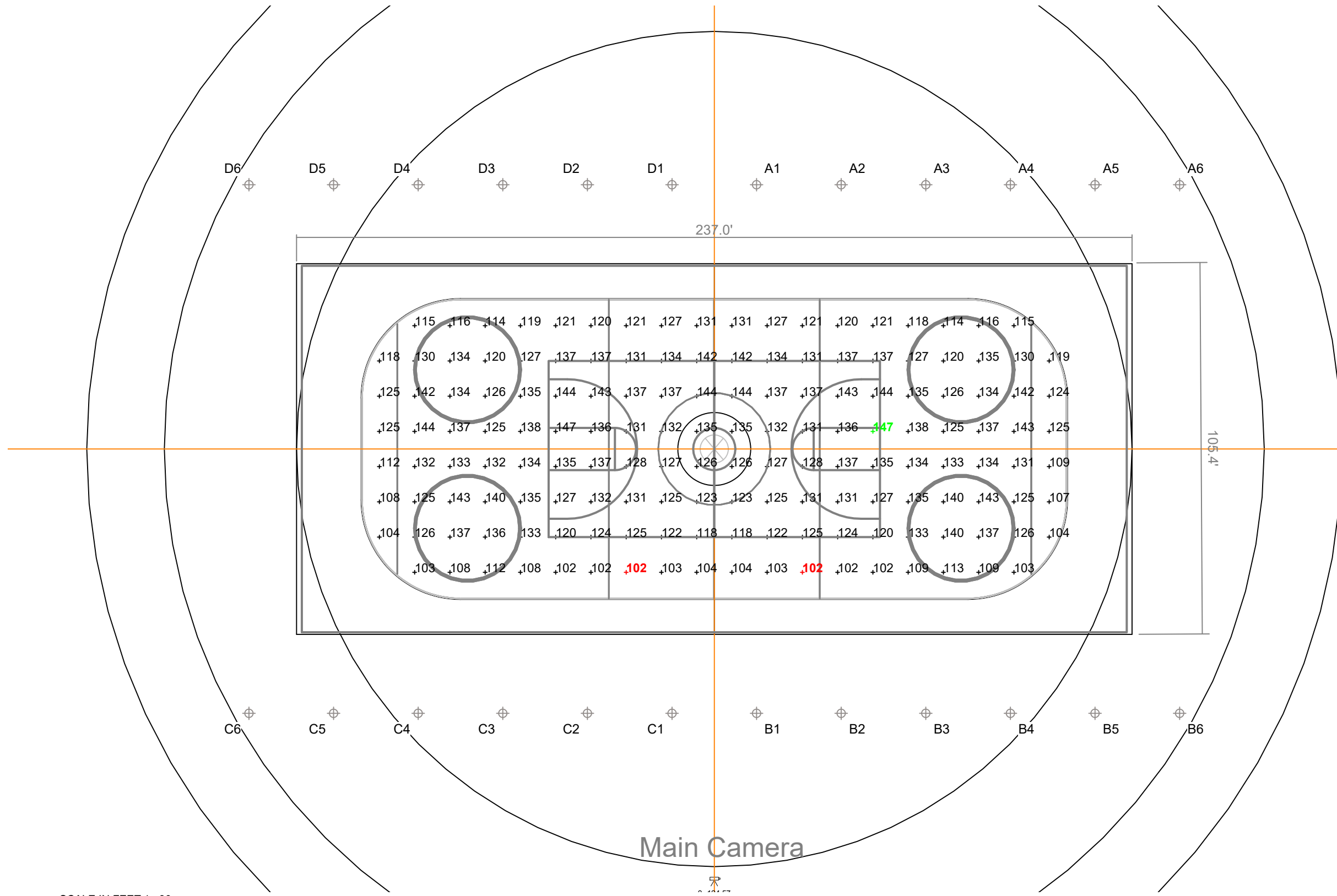
ILLUMINATION SUMMARY			
MAINTAINED TV FOOTCANDLES: Main Camera			
Entire Grid			
Guaranteed Average:	125		
Scan Average:	126.76		
Maximum:	147		
Minimum:	102		
Avg / Min:	1.24		
Guaranteed Max / Min:	1.5		
Max / Min:	1.44		
UG (adjacent pts):	1.27		
CU:	0.57		
No. of Points:	156		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	38,600 lumens		
No. of Luminaires:	96		
Total Load:	38.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	61,000	>72,000	>72,000
Reported per TM-21-11. See luminaire datasheet for details.			

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



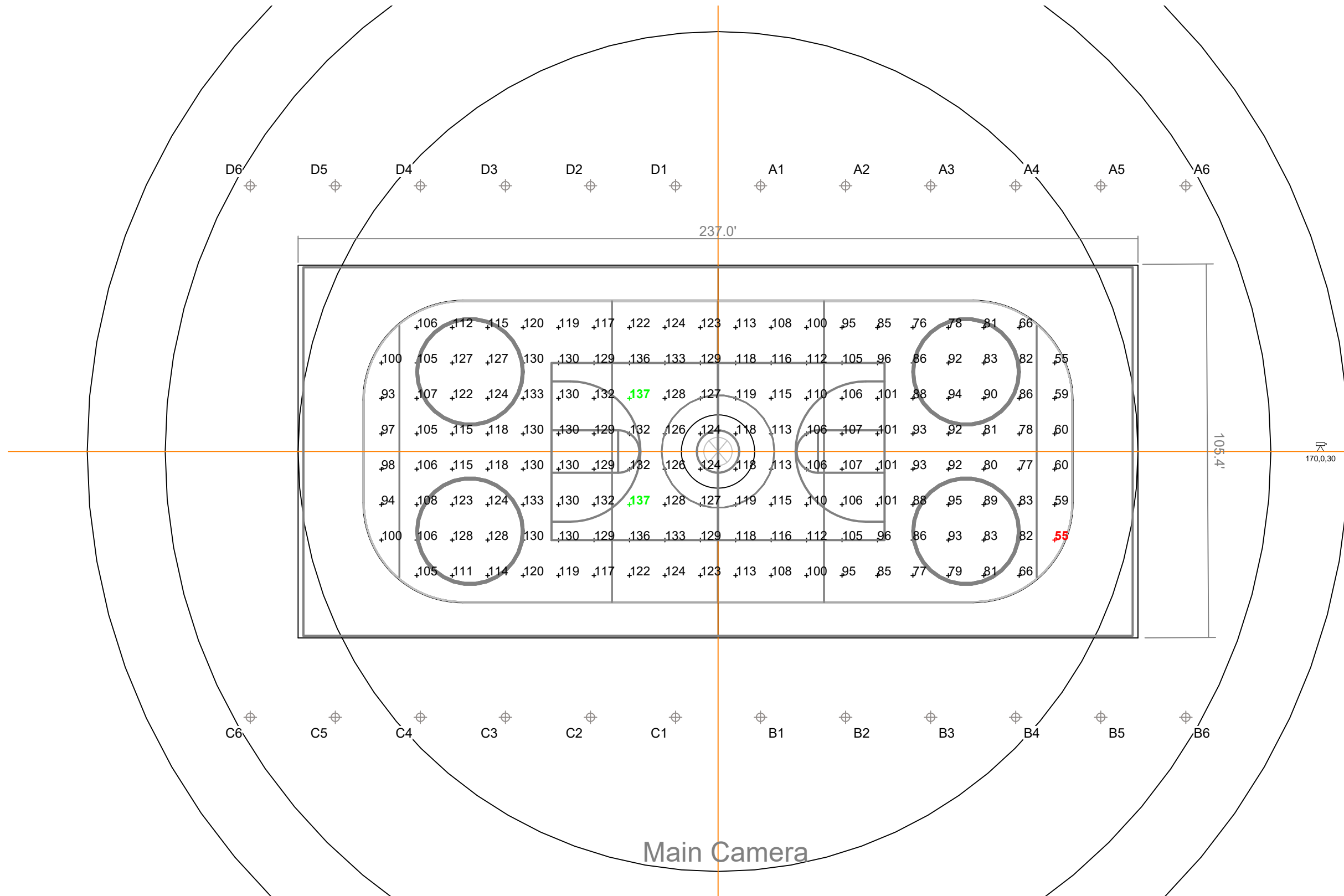
We Make It Happen.

EQUIPMENT LIST FOR AREAS SHOWN									
Pole			Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
24	A1-A6 B1-B6 C1-C6 D1-D6		62'	62'	TLC-LED-400	4	4	0	
24	TOTALS						96	96	0

Madison Coliseum - Dane County Madison, WI

GRID SUMMARY	
Name:	Hockey
Size:	200' x 85'
Spacing:	10.0' x 10.0'
Height:	5.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED TV FOOTCANDLES: Estimated End Camera			
Entire Grid			
Guaranteed Average:	75		
Scan Average:	107.76		
Maximum:	137		
Minimum:	55		
Avg / Min:	1.94		
Guaranteed Max / Min:	2.5		
Max / Min:	2.48		
UG (adjacent pts):	1.48		
CU:	0.57		
No. of Points:	156		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	38,600 lumens		
No. of Luminaires:	96		
Total Load:	38.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	61,000	>72,000	>72,000
Reported per TM-21-11. See luminaire datasheet for details.			

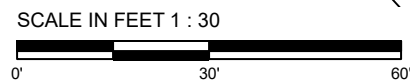


Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



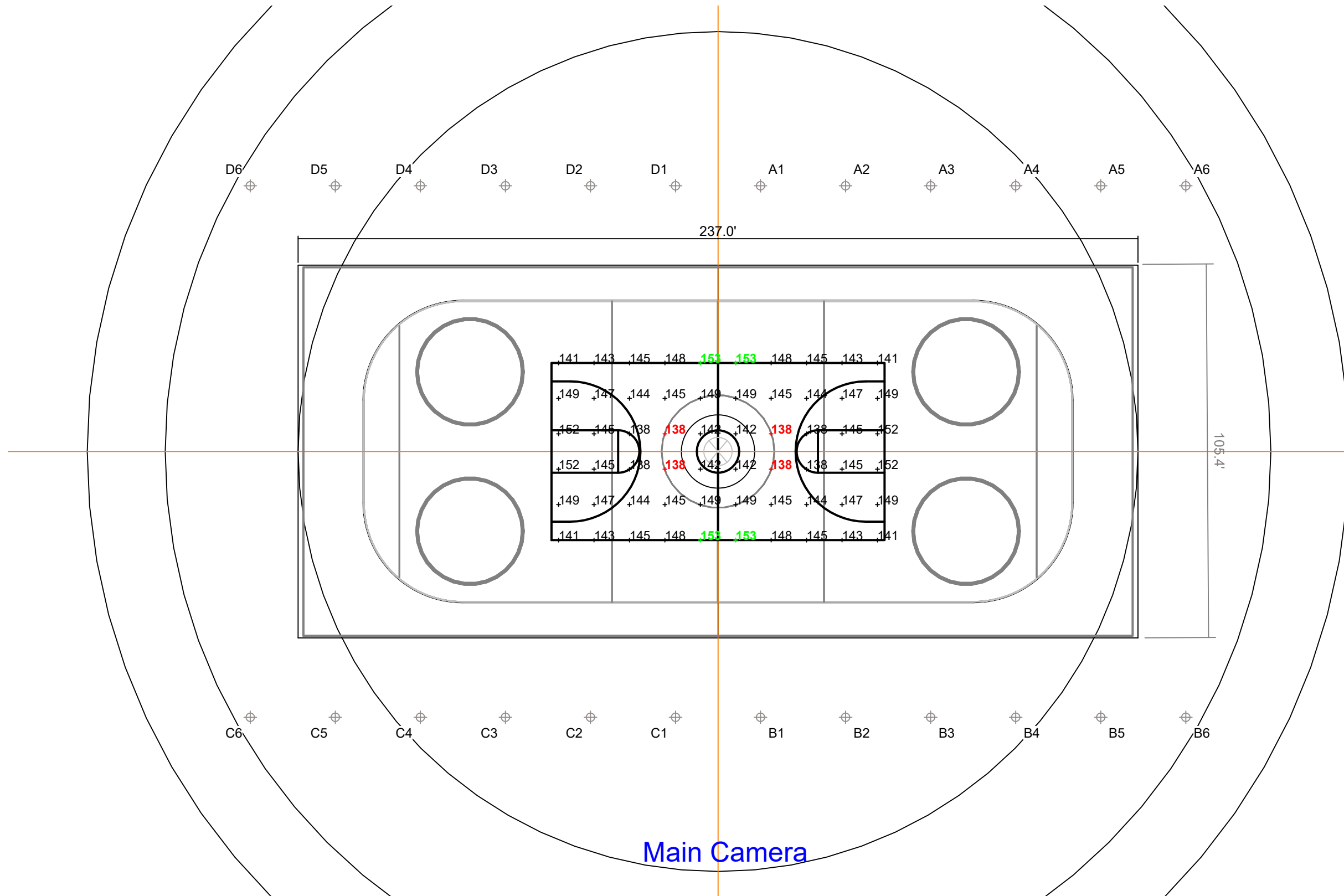
EQUIPMENT LIST FOR AREAS SHOWN									
Pole			Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
24	A1-A6 B1-B6 C1-C6 D1-D6		62'	62'	TLC-LED-400	4	4	0	
24	TOTALS						96	96	0

Madison Coliseum - Dane County

Madison, WI

GRID SUMMARY	
Name:	Basketball
Size:	94' x 50'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
Entire Grid			
Scan Average:	145.27		
Maximum:	153		
Minimum:	138		
Avg / Min:	1.05		
Max / Min:	1.11		
UG (adjacent pts):	1.06		
CU:	0.23		
No. of Points:	60		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	38,600 lumens		
No. of Luminaires:	96		
Total Load:	38.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	61,000	>72,000	>72,000
Reported per TM-21-11. See luminaire datasheet for details.			

