

RFB NO. 316047



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. 316047 CITY COUNTY BUILDING COOLING TOWER REPLACEMENT 210 MARTIN LUTHER KING JR BOULEVARD MADISON, WISCONSIN

Due Date / Time: **TUESDAY, DECEMBER 6TH, 2016 / 2:00 P.M.**

Location: **PUBLIC WORKS OFFICE**

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

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

FOR INFORMATION ON THIS REQUEST FOR BIDS, PLEASE CONTACT:

ROB NEBEL, PROJECT MANAGER
TELEPHONE NO.: 608/267-0119
FAX NO.: 608/267-1533
E-MAIL: NEBEL@COUNTYOFDANE.COM

Page Intentionally Left Blank

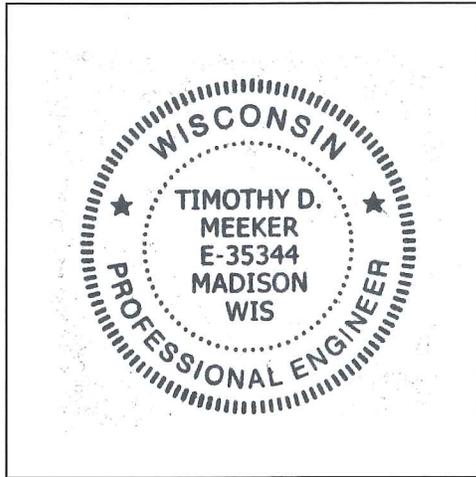
SEALS PAGE

BID NO. 316047

**PROJECT: COOLING TOWERS REPLACEMENT
CITY COUNTY BUILDING**

MECHANICAL ENGINEER

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Wisconsin.



A handwritten signature in blue ink, appearing to read "T. D. Meeker", written over a horizontal line.

Timothy D. Meeker - Registration No. E35344

Dated: 11/15/2016

Page Intentionally Left Blank

TABLE OF CONTENTS FOR RFB NO. 316047

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

- Project Manual Cover Page
- Seals 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 74 19 - Construction Waste Management, Disposal & Recycling

DIVISION 09 - FINISHES

- 05 10 00 - Structural Metal Framing

DIVISION 23 - HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

- 23 05 00 - Common Work Results for HVAC
- 23 05 14 - Variable Frequency Drives
- 23 05 15 - Piping Specialties
- 23 05 23 - General Duty Valves for HVAC
- 23 09 23 - Direct Digital Control for HVAC
- 23 21 13 - Hydronic Piping
- 23 65 00 - Cooling Towers

DRAWINGS

Plot drawings on 30" x 42" (ARCH E1) paper for correct scale or size.

- T100 - Titlesheet
- ME000 - Abbreviations and Symbols
- ME100 - Overall Existing Site Photos
- ME101 - Existing Cooling Tower Photos
- ME200 - Penthouse and Roof Plan – Demolition – HVAC and Electrical
- ME300 - Penthouse and Roof Plan – New Work – HVAC and Electrical
- ME400 - Elevations and Details – HVAC and Structural
- ME800 - Details and Schedules – HVAC and Electrical

Page Intentionally Left Blank

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, DECEMBER 6, 2016

REQUEST FOR BIDS NO. 316047

CITY COUNTY BUILDING COOLING TOWER REPLACEMENT

**210 MARTIN LUTHER KING JR BOULEVARD
MADISON, WISCONSIN**

Dane County is inviting Bids for construction services for the replacement of two cooling towers at the City County Building. Work consists of removing two cooling towers with associated rooftop piping and structural framing, to be replaced with two new cooling towers and piping with structural framing at the same location. 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 Tuesday November 15, 2016** by downloading it from countyofdane.com/pwbids. Please call Rob Nebel, Project Manager, at 608/267-0119, 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 facility tour will be held Wednesday, November 23rd, 2016 at 11:00 a.m. at the City County Building, starting in room GA-8. Bidders are strongly encouraged to attend this tour.