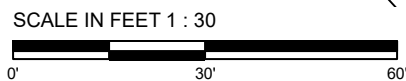


Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) Ⓢ dimensions are relative to 0,0 reference point(s) ⊗



We Make It Happen.

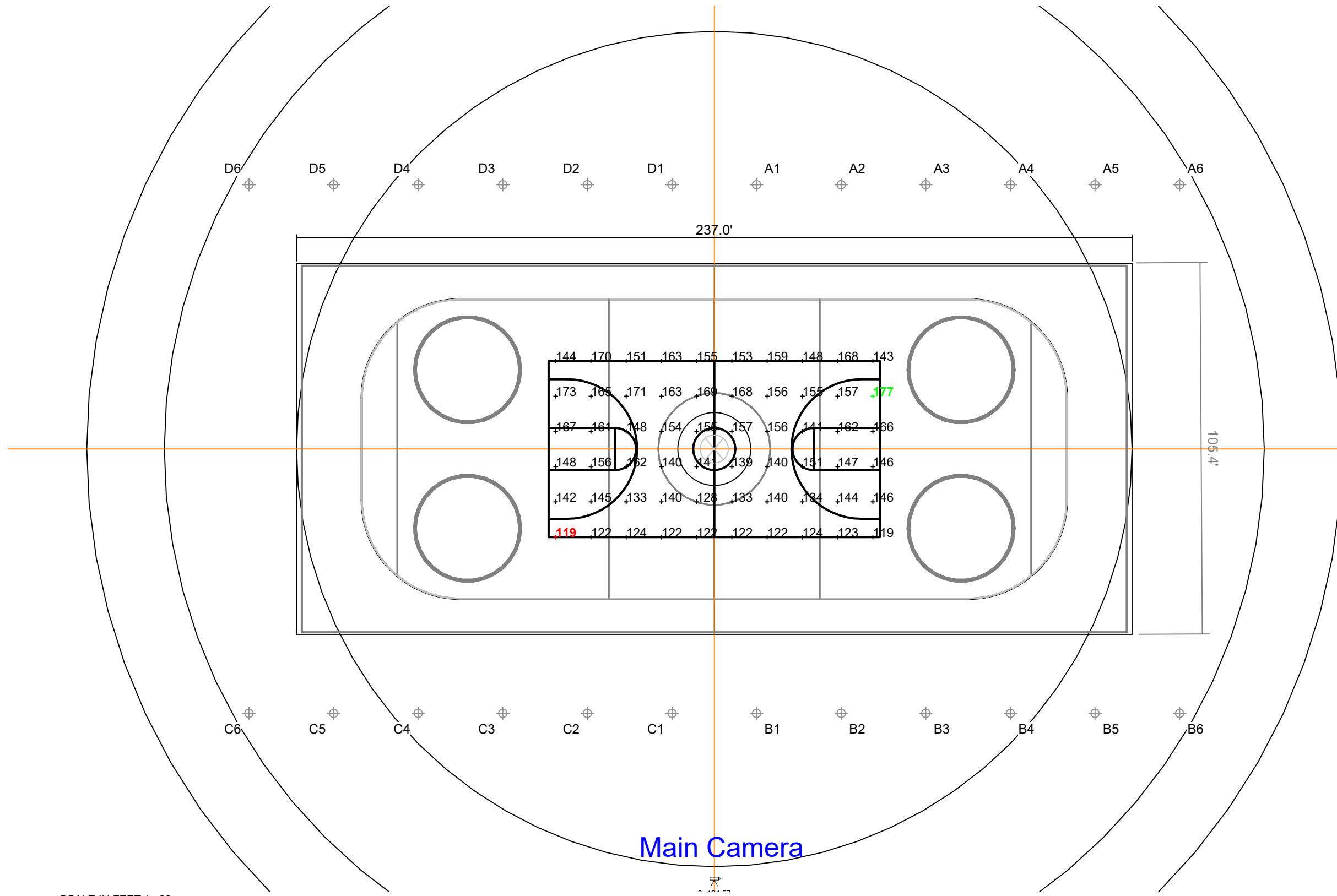
EQUIPMENT LIST FOR AREAS SHOWN									
Pole			Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
24	A1-A6 B1-B6 C1-C6 D1-D6		62'	62'	TLC-LED-400	4	4	0	
24	TOTALS						96	96	0

Madison Coliseum - Dane County

Madison, WI

GRID SUMMARY	
Name:	Basketball
Size:	94' x 50'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED TV FOOTCANDLES: TV Illuminance			
Entire Grid			
Scan Average:	147.47		
Maximum:	177		
Minimum:	119		
Avg / Min:	1.24		
Max / Min:	1.49		
UG (adjacent pts):	1.24		
CU:	0.23		
No. of Points:	60		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	38,600 lumens		
No. of Luminaires:	96		
Total Load:	38.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	61,000	>72,000	>72,000
Reported per TM-21-11. See luminaire datasheet for details.			

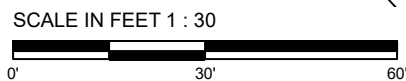


Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) Ⓢ dimensions are relative to 0,0 reference point(s) ⊗



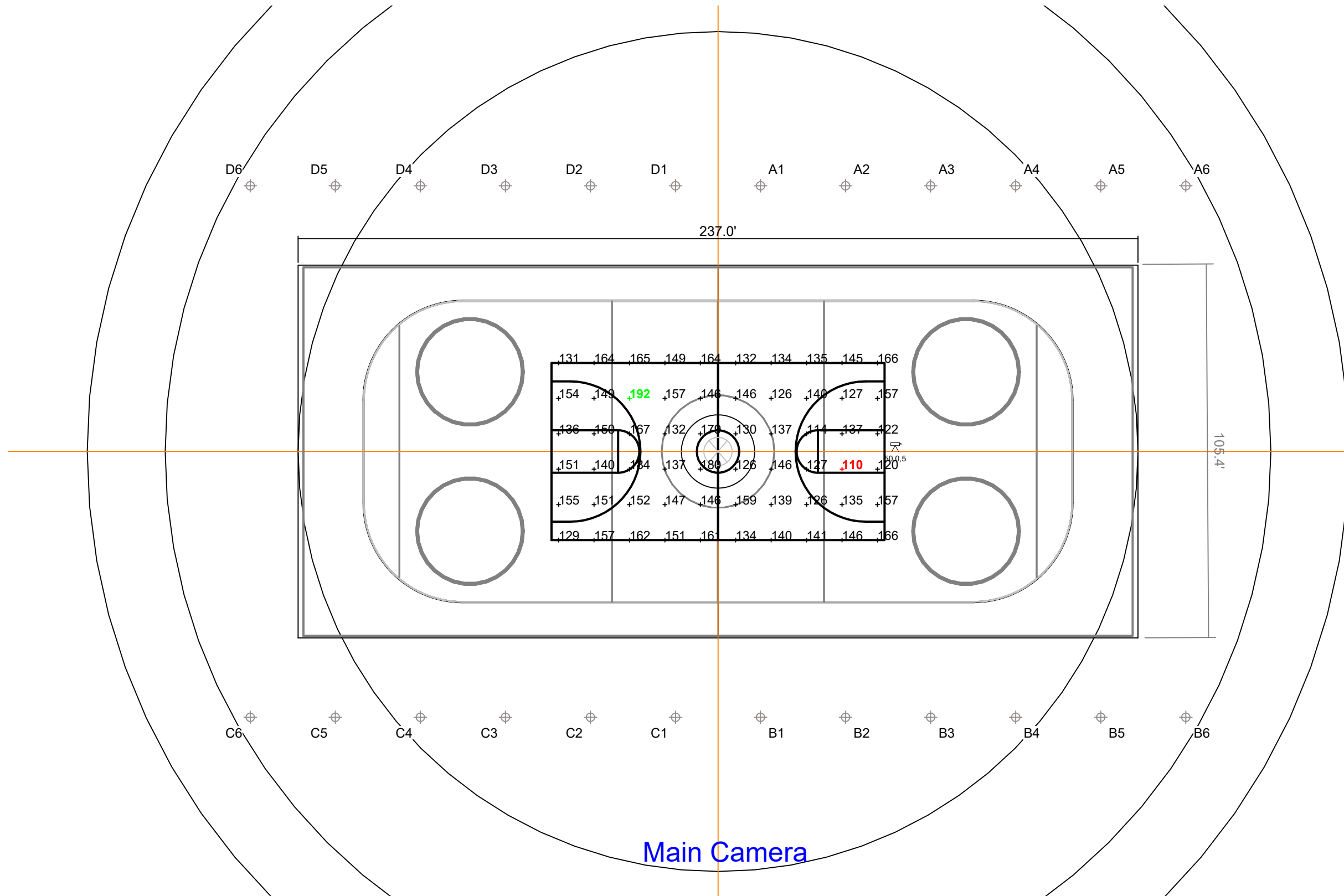
We Make It Happen.

EQUIPMENT LIST FOR AREAS SHOWN									
Pole			Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
24	A1-A6 B1-B6 C1-C6 D1-D6		62'	62'	TLC-LED-400	4	4	0	
24	TOTALS						96	96	0

Madison Coliseum - Dane County Madison, WI

GRID SUMMARY	
Name:	Basketball
Size:	94' x 50'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED TV FOOTCANDLES: End Camera			
Entire Grid			
Scan Average:	146.00		
Maximum:	192		
Minimum:	110		
Avg / Min:	1.33		
Max / Min:	1.75		
UG (adjacent pts):	1.43		
CU:	0.23		
No. of Points:	60		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	38,600 lumens		
No. of Luminaires:	96		
Total Load:	38.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	61,000	>72,000	>72,000
Reported per TM-21-11. See luminaire datasheet for details.			



Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



Not to be reproduced in whole or part without the written consent of Musco Sports Lighting, LLC. ©1981, 2017 Musco Sports Lighting, LLC.

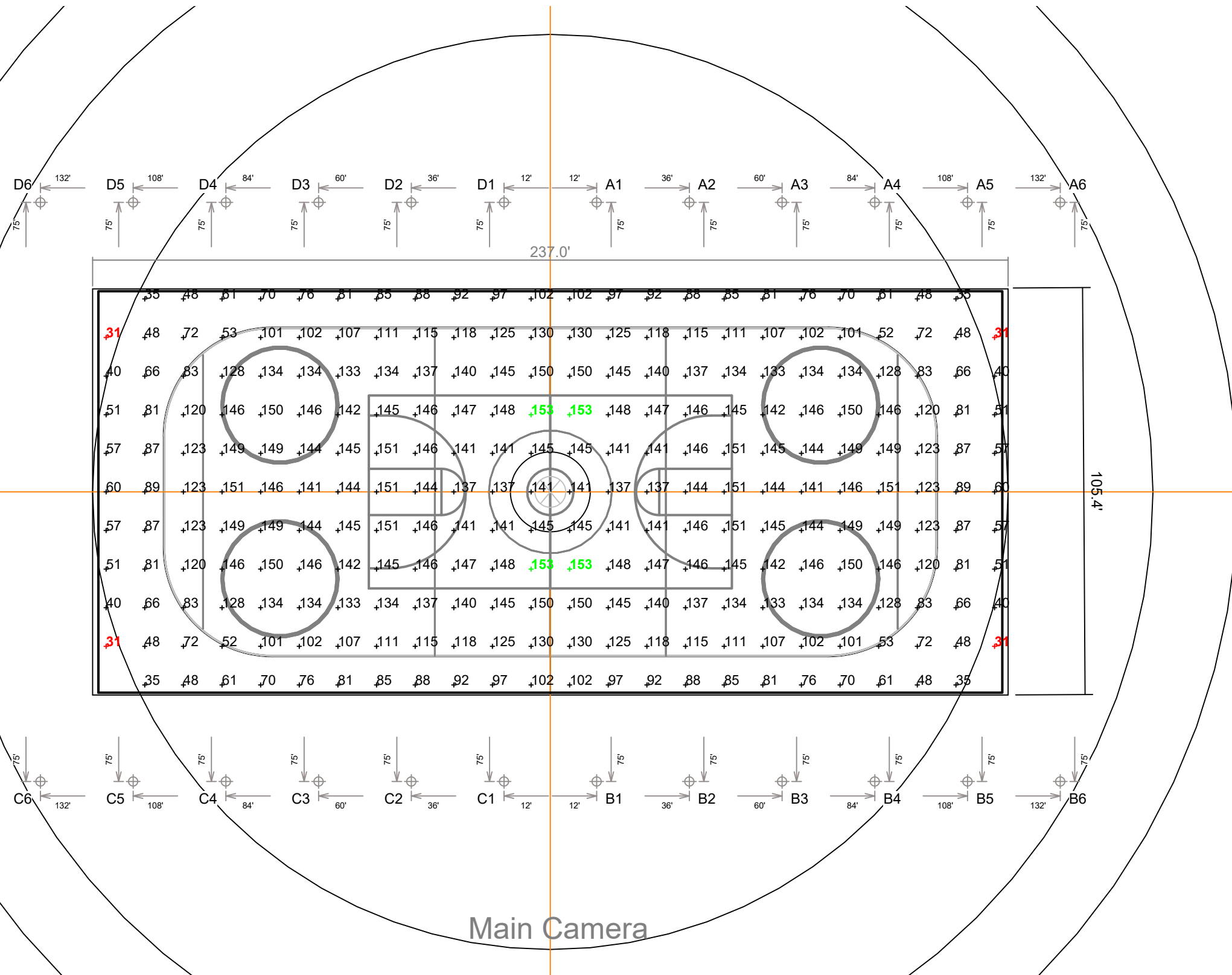
EQUIPMENT LIST FOR AREAS SHOWN									
Pole			Luminaires						
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS	
24	A1-A6 B1-B6 C1-C6 D1-D6		62'	62'	TLC-LED-400	4	4	0	
24	TOTALS						96	96	0

Madison Coliseum - Dane County

Madison, WI

GRID SUMMARY	
Name:	MP Area
Size:	234' x 104'
Spacing:	10.0' x 10.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY			
MAINTAINED HORIZONTAL FOOTCANDLES			
Entire Grid			
Scan Average:	112.41		
Maximum:	153		
Minimum:	31		
Avg / Min:	3.62		
Max / Min:	4.92		
UG (adjacent pts):	2.43		
CU:	0.76		
No. of Points:	260		
LUMINAIRE INFORMATION			
Color / CRI:	5700K - 75 CRI		
Luminaire Output:	38,600 lumens		
No. of Luminaires:	96		
Total Load:	38.4 kW		
Lumen Maintenance			
Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-400	61,000	>72,000	>72,000
Reported per TM-21-11. See luminaire datasheet for details.			

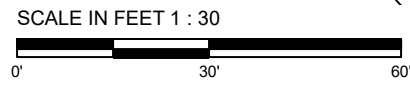


Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.



Pole location(s) Ⓢ dimensions are relative to 0,0 reference point(s) ⊗



EQUIPMENT LAYOUT

INCLUDES:

- Basketball
- Hockey
- MP Area

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

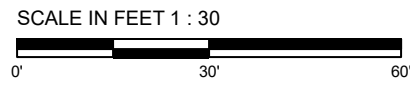
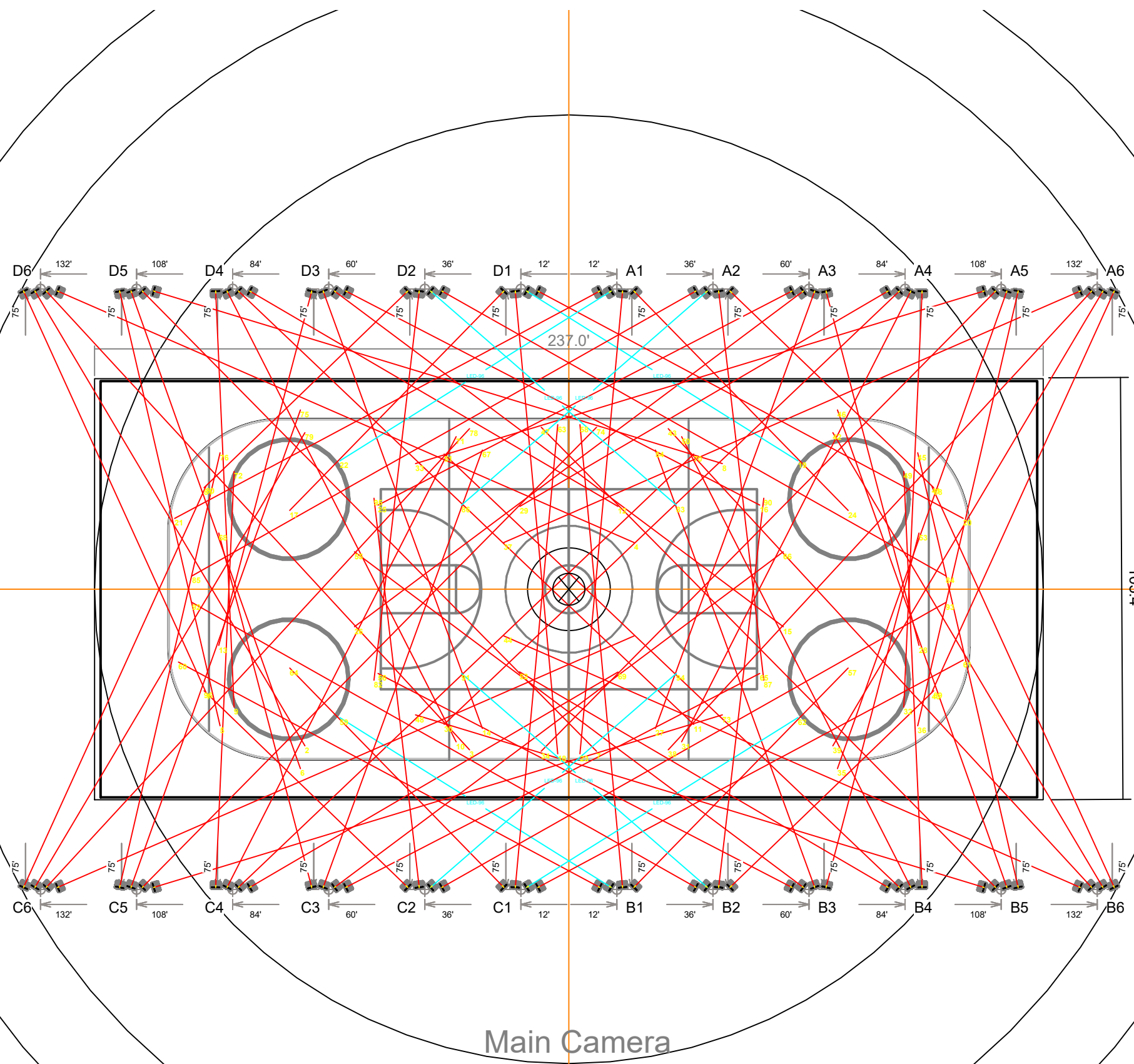
Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

QTY	Pole			Luminaires		QTY / POLE
	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	
24	A1-A6 B1-B6 C1-C6 D1-D6		62'	62'	TLC-LED-400	4
24	TOTALS					96

SINGLE LUMINAIRE AMPERAGE DRAW CHART

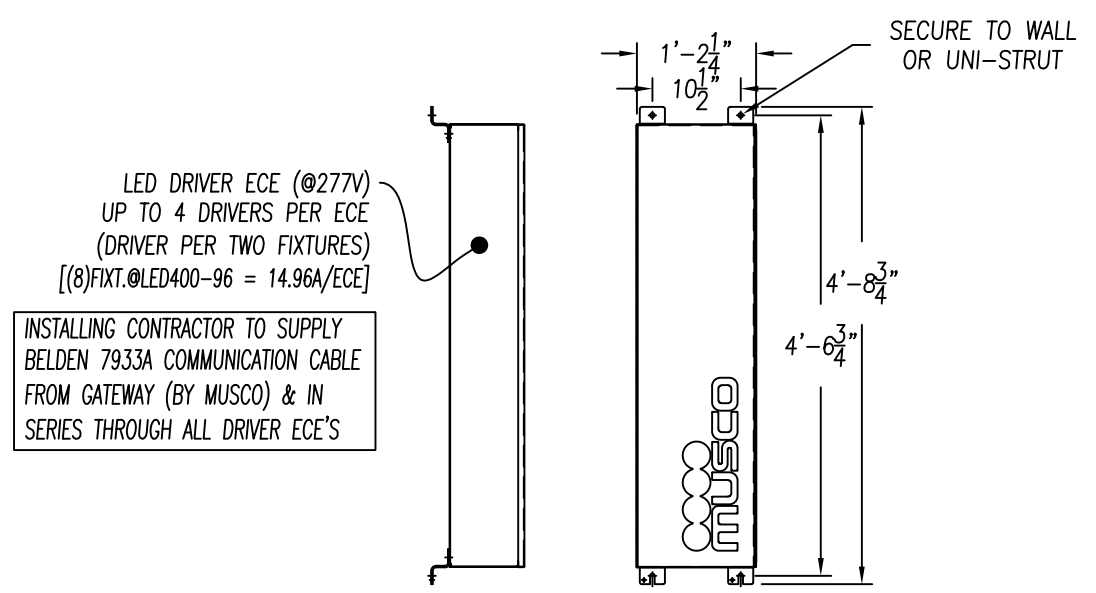
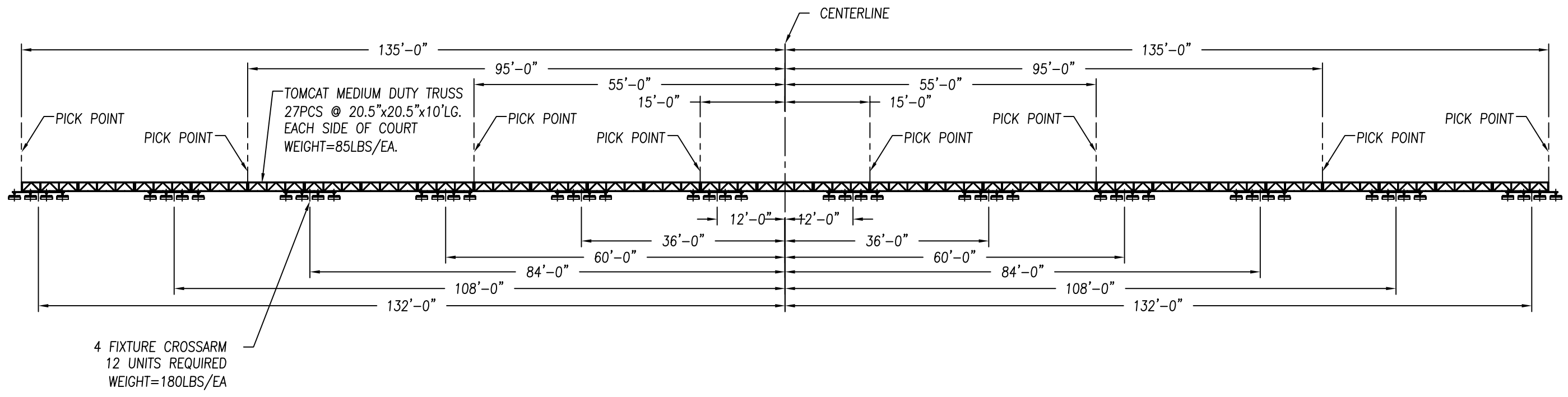
Ballast Specifications (.90 min power factor)	Line Amperage Per Luminaire (max draw)					
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	480 (60)
Single Phase Voltage						
TLC-LED-400	2.5	2.3	2.1	1.9	1.5	1.4



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗



EXHIBIT 2



INSTALLING CONTRACTOR TO SUPPLY
BELDEN 7933A COMMUNICATION CABLE
FROM GATEWAY (BY MUSCO) & IN
SERIES THROUGH ALL DRIVER ECE'S

MULTI DRIVER REMOTE ECE OPTION
SCALE:10X

Madison Coliseum
 Madison, WI
 PRELIMINARY Truss Concept

CORPORATE OFFICE:
 P.O. Box 808
 100 1st Avenue West
 Oskaloosa, Iowa 52577
 +1-800-825-6020
 +1-641-873-0411

DATE:	BY: R.L.	REVISIONS:

JOB NUMBER: 185789
DRAWN BY: DG
CHECK BY:
REPRESENTATIVE:
SCALE: 1:240
DATE: 06NOV17
DRAWING NUMBER: 185796X1
1 OF 1 SHEETS

Copyright (C) Musco Sports Lighting, L.L.C. 1991, 2012
Not to be reproduced in whole or part without
the written consent of Musco Sports Lighting, L.L.C.
U.S. and foreign patents issued and pending.

ALLIANT ENERGY CENTER COLISEUM RIGGING ACCESS IMPROVEMENTS AND LIGHTING PLATFORM

ZS LLC PROJECT NUMBER: 167141



10501 West Research Drive, Suite 207
Milwaukee, Wisconsin 53226
Phone: (414) 727-5000
Fax: (414) 727-6666
www.zsllc-us.com

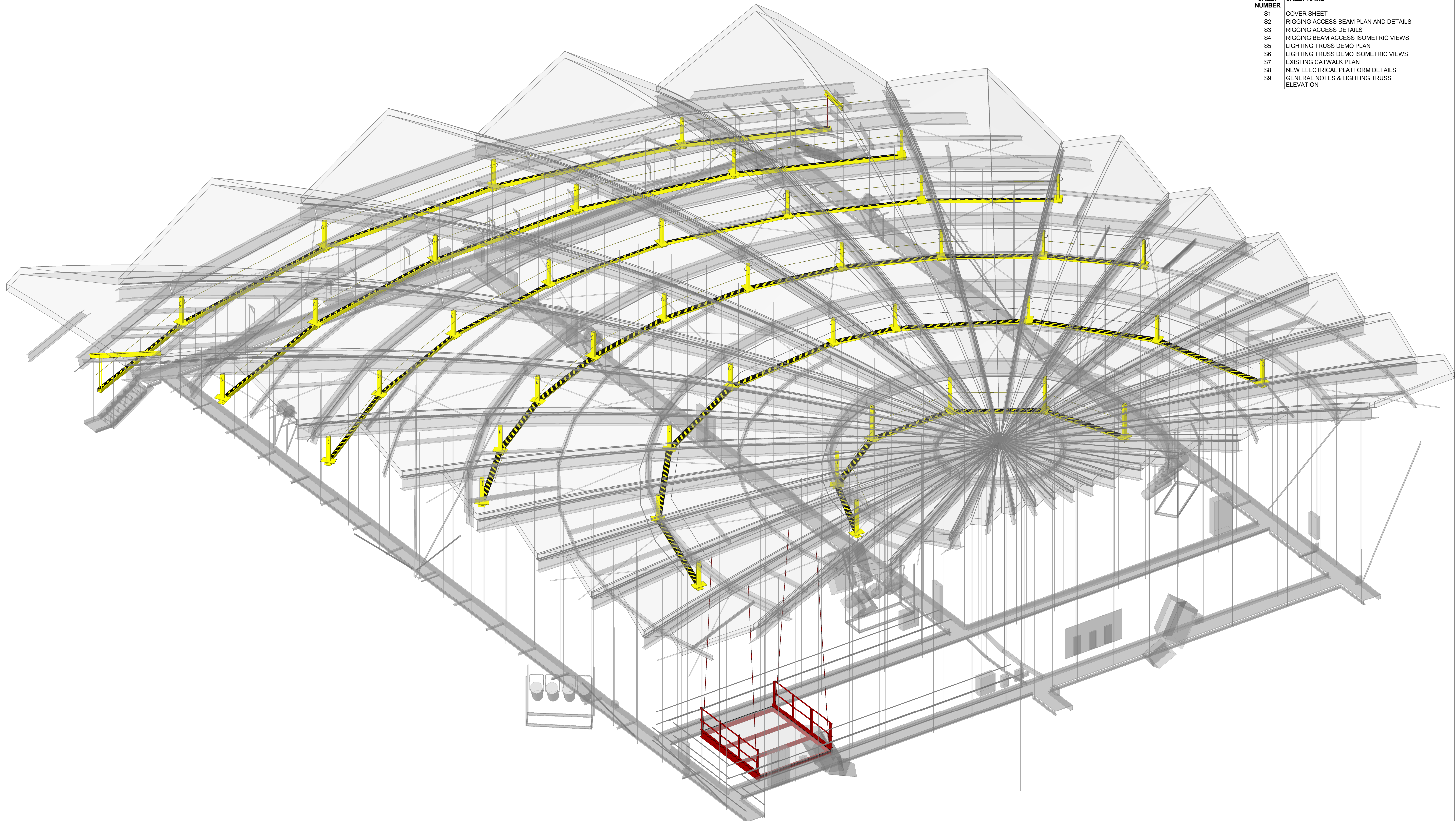
CLIENT:
DANE COUNTY DEPARTMENT OF
PUBLIC WORKS
1919 ALLIANT ENERGY CENTER WAY
MADISON, WISCONSIN 53713