**PUBLISH: NOVEMBER 15 AND 22, 2016 - WISCONSIN STATE JOURNAL
 NOVEMBER 15 AND 22, 2016 - THE DAILY REPORTER**

Page Intentionally Left Blank



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	1
3. INTERPRETATION	2
4. QUALIFICATIONS OF BIDDER (CONTRACTOR AND SUBCONTRACTOR)....	2
5. BID GUARANTEE	3
6. WITHDRAWAL OF BIDS.....	3
7. CONTRACT FORM.....	3
8. CONTRACT INTERESTS BY COUNTY PUBLIC OFFICIALS	3
9. EMERGING SMALL BUSINESS PROVISIONS	4
10. METHOD OF AWARD - RESERVATIONS	5
11. SECURITY FOR PERFORMANCE AND PAYMENTS	6
12. TAXES.....	6
13. SUBMISSION OF BIDS	7
14. SUBCONTRACTOR LISTING.....	7
15. ALTERNATE BIDS	7
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 Wednesday, November 23rd, 2016 at 11:00 a.m. at the City County Building in room GA-8. Bidders are strongly encouraged to attend this tour.
- 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.

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 or Architect / 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 Manager 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 Manager 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 Manager or designee all such information and data for this purpose as County's Public Works Project Manager 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 a corporation, it is necessary that current certified copy of resolution or other official act of directors of corporation be submitted showing that person who signs Contract is authorized to sign contracts for corporation. It is also necessary that corporate seal be affixed to resolution, contract, and performance and payment bonds. If your corporation has no seal, it is required that above documents include statement or notation to effect that corporation has no seal.

12. TAXES

- A. 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. Bidder shall carefully read requests for Alternate Bids, and thoroughly examine Drawings and Specifications to determine extent various changes and conditions will affect Bid.
- B. Space is provided in Bid Form for requested Alternate Bids. Failure to submit bid for any requested Alternate Bids may result in rejection of entire Bid.

- C. Bidder shall state amount to be added / subtracted to Base Bid for providing alternates, including all incidentals, omissions, additions, and adjustments as may be necessary or required by such changes. If there is no difference in price, Bidder shall state, "No Change".
- D. Descriptions of requested Alternate Bids are as set forth in Construction Documents.

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: _____

Page Intentionally Left Blank

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: \$ _____

Page Intentionally Left Blank

FORM C

Page ___ of ___

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

(Copy this Form as necessary to provide complete information)

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)	_____	_____	_____	_____	_____	_____

Page Intentionally Left Blank

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

Page Intentionally Left Blank

Name of Bidding Firm: _____

BID FORM

BID NO. 316047

**PROJECT: COOLING TOWERS REPLACEMENT
CITY COUNTY BUILDING**

**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:

Dane County is inviting Bids for construction services for the replacement of two cooling towers at the City County Building. Work consists of removing two cooling towers with associated rooftop piping and structural framing, to be replaced with two new cooling towers and piping with structural framing at the same location.

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

ALTERNATE BID 1 - LUMP SUM:

Deduct price for using Schedule 80 PVC pipe instead of HDPE for condenser water supply and return piping.

_____ and _____ /100 Dollars
Written Price

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

ALTERNATE BID 2 – LUMP SUM:

Add pricing for the inclusion of an automatic basin sweeper system.

_____ and _____ /100 Dollars
Written Price

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

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

Addendum No(s). _____ through _____

Dated _____

Dane County Facilities Management must have this project completed by April 15, 2017. Assuming this Work can be started by March 1, 2017, 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

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 25.016. 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.nlrb.gov and werc.wi.gov.

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

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

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

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

Page Intentionally Left Blank

COUNTY OF DANE

PUBLIC WORKS CONSTRUCTION CONTRACT

Contract No. _____ Bid No. 316047

Authority: 2016 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 labor and materials for the City County Building Cooling Towers Replacement [including Alternate Bid[s] X, Y & Z (if applicable)] ("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 JDR Engineering, Inc. (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 25.016 of the Dane County Code of Ordinances, which pertains to domestic partnership benefits.

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

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

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

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

11. CONTRACTOR must be pre-qualified as a Best Value Contractor with Dane County Public Works Engineering Division before award of Contract. Subcontractors must be pre-qualified ten (10) 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

Page Intentionally Left Blank

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.

Page Intentionally Left Blank

EQUAL BENEFITS COMPLIANCE PAYMENT CERTIFICATION FORM

PURPOSE

25.016(8) 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 25.016 "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 25.016 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.