ENGINEER:
ZS LLC
10501 WEST RESEARCH DRIVE, SUITE 207
MILWAUKEE, WISCONSIN 53226
PHONE: (414) 727-5000
www.zsllc-us.com

DRAWING INDEX:

SHEET NUMBER	SHEET NAME
S1	COVER SHEET
S2	RIGGING ACCESS BEAM PLAN AND DETAILS
S3	RIGGING ACCESS DETAILS
S4	RIGGING BEAM ACCESS ISOMETRIC VIEWS
S5	LIGHTING TRUSS DEMO PLAN
S6	LIGHTING TRUSS DEMO ISOMETRIC VIEWS
S7	EXISTING GATWALK PLAN
S8	NEW ELECTRICAL PLATFORM DETAILS
S9	GENERAL NOTES & LIGHTING TRUSS ELEVATION



**ALLIANT ENERGY CENTER COLISEUM
RIGGING IMPROVEMENTS AND LIGHTING PLATFORM
1919 ALLIANT ENERGY CENTER WAY
MADISON, WISCONSIN 53713**

No.	Description	Date

Client:
ALLIANT ENERGY CENTER
1919 ALLIANT ENERGY CENTER WAY
MADISON, WI 53713

COVER SHEET

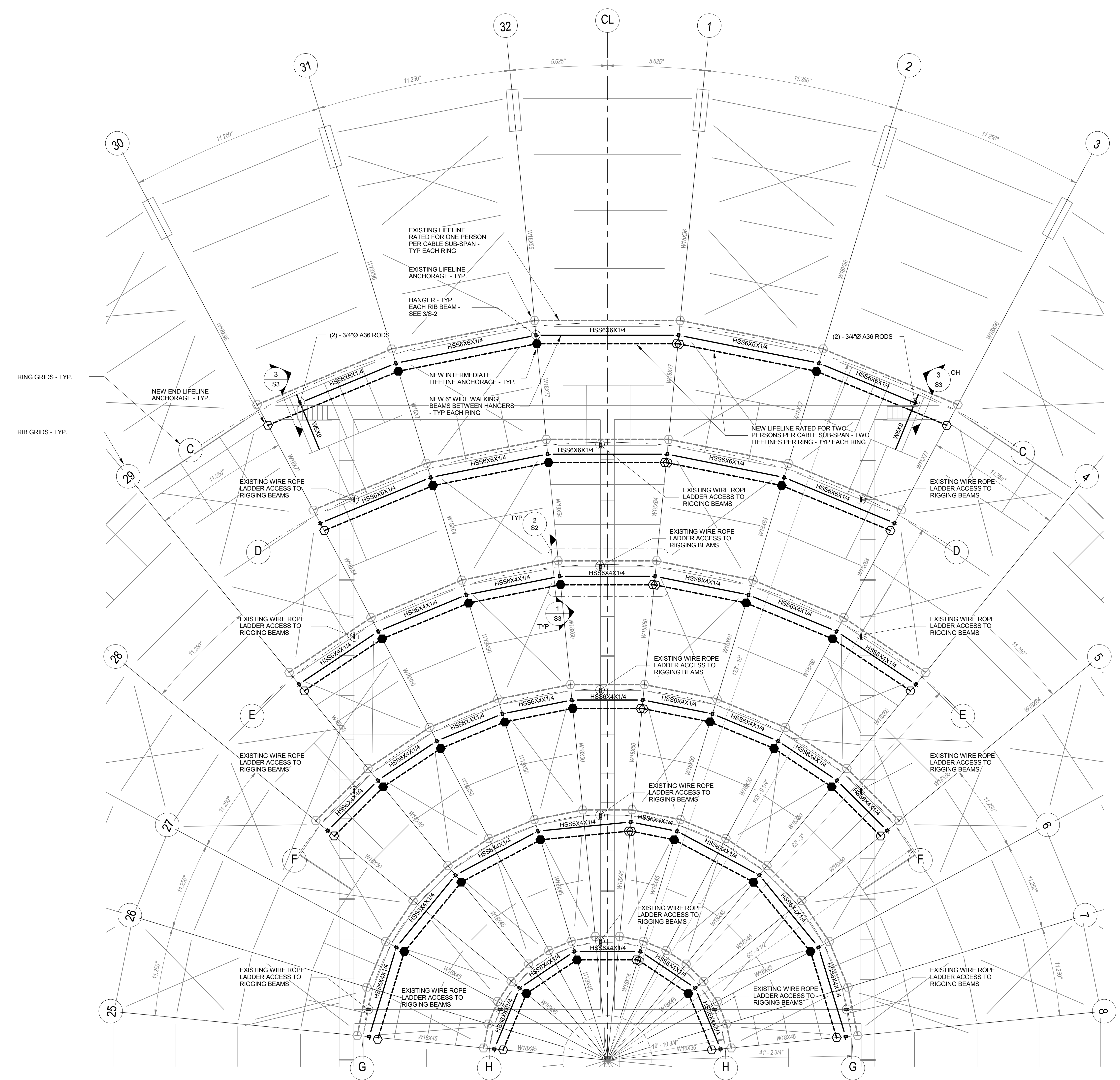
Project number 167141
Date December 19, 2017

S1

NOTE IN REGARD TO EXISTING CONDITIONS
 INFORMATION SHOWN ON THESE DRAWINGS, WITH RESPECT TO EXISTING CONDITIONS, TO THE BEST OF OUR KNOWLEDGE, REPRESENT THE GENERAL AND CURRENT FIELD CONDITIONS. ZS LLC MAKES NO WARRANTY AS TO THE COMPLETENESS OR ACCURACY OF ANY AND ALL EXISTING CONDITIONS SHOWN ON THESE DRAWINGS. CONTRACTOR(S) SHALL VERIFY ALL EXISTING CONDITIONS RELATED TO THE NEW WORK AND REPORT TO THE ENGINEER BEFORE ANY DISCREPANCIES BEFORE PERFORMING ANY WORK. ANY WORK PERFORMED PRIOR TO ENGINEER REVIEW AND SUBSEQUENT RESOLUTION OF DISCREPANCIES BY THE ENGINEER IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST OR BURDEN TO THE CONTRACTOR.

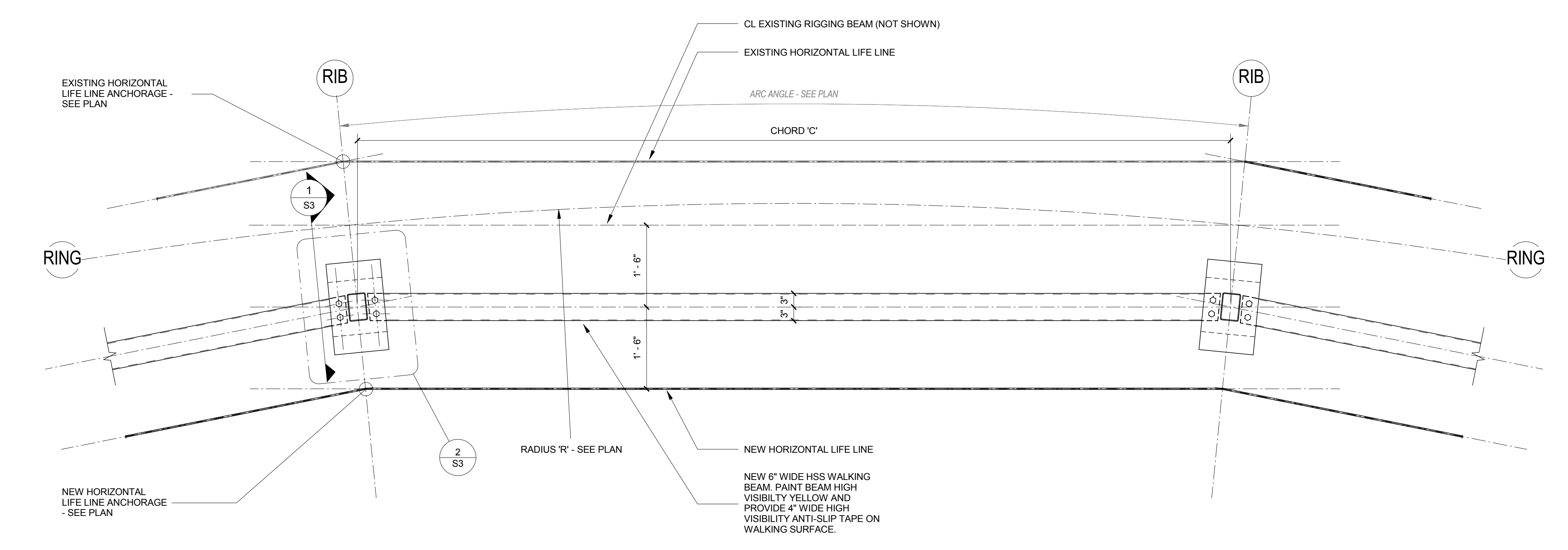
ZS
 10501 West Research Drive, Suite 207
 Milwaukee, Wisconsin 53226
 Phone: (414) 727-5000
 Fax: (414) 727-6666
 www.zsllc-us.com

**ALLIANT ENERGY CENTER COLISEUM
 RIGGING IMPROVEMENTS AND LIGHTING PLATFORM
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WISCONSIN 53713**

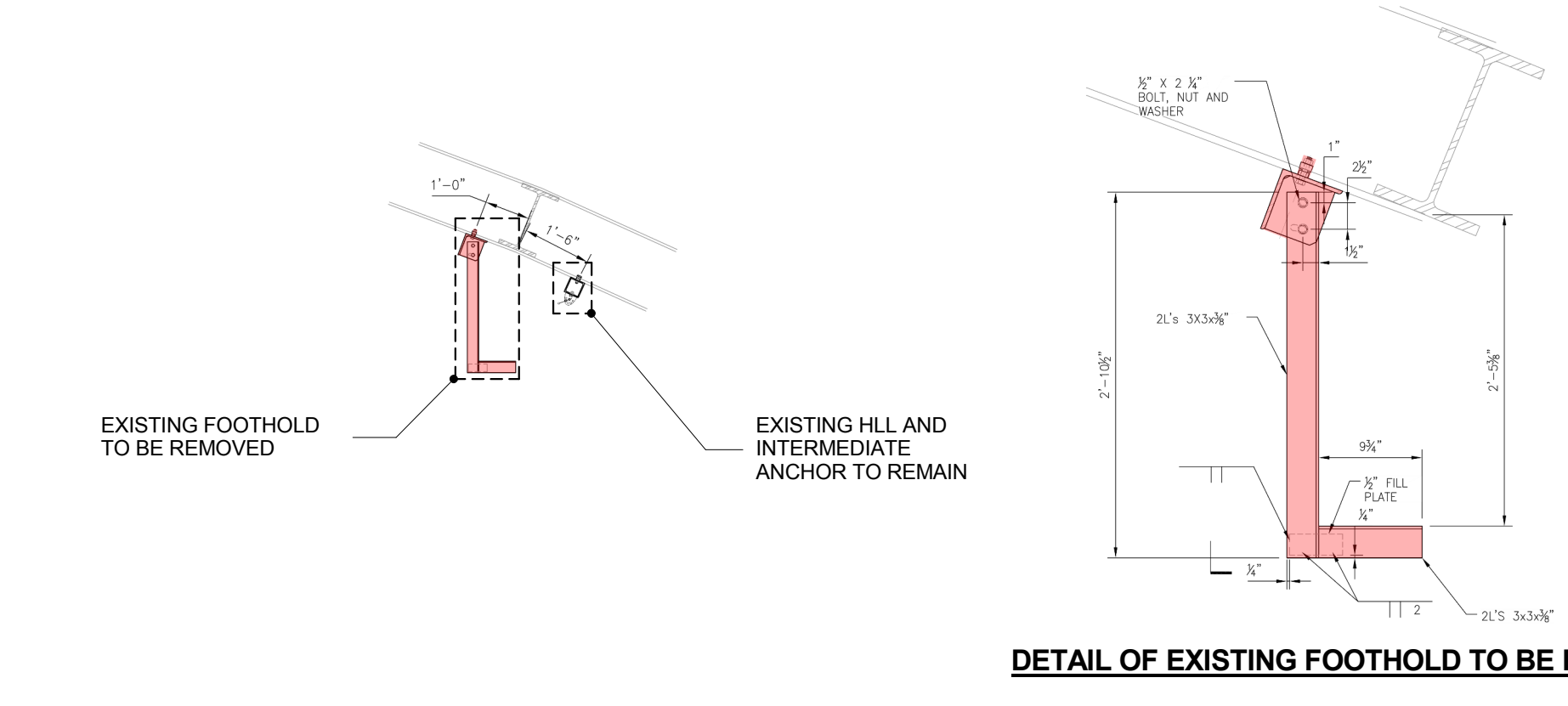


1 ALLIANT ENERGY CENTER ROOF PLAN - NORTH
 1/8" = 1'-0"

- NEW HORIZONTAL LIFELINE NOTES**
1. PROVIDE HORIZONTAL LIFELINE IN ACCORDANCE WITH THE REQUIREMENTS OF OSHA 1928 SUBPART M.
 2. DESIGN SYSTEM FOR TWO USERS PER SPAN AND MAXIMUM ARRESTING FORCE = 1350 LBS. MAXIMUM BODY WEIGHT PLUS TOOLS PER USER IS 310 LBS.
 3. ALL COMPONENTS SHALL BE STAINLESS STEEL.
 4. HLL SYSTEM DESIGNER SHALL DESIGN AND DETAIL CONNECTIONS TO EXISTING BEAMS AND PROVIDE DYNAMIC SUPPORT REACTION FOR ALL LOAD CASES FOR OWNER REVIEW PRIOR TO FABRICATION OR INSTALLATION.



2 TYPICAL WALKING BEAM PLAN
 3/4" = 1'-0"



3 EXISTING FOOTHOLD DEMO
 3/4" = 1'-0"

No.	Description	Date

Client:
 ALLIANT ENERGY CENTER
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WI 53713

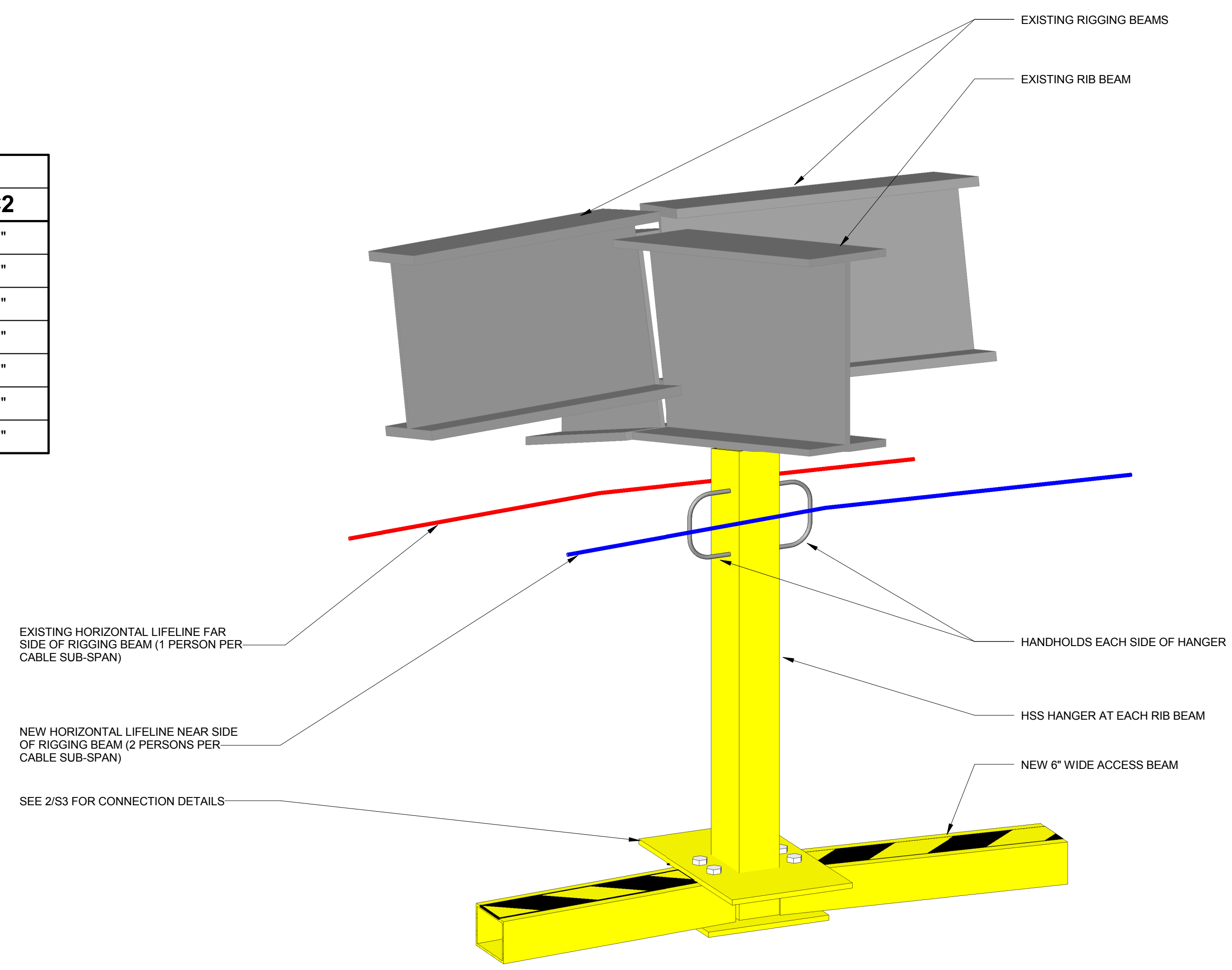
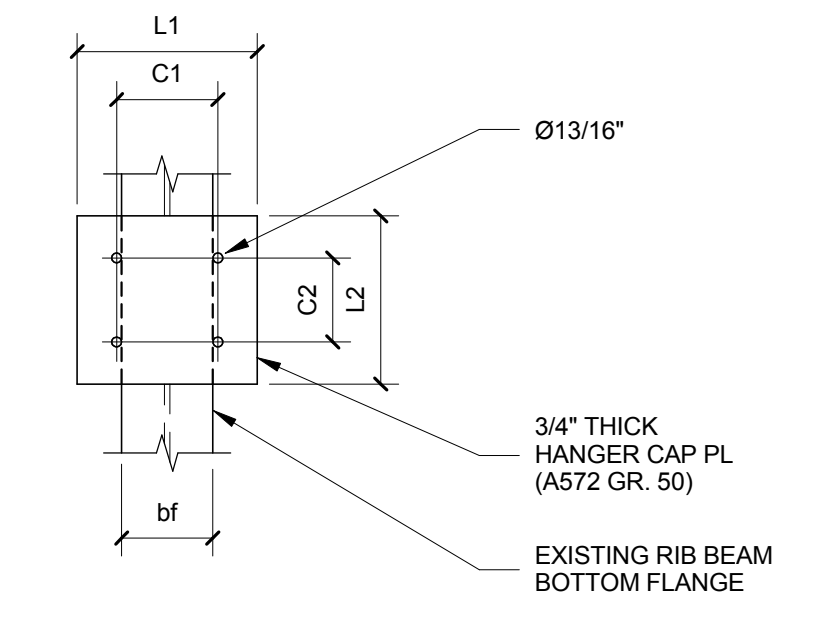
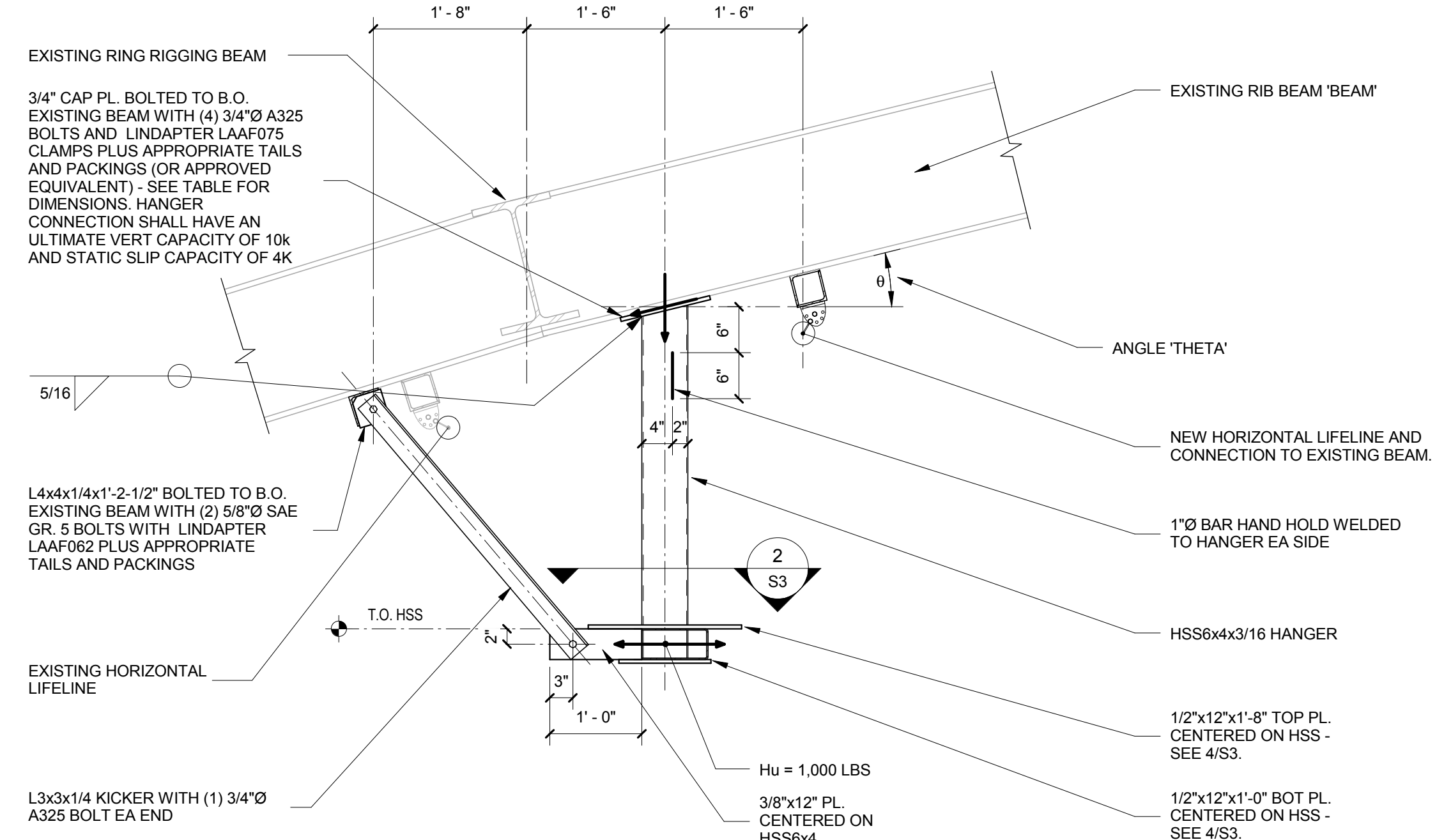
**RIGGING ACCESS BEAM
 PLAN AND DETAILS**

Project number 167141
 Date December 19, 2017

NOTE IN REGARD TO EXISTING CONDITIONS
 INFORMATION SHOWN ON THESE DRAWINGS, WITH RESPECT TO EXISTING CONDITIONS, TO THE BEST OF OUR KNOWLEDGE, REPRESENTS THE GENERAL AND CURRENT FIELD CONDITIONS. ZS LLC MAKES NO WARRANTY AS TO THE COMPLETENESS OR ACCURACY OF ANY AND ALL EXISTING CONDITIONS SHOWN ON THESE DRAWINGS. CONTRACTOR(S) SHALL VERIFY ALL EXISTING CONDITIONS RELATED TO THE NEW WORK AND REPORT TO THE ENGINEER FOR REVIEW ANY DISCREPANCIES BEFORE PERFORMING ANY WORK. ANY WORK PERFORMED PRIOR TO ENGINEER REVIEW AND SUBSEQUENT RESOLUTION OF DISCREPANCIES BY THE ENGINEER IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST OR BURDEN TO THE CONTRACT.

ZS
 10501 West Research Drive, Suite 207
 Milwaukee, Wisconsin 53226
 Phone: (414) 727-5000
 Fax: (414) 727-6666
 www.zsllc-us.com

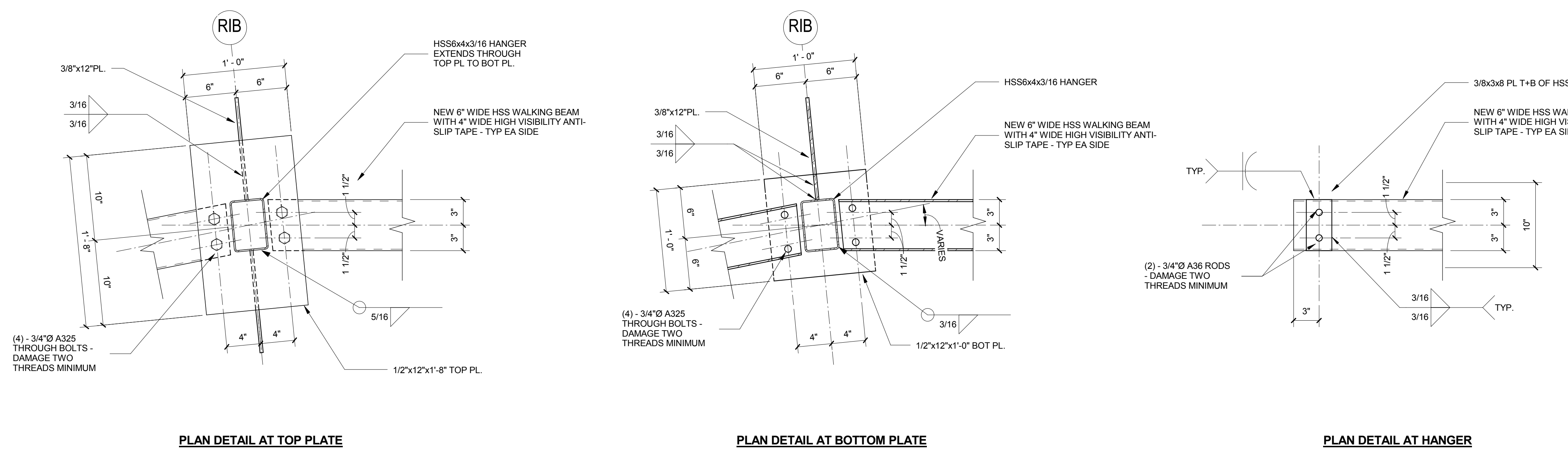
RING	THETA	BEAM			3/4" CAP PL			
		SIZE	bf	tf	C1	L1	L2	C2
C	20.36°	W18x77	8.787"	0.831"	9-5/8"	15"	14"	7"
D	17.21°	W18x64	8.715"	0.686"	9-9/16"	15"	14"	7"
E	13.76°	W18x60	7.558"	0.695"	8-3/8"	14"	14"	7"
F	9.76°	W18x50	7.500"	0.570"	8-5/16"	13-1/2"	14"	7"
G	5.82°	W18x45	7.477"	0.499"	8-5/16"	13-1/2"	14"	7"
H	2.20°	W18x45	7.477"	0.499"	8-5/16"	13-1/2"	14"	7"
H	2.20°	W16x36	6.992"	0.428"	7-13/16"	13"	14"	7"



NOTE: NEW RIGGING BEAMS HAVE BEEN COLORED YELLOW FOR ILLUSTRATIVE PURPOSES ONLY. SEE SPECS FOR PAINT DETAILS.