Page Intentionally Left Blank

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 time give Department access thereto.
- H. By stamping and submitting Shop Drawings, Product Data and Samples, Contractor thereby represents that he or she has or will determine and verify all field measurements, field construction criteria, materials, catalog numbers, and similar data and that he or she has checked and coordinated each Shop Drawing, Product Data and Sample with requirements of the Work and of Construction Documents. 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 25.016, Dane County Ordinances, contract compliance officer may withhold payments on Contract; terminate, cancel or suspend Contract in whole or in part; or, after due process hearing, deny Contractor right to participate in bidding on future County contracts for period of one year after first violation is found and for period of three years after second or subsequent violation is found.

46. USE AND OCCUPANCY PRIOR TO ACCEPTANCE

- A. Contractor agrees to use and occupancy of portion or unit of the Work before formal acceptance by Department, provided Department:
 - 1. Secures written consent of Contractor; except when in opinion of Public Works Project 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:
		PERIOD TO:	OWNER <input type="checkbox"/>
		CONTRACT FOR:	ARCHITECT <input type="checkbox"/>
FROM CONTRACTOR:	VIA ARCHITECT:	CONTRACT DATE:	CONTRACTOR <input type="checkbox"/>
		PROJECT NOS:	FIELD <input type="checkbox"/>
			OTHER <input type="checkbox"/>

<p>CONTRACTOR'S APPLICATION FOR PAYMENT</p> <p>Application is made for payment, as shown below, in connection with the Contract. AIA Document G703™, Continuation Sheet, is attached.</p> <p>1. ORIGINAL CONTRACT SUM \$ _____</p> <p>2. NET CHANGE BY CHANGE ORDERS \$ _____</p> <p>3. CONTRACT SUM TO DATE (Line 1 + 2) \$ _____</p> <p>4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) \$ _____</p> <p>5. RETAINAGE:</p> <p style="margin-left: 20px;">a. _____ % of Completed Work (Columns D + E on G703) \$ _____</p> <p style="margin-left: 20px;">b. _____ % of Stored Material (Column F on G703) \$ _____</p> <p style="margin-left: 20px;">Total Retainage (Lines 5a + 5b, or Total in Column I of G703) \$ _____</p> <p>6. TOTAL EARNED LESS RETAINAGE \$ _____ (Line 4 minus Line 5 Total)</p> <p>7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$ _____ (Line 6 from prior Certificate)</p> <p>8. CURRENT PAYMENT DUE \$ _____</p> <p>9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 minus Line 6) \$ _____</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <thead> <tr> <th style="text-align: left;">CHANGE ORDER SUMMARY</th> <th style="text-align: right;">ADDITIONS</th> <th style="text-align: right;">DEDUCTIONS</th> </tr> </thead> <tbody> <tr> <td>Total changes approved in previous months by Owner</td> <td style="text-align: right;">\$ _____</td> <td style="text-align: right;">\$ _____</td> </tr> <tr> <td>Total approved this month</td> <td style="text-align: right;">\$ _____</td> <td style="text-align: right;">\$ _____</td> </tr> <tr> <td style="text-align: right;">TOTAL</td> <td style="text-align: right;">\$ _____</td> <td style="text-align: right;">\$ _____</td> </tr> <tr> <td>NET CHANGES by Change Order</td> <td style="text-align: right;">\$ _____</td> <td style="text-align: right;">\$ _____</td> </tr> </tbody> </table>	CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS	Total changes approved in previous months by Owner	\$ _____	\$ _____	Total approved this month	\$ _____	\$ _____	TOTAL	\$ _____	\$ _____	NET CHANGES by Change Order	\$ _____	\$ _____	<p>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.</p> <p>CONTRACTOR: By: _____ Date: _____ State of: _____ Country of: _____ Subscribed and sworn to before me this _____ day of _____</p> <p>Notary Public: My commission expires: _____</p> <hr/> <p>ARCHITECT'S CERTIFICATE FOR PAYMENT</p> <p>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.</p> <p>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.)</p> <p>ARCHITECT: By: _____ Date: _____</p> <p>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.</p>
CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS														
Total changes approved in previous months by Owner	\$ _____	\$ _____														
Total approved this month	\$ _____	\$ _____														
TOTAL	\$ _____	\$ _____														
NET CHANGES by Change Order	\$ _____	\$ _____														

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 © 1953, 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.