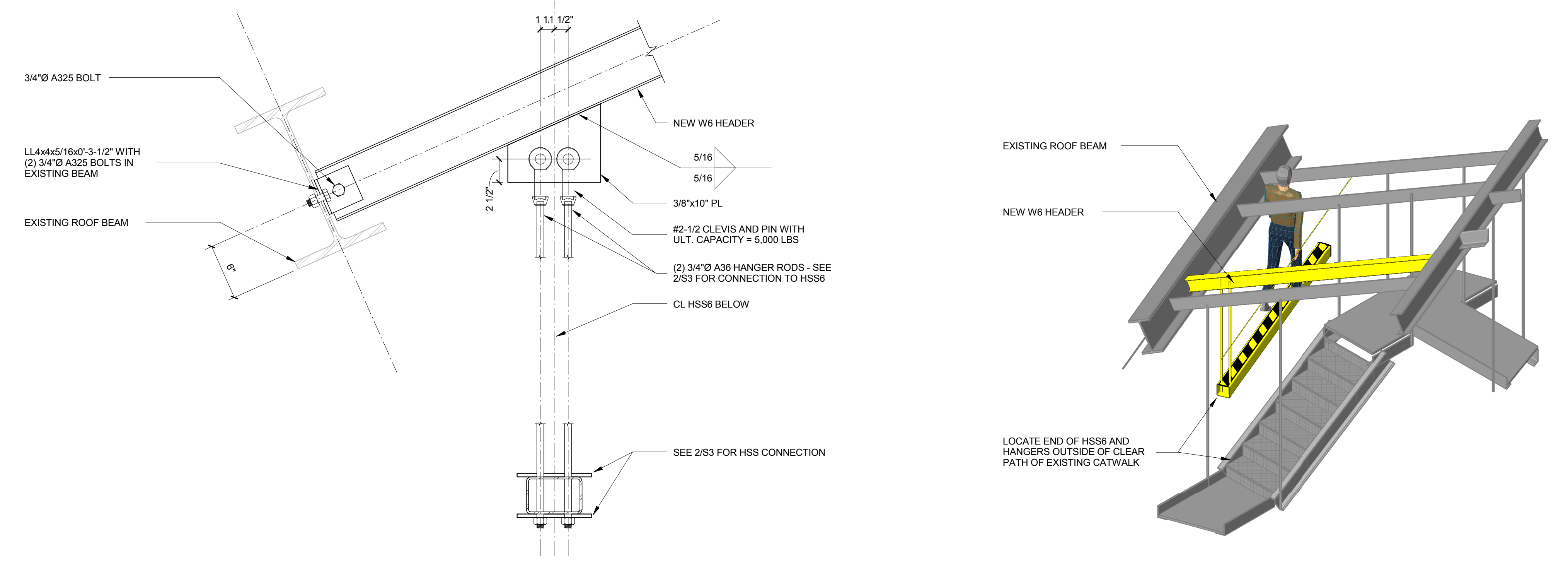
1 TYPICAL HSS HANGER

3/4" = 1'-0"



2 HSS CONNECTION DETAILS

1 1/2" = 1'-0"



NOTE: NEW RIGGING BEAMS HAVE BEEN COLORED YELLOW FOR ILLUSTRATIVE PURPOSES ONLY. SEE SPECS FOR PAINT DETAILS.

3 HANGER CONNECTION

1 1/2" = 1'-0"

ALLIANT ENERGY CENTER COLISEUM
RIGGING IMPROVEMENTS AND LIGHTING PLATFORM
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WISCONSIN 53713

No.	Description	Date

Client: ALLIANT ENERGY CENTER
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WI 53713

RIGGING ACCESS DETAILS

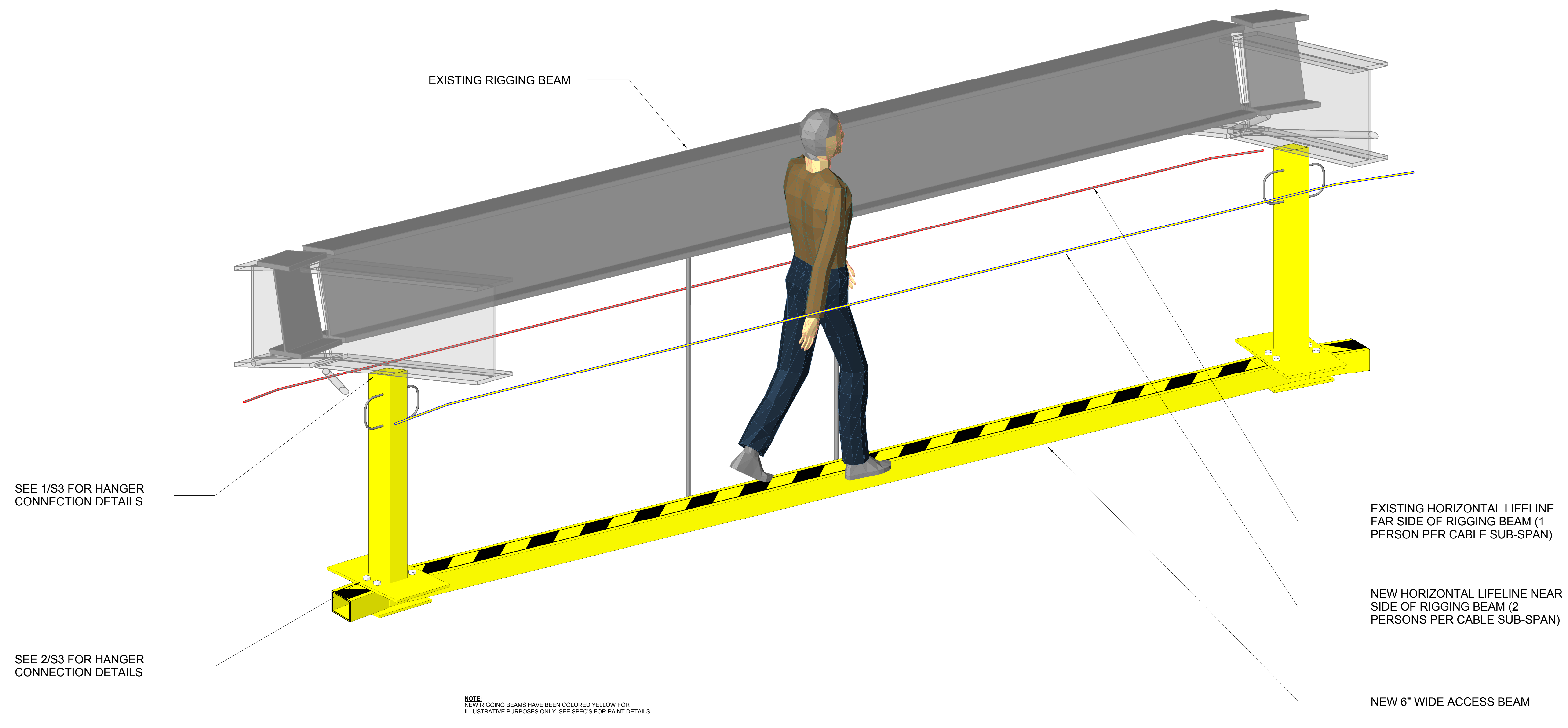
Project number: 167141
 Date: December 19, 2017

S3

NOTE IN REGARD TO EXISTING CONDITIONS
 INFORMATION SHOWN ON THESE DRAWINGS, WITH RESPECT TO EXISTING CONDITIONS, TO THE BEST OF OUR KNOWLEDGE, REPRESENT THE GENERAL AND CURRENT FIELD CONDITIONS. ZSIC MAKES NO WARRANTY AS TO THE COMPLETENESS OR ACCURACY OF ANY AND ALL EXISTING CONDITIONS SHOWN ON THESE DRAWINGS. CONTRACTOR(S) SHALL VERIFY ALL EXISTING CONDITIONS RELATED TO THE NEW WORK AND REPORT TO THE ENGINEER FOR REVIEW ANY DISCREPANCIES BEFORE PERFORMING ANY WORK. ANY WORK PERFORMED PRIOR TO ENGINEER REVIEW AND SUBSEQUENT RESOLUTION OF DISCREPANCIES BY THE ENGINEER IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST OR BURDEN TO THE CONTRACT.

ZS
 10501 West Research Drive, Suite 207
 Milwaukee, Wisconsin 53226
 Phone: (414) 727-5000
 Fax: (414) 727-6666
 www.zsfc-us.com

**ALLIANT ENERGY CENTER COLISEUM
 RIGGING IMPROVEMENTS AND LIGHTING PLATFORM**
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WISCONSIN 53713



2 TYPICAL ACCESS BEAM ISOMETRIC VIEW

No.	Description	Date

Client:
 ALLIANT ENERGY CENTER
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WI 53713

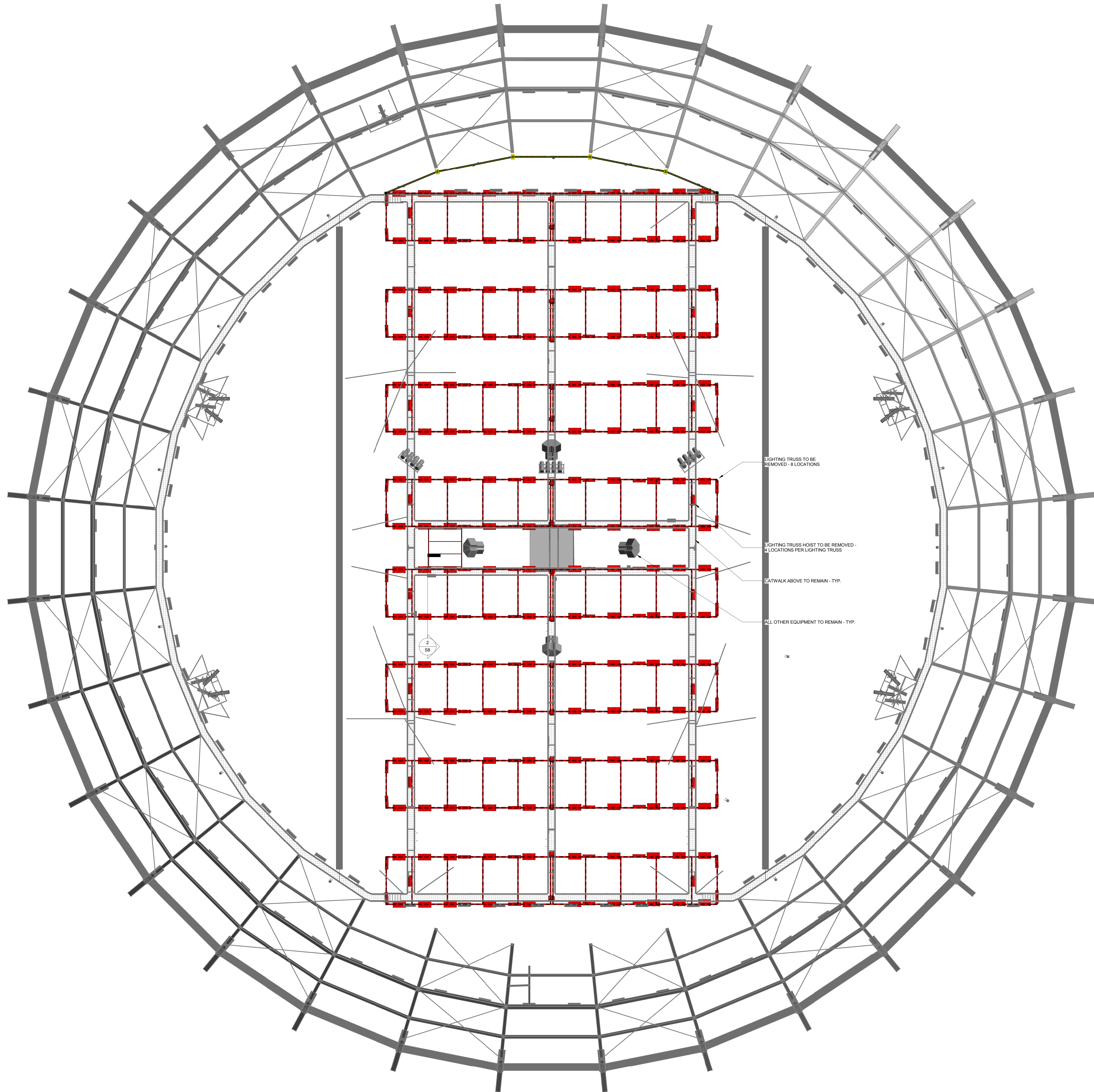
RIGGING BEAM ACCESS
 ISOMETRIC VIEWS

Project number: 167141
 Date: December 19, 2017

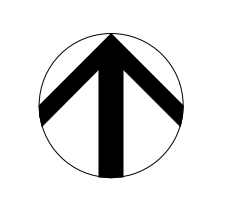
NOTE IN REGARD TO EXISTING CONDITIONS
 INFORMATION SHOWN ON THESE DRAWINGS, WITH RESPECT TO EXISTING CONDITIONS, TO THE BEST OF OUR KNOWLEDGE, REPRESENT THE GENERAL AND CURRENT FIELD CONDITIONS. ZSLLC MAKES NO WARRANTY AS TO THE COMPLETENESS OR ACCURACY OF ANY AND ALL EXISTING CONDITIONS SHOWN ON THESE DRAWINGS. CONTRACTOR(S) SHALL VERIFY ALL EXISTING CONDITIONS RELATED TO THE NEW WORK AND REPORT TO THE ENGINEER FOR REVIEW ANY DISCREPANCIES BEFORE PERFORMING ANY WORK. ANY WORK PERFORMED PRIOR TO ENGINEER REVIEW AND SUBSEQUENT RESOLUTION OF DISCREPANCIES BY THE ENGINEER IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST OR BURDEN TO THE CONTRACT.

ZS
 10501 West Research Drive, Suite 207
 Milwaukee, Wisconsin 53226
 Phone: (414) 727-5000
 Fax: (414) 727-6666
 www.zsllc-us.com

**ALLIANT ENERGY CENTER COLISEUM
 RIGGING IMPROVEMENTS AND LIGHTING PLATFORM
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WISCONSIN 53713**



1 LIGHTING TRUSS DEMO PLAN
 3/32" = 1'-0"



No.	Description	Date

Client:
 ALLIANT ENERGY CENTER
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WI 53713

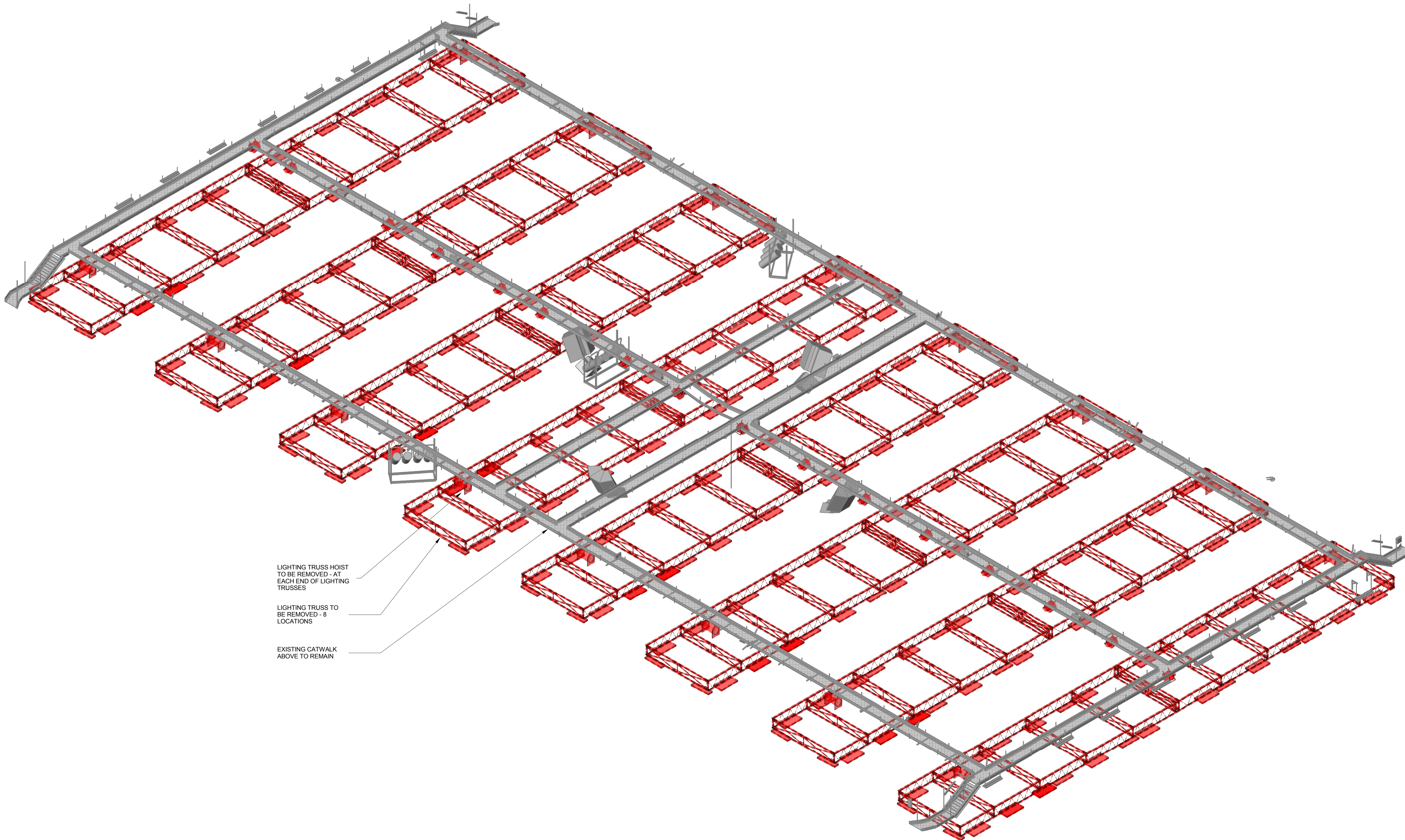
LIGHTING TRUSS DEMO PLAN

Project number 167141
 Date December 19, 2017

NOTE IN REGARD TO EXISTING CONDITIONS
 INFORMATION SHOWN ON THESE DRAWINGS, WITH RESPECT TO EXISTING CONDITIONS, TO THE BEST OF OUR KNOWLEDGE, REPRESENTS THE GENERAL AND CURRENT FIELD CONDITIONS. ZSLC MAKES NO WARRANTY AS TO THE COMPLETENESS OR ACCURACY OF ANY AND ALL EXISTING CONDITIONS SHOWN ON THESE DRAWINGS. CONTRACTORS SHALL VERIFY ALL EXISTING CONDITIONS RELATED TO THE NEW WORK AND REPORT TO THE ENGINEER ANY DISCREPANCIES BEFORE PERFORMING ANY WORK. ANY WORK PERFORMED PRIOR TO ENGINEER REVIEW AND SUBSEQUENT RESOLUTION OF DISCREPANCIES BY THE ENGINEER IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST OR BURDEN TO THE CONTRACT.

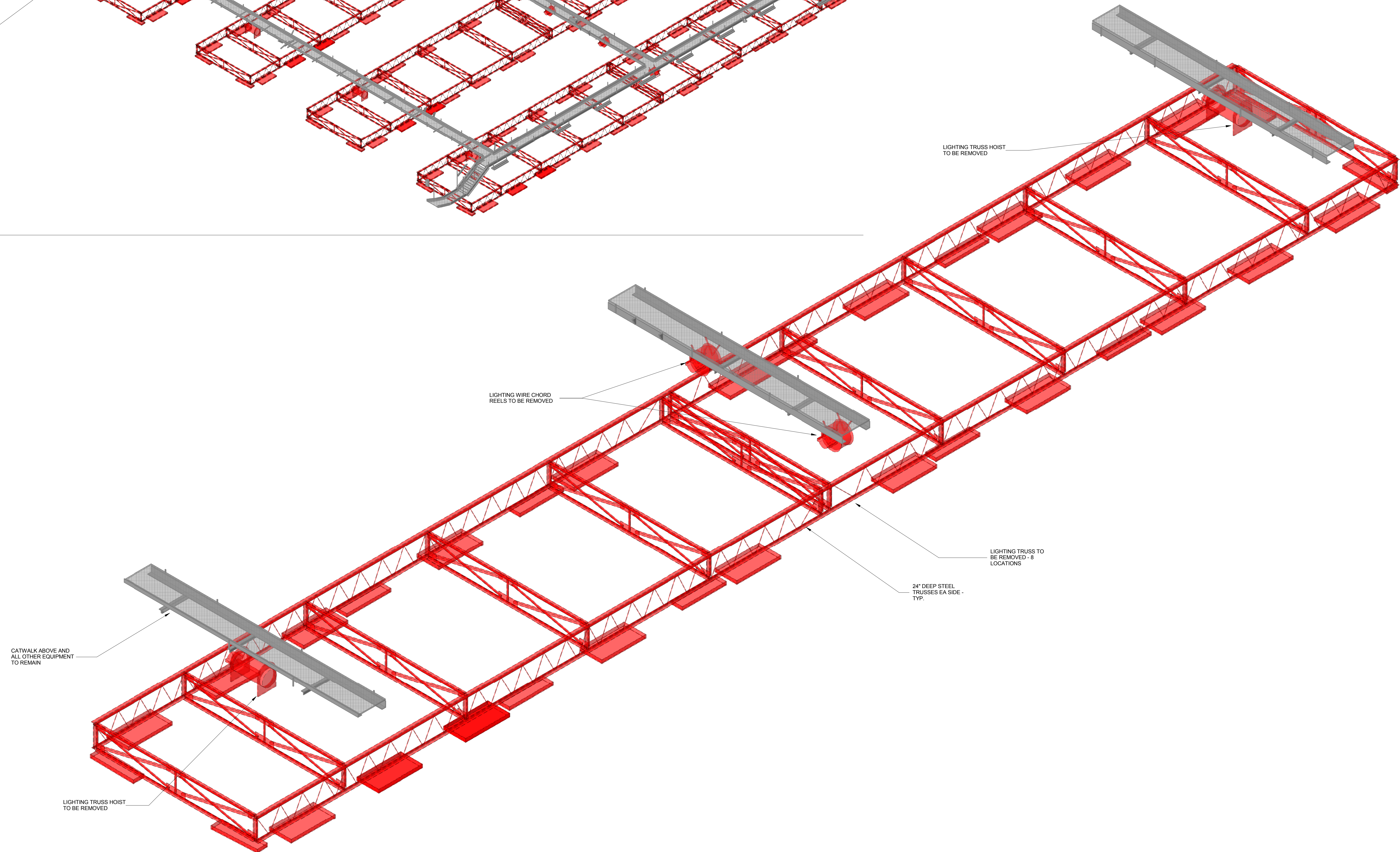
ZS
 10501 West Research Drive, Suite 207
 Milwaukee, Wisconsin 53226
 Phone: (414) 727-5000
 Fax: (414) 727-6666
 www.zslc-us.com

**ALLIANT ENERGY CENTER COLISEUM
 RIGGING IMPROVEMENTS AND LIGHTING PLATFORM
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WISCONSIN 53713**



1 LIGHTING TRUSS DEMO ISOMETRIC VIEW

SEE SHEET E101 FOR ADDITIONAL ELECTRICAL DEMOLITION SCOPE



2 ENLARGED LIGHTING TRUSS DEMO ISOMETRIC VIEW

SEE SHEET E101 FOR ADDITIONAL ELECTRICAL DEMOLITION SCOPE

No.	Description	Date

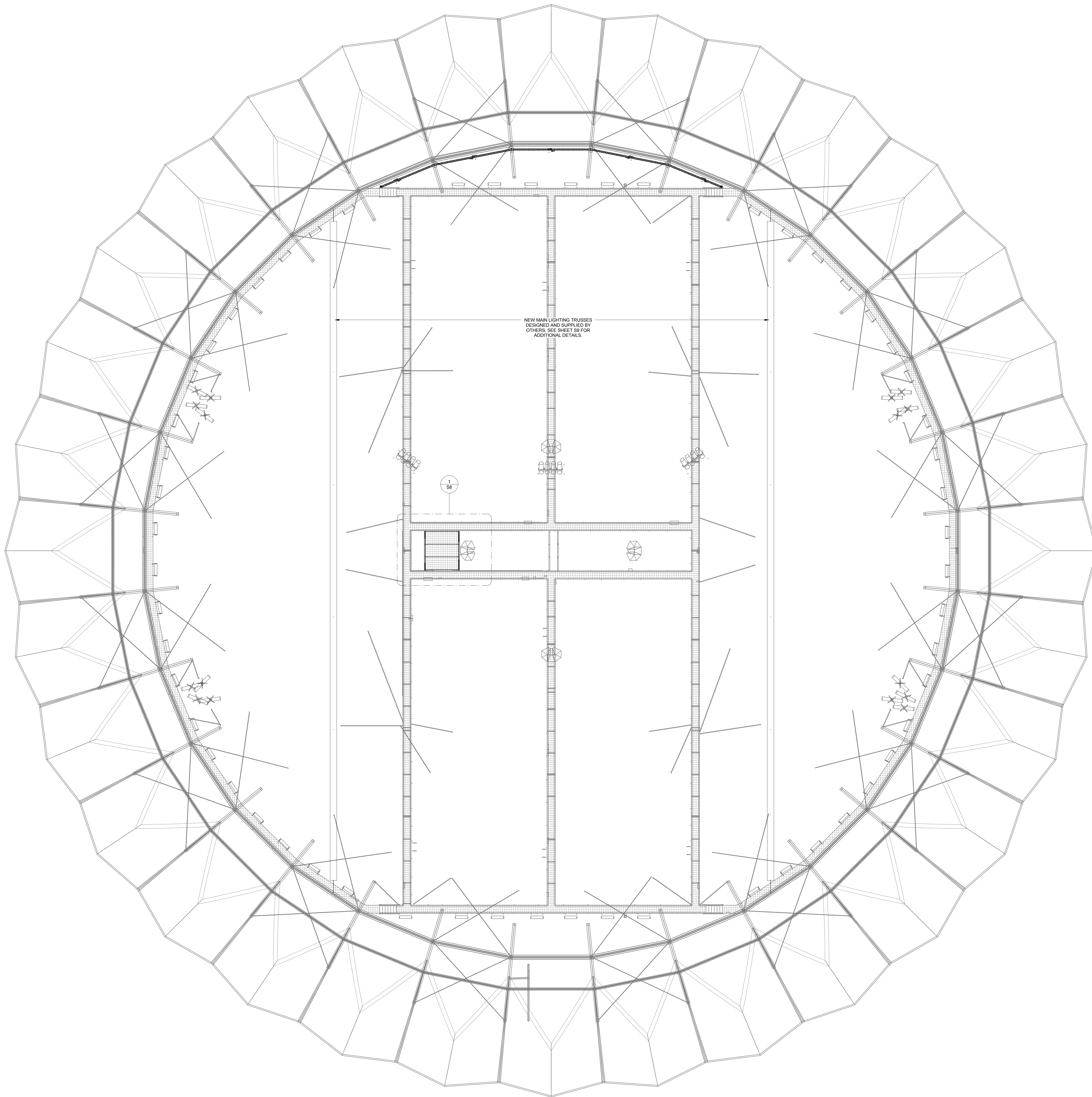
Client:
 ALLIANT ENERGY CENTER
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WI 53713