 **AIA** Document G703™ – 1992

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>
			D FROM PREVIOUS APPLICATION <i>(D-E)</i>	E THIS PERIOD				
<p>Sample</p>								
<p>GRAND TOTAL</p>								

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. PREVAILING WAGE RATE DETERMINATION

- A. A prevailing wage rate determination (PWRD) may be required on this project depending on the total project cost. A PWRD is not required if the total bid is below \$100,000. If the bid is \$100,000 or more, the Contractor shall apply the PWRD. The PWRD shall also be applied if the bid is a single trade project for \$48,000 or more. A single trade project is one in which no single trade accounts for eighty-five percent (85%) or more of the total labor cost of the project.
- B. These supplements shall modify, delete, and / or add to General Conditions of Contract. Where any article, paragraph, or subparagraph in General Conditions of Contract is supplemented by one of these paragraphs, provisions of such article, paragraph, or subparagraph shall remain in effect and supplementary provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in General Conditions of Contract is amended, voided, or superseded by any of these paragraphs, provisions of such article, paragraph, or subparagraph not so amended, voided, or superseded shall remain in effect.
 - 1. General Conditions of Contract Article 47, "Minimum Wages", paragraph B. Following Prevailing Wage Rate Determination No. 201602567 is added to General Conditions of Contract.
- C. These State of Wisconsin forms, hereinafter set forth in this section, shall be filled out and submitted to Department of Public Works, Highway & Transportation:
 - 1. Disclosure of Ownership (ERD-7777)
 - 2. Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination (ERD-5724)
 - 3. List of Agents and Subcontractors (Page 2 - ERD-5724)
 - 4. Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination (ERD-10584)
 - 5. List of Agents and Subcontractors (Page 2 - ERD-10584)
 - 6. Request To Employ Subjourneyperson (ERD-10880)
- D. At a minimum, these wage rates must be displayed in a place where all workers can access them, but not inside the job trailer. If this isn't easily done based on job conditions, the State requires they be displayed at a library or other public building.

ISSUE DATE: 11/2/2016

PROJECT:

CITY COUNTY BUILDING COOLING TOWERS REPLACEMENT
MADISON CITY, DANE COUNTY, WI
Determination No. 201602567 [Owner Project No. 316047]

PROJECT OWNER:

ROBERT NEBEL, ASSISTANT PUBLIC WORKS DIRECTOR
DANE COUNTY
1919 ALLIANT ENERGY CENTER WAY
MADISON, WI 53713

REQUESTER:

ROBERT NEBEL, ASSISTANT PUBLIC WORKS DIRECTOR
DANE COUNTY
1919 ALLIANT ENERGY CENTER WAY
MADISON, WI 53713

ADDITIONAL CONTACT:

NOTE: The Requester must provide a copy of this Project Determination and enclosures to the Project Owner and Additional Contact.

The department received an application for prevailing wage rate determination for the above-captioned project. The department conducted a survey to determine the prevailing wage rate for the trade(s) or occupation(s) needed to complete the project. The survey's findings appear in the attached project determination.

If you believe that the wage rate for any trade or occupation does not accurately reflect the prevailing wage rate in the city, village or town where the project is located, you may ask the department to conduct an administrative review of such wage rate. You must submit this request in writing within 30 days from the date indicated above. Additionally, your request must include wage rate information from at least three similar projects in the city, village or town where the proposed project is located and on which some work has been performed by the contested trade(s) during the current survey period and was previously considered by the department in issuing the attached determination. See DWD 290.10 of the Wisconsin Administrative Code and either s. 66.0903(3)(br), Stats., or s. 103.49(3)(c), Stats., for a complete explanation of the administrative review process.

Enclosures

It is hereby ordered that the prevailing wage rates set forth in the attached project determination shall only be applicable to the above referenced project. This order is a **FINAL ORDER** of the department unless a timely request for an administrative review is filed with the department.

ISSUED BY:

Equal Rights Division
Labor Standards Bureau
Construction Wage Standards Section
P.O. Box 8928, Madison, WI 53708-8928
(608)266-6861

Web Site: <http://dwd.wisconsin.gov/er/>

PREVAILING WAGE RATE DETERMINATION

Issued by the State of Wisconsin
Department of Workforce Development
Pursuant to s. 66.0903, Wis. Stats.
Issued On: 11/2/2016

DETERMINATION NUMBER: 201602567

EXPIRATION DATE: Prime Contracts MUST Be Awarded or Negotiated On Or Before 5/1/2017. If NOT, You MUST Reapply.

PROJECT NAME: CITY COUNTY BUILDING COOLING TOWERS REPLACEMENT
PROJECT NO: 316047

PROJECT LOCATION: MADISON CITY, DANE COUNTY, WI

CONTRACTING AGENCY: DANE COUNTY

CLASSIFICATION:	Contractors are responsible for correctly classifying their workers. Either call the Department of Workforce Development (DWD) with trade or classification questions or consult DWD's Dictionary of Occupational Classifications & Work Descriptions on the DWD website at: dwd.wisconsin.gov/er/prevailing_wage_rate/Dictionary/dictionary_main.htm .
OVERTIME:	Time and one-half must be paid for all hours worked: <ul style="list-style-type: none">- over 10 hours per day on prevailing wage projects- over 40 hours per calendar week- Saturday and Sunday- on all of the following holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25;- The day before if January 1, July 4 or December 25 falls on a Saturday;- The day following if January 1, July 4 or December 25 falls on a Sunday. Apply the time and one-half overtime calculation to whichever is higher between the Hourly Basic Rate listed on this project determination or the employee's regular hourly rate of pay. Add any applicable Premium or DOT Premium to the Hourly Basic Rate before calculating overtime. A DOT Premium (discussed below) may supersede this time and one-half requirement.
FUTURE INCREASE:	When a specific trade or occupation requires a future increase, you MUST add the full hourly increase to the "TOTAL" on the effective date(s) indicated for the specific trade or occupation.
PREMIUM PAY:	If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whenever such pay is applicable.
DOT PREMIUM:	This premium only applies to highway and bridge projects owned by the Wisconsin Department of Transportation and to the project type heading "Airport Pavement or State Highway Construction." DO NOT apply the premium calculation under any other project type on this determination.
APPRENTICES:	Pay apprentices a percentage of the applicable journey person's hourly basic rate of pay and hourly fringe benefit contributions specified in this determination. Obtain the appropriate percentage from each apprentice's contract or indenture.
SUBJOURNEY:	Subjourney wage rates may be available for some of the trades or occupations indicated below with the exception of laborers, truck drivers and heavy equipment operators. Any employer interested in using a subjourney classification on this project MUST complete Form ERD-10880 and request the applicable wage rate from the Department of Workforce Development PRIOR to using the subjourney worker on this project.

This document **MUST BE POSTED** by the **CONTRACTING AGENCY** in at least one conspicuous and easily accessible place **on the site of the project**. A local governmental unit may post this document at the place normally used to post public notices if there is no common site on the project. This document **MUST** remain posted during the entire time any worker is employed on the project and **MUST** be physically incorporated into the specifications and all contracts and subcontracts. If you have any questions, please write to the Equal Rights Division, Labor Standards Bureau, P.O. Box 8928, Madison, Wisconsin 53708 or call (608) 266-6861.

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

s. 66.0903 (1) (f) & s. 103.49 (1) (c) "PREVAILING HOURS OF LABOR" for any trade or occupation in any area means 10 hours per day and 40 hours per week and may not include any hours worked on a Saturday or Sunday or on any of the following holidays:

1. January 1.
2. The last Monday in May.
3. July 4.
4. The first Monday in September.
5. The 4th Thursday in November.
6. December 25.
7. The day before if January 1, July 4 or December 25 falls on a Saturday.
8. The day following if January 1, July 4 or December 25 falls on a Sunday.

s. 66.0903 (10) RECORDS; INSPECTION; ENFORCEMENT.

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

s. 66.0903 (11) LIABILITY AND PENALTIES.

(a) 1. Any contractor, subcontractor, or contractor's or subcontractor's agent who fails to pay the prevailing wage rate determined by the department under sub. (3) or who pays less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor is liable to any affected employee in the amount of his or her unpaid wages or his or her unpaid overtime compensation and in an additional amount as liquidated damages as provided under subd. 2., 3., whichever is applicable.

2. If the department determines upon inspection under sub. (10) (b) or (c) that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the department shall order the contractor to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages within a period specified by the department in the order.

3. In addition to or in lieu of recovering the liability specified in subd. 1. as provided in subd. 2., any