LIGHTING TRUSS DEMO ISOMETRIC VIEWS

Project number: 167141
 Date: December 19, 2017

NOTE IN REGARD TO EXISTING CONDITIONS
 INFORMATION SHOWN ON THESE DRAWINGS, WITH RESPECT TO EXISTING CONDITIONS, TO THE BEST OF OUR KNOWLEDGE, REPRESENT THE GENERAL AND CURRENT FIELD CONDITIONS. ZS&C MAKES NO WARRANTY AS TO THE COMPLETENESS OR ACCURACY OF ANY AND ALL EXISTING CONDITIONS SHOWN ON THESE DRAWINGS. CONTRACTOR(S) SHALL VERIFY ALL EXISTING CONDITIONS RELATED TO THE NEW WORK AND REPORT TO THE ENGINEER BEFORE REVIEW AND RESOLUTION OF DISCREPANCIES BEFORE PERFORMING ANY WORK. ANY WORK PERFORMED PRIOR TO ENGINEER REVIEW AND SUBSEQUENT RESOLUTION OF DISCREPANCIES BY THE ENGINEER IS SUBJECT TO REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST OR BURDEN TO THE CONTRACT.

ZS
 10501 West Research Drive, Suite 207
 Milwaukee, Wisconsin 53226
 Phone: (414) 727-5000
 Fax: (414) 727-6666
 www.zsfc-us.com



**ALLIANT ENERGY CENTER COLISEUM
 RIGGING IMPROVEMENTS AND LIGHTING PLATFORM**
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WISCONSIN 53713

No.	Description	Date

Client:
 ALLIANT ENERGY CENTER
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WI 53713

**EXISTING CATWALK
 PLAN**

Project number: 167141
 Date: December 19, 2017

GENERAL

- THE FOLLOWING NOTES SHALL APPLY TO ALL CONTRACTORS, SUBCONTRACTORS, AND SUPPLIERS ENGAGED IN EXECUTION OF THE WORK SHOWN ON THESE PLANS.
- ALL CONSTRUCTION SHALL BE EXECUTED IN CONFORMANCE WITH THE FOLLOWING:
 - PLANS AND SPECIFICATIONS
 - ALL LOCAL, BUILDING AND SAFETY CODES
 - STATE OF WISCONSIN BUILDING CODE AND IBC 2009
- CONTRACTOR TO CROSS CHECK WITH ELECTRICAL PLANS FOR OTHER DETAILS, DIMENSIONS, ELEVATIONS, ETC. ENGINEER TO BE NOTIFIED OF ANY VARIANCE BEFORE CONTRACTOR BEGINS WORK OR SHOP DRAWINGS. RESOLVE APPARENT DEFICIENCIES, CONTRADICTIONS, INCONSISTENCIES AND AMBIGUITIES IN CONTRACT DOCUMENTS WITH ENGINEER DURING THE BID PERIOD. IF ANY SUCH CONDITION CAN NOT BE RESOLVED DURING THE BID PERIOD, SUBMIT BID USING THE INTERPRETATION RESULTING IN THE GREATEST COST AND RESOLVE SUCH ITEMS PRIOR TO BEGINNING THE WORK.
- IN NO CASE SHALL STRUCTURAL REPAIRS, CORRECTIONS, ALTERATIONS OR WORK AFFECTING A STRUCTURAL MEMBER BE MADE, UNLESS APPROVED BY ENGINEER. SUBMIT DETAILS AND CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER AND EMPLOYED BY CONTRACTOR. A/E DESIGN AND/OR REVIEW IS CONTRACTOR'S EXPENSE.
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES BUT IS NOT LIMITED TO, THE ADDITION OF WHATEVER TEMPORARY BRACING, CUTS OR TRUCKINGS AS MAY BE NECESSARY. ALL CONSTRUCTION AND ERECTION TO CONFORM TO OSHA REQUIREMENTS.
- WHERE DETAILS ARE CALLED FOR IN A CERTAIN PORTION OF THE BUILDING, THEY SHALL BE DUPLICATED IN SIMILAR PORTIONS OF THE BUILDING UNLESS SHOWN OTHERWISE.
- PRIOR TO CONSTRUCTION AND SHOP DRAWINGS, CONTRACTOR TO VERIFY EXISTING BUILDING DIMENSIONS, ELEVATIONS AND CONDITIONS AND REPORT ANY NON-COMFORMANCE WITH DESIGN DRAWINGS.
- PROVIDE A COMPLETE SET OF CONTRACT DRAWINGS, SPECIFICATIONS, AND ADDENDA TO ALL ENGINEERS RESPONSIBLE FOR COMPONENT DESIGNS, E.G. LIGHTING TRUSSES, ETC.
- A/E SERVICES RELATED TO SUBSTITUTIONS OR CHANGES PROPOSED BY THE CONTRACTOR OR TRADE SUBCONTRACTORS ARE THE CONTRACTOR'S EXPENSE. DO NOT RELY ON ACCEPTANCE IN PREPARING BIDS. THE A/E MAY REJECT WITHOUT CAUSE.

DESIGN LOADS

- ROOF LIVE LOADS: 20 PSF
- FLOOR LIVE LOADS:
 - ELEVATED PLATFORMS: 60 PSF OR 300 LB CONCENTRATED
 - LIGHTING TRUSSES: SEE ELEVATIONS
- SNOW LOADS:
 - CODE: ASCE 7-05
 - TERRAIN CATEGORY: C
 - GROUND SNOW (Ps): 30 PSF
 - EXPOSURE FACTOR (Ce): 0.9
 - TEMPERATURE FACTOR (Ct): 1.0
 - IMPORTANCE FACTOR (Ib): 1.1
 - FLAT ROOF SNOW (P): 20.8 PSF

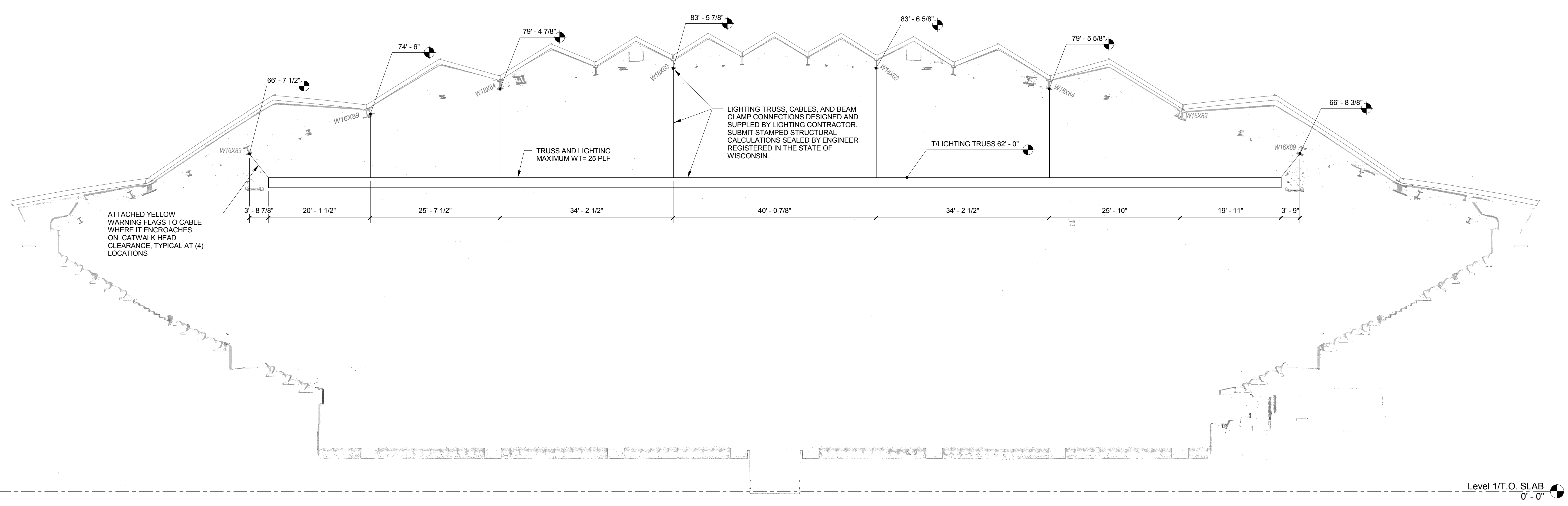
STRUCTURAL STEEL

- STRUCTURAL STEEL WORK SHALL CONFORM TO THE FOLLOWING LATEST EDITION:
 - A. AISC - "SPECIFICATION FOR DESIGN, FABRICATION AND ERECTION OF STEEL FOR BUILDINGS"
 - B. AISC - "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"
 - C. AWS D1.1 - "STRUCTURAL WELDING CODE - STEEL"
 - D. AISC - "STRUCTURAL STEEL DETAILING MANUAL"
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:
 - NOT ROLLED W AND WT SHAPES: ASTM A992 (Fy = 50 KSI)
 - ANGLES, CHANNELS, AND PLATES: ASTM A36 (Fy = 36 KSI)
 - S, M & HP SHAPES: ASTM A36 (Fy = 36 KSI)
 - STEEL PIPE: ASTM A53 GR B (Fy = 35 KSI)
 - RECTANGULAR HSS: ASTM A500 GR B (Fy = 45 KSI)
 - ROUND HSS: ASTM A500 GR B (Fy = 45 KSI)
 - HIGH STRENGTH BOLTS: ASTM A325
 - HEAVY HEX NUTS: ASTM A563
 - HARDENED STEEL WASHERS: ASTM F436
 - ANCHOR RODS: ASTM F1554 GR 36 (Fy = 36 KSI)
 - THREADED RODS: ASTM A38 (Fy = 36 KSI)
 - HEADED STUD ANCHORS: ASTM A108
- PROVIDE 2 MIL THICKNESS GREY OXIDE PRIMER ON ALL STEEL SURFACES UNLESS NOTED.
- THE MINIMUM FILLET WELD SIZE SHALL NOT BE LESS THAN 3/16" UNLESS NOTED.
- ALL WELDS SHALL USE WELD METAL CONFORMING TO E70XX AND CONFORMING TO AWS WELDING PROCEDURES AND STANDARDS.
- ALL WELDS SHALL BE MADE BY AWS CERTIFIED WELDERS CERTIFIED IN THE POSITION INWHICH THE WELD IS TO BE MADE.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACING AND SUPPORTS AS REQUIRED FOR THE SAFE ERECTION OF ALL STEEL.
- STRUCTURAL STEEL SHALL BE TRUE AND PLUMB BEFORE FINAL BOLTING OR WELDING OF CONNECTIONS.
- THE CONTRACTOR SHALL NOT MODIFY OR CUT ANY STRUCTURAL STEEL WITHOUT WRITTEN APPROVAL FROM THE EOR.
- THE CONTRACTOR SHALL FIELD TOUCH UP ALL ABRASIONS, BURNS, AND SIMILAR DEFECTS IN PAINT OF STRUCTURAL STEEL.

WORK BY OTHERS

CONSTRUCTION MEANS AND METHODS ARE THE CONTRACTORS RESPONSIBILITY AND SHALL BE ENGINEERED AND PROVIDED BY THE TRADE CONTRACTOR. SUCH WORK INCLUDES BUT IS NOT LIMITED TO:

- EVALUATION OF STRUCTURE FOR CONSTRUCTION EQUIPMENT LOADS
- EVALUATION OF STRUCTURE AND INSTALLATION OF ANY NECESSARY SHORING FOR MOVING LOADS DURING INSTALLATION OF HEAVY EQUIPMENT.



5 TYPICAL ELEVATION AT MAIN LIGHT TRUSSES
3/32" = 1'-0"



10501 West Research Drive, Suite 207
 Milwaukee, Wisconsin 53226
 Phone: (414) 727-5000
 Fax: (414) 727-6666
 www.zslc-us.com

**ALLIANT ENERGY CENTER COLISEUM
 RIGGING IMPROVEMENTS AND LIGHTING PLATFORM**
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WISCONSIN 53713

No.	Description	Date

Client:
 ALLIANT ENERGY CENTER
 1919 ALLIANT ENERGY CENTER WAY
 MADISON, WI 53713

**GENERAL NOTES &
 LIGHTING TRUSS
 ELEVATION**

Project number 167141
 Date December 19, 2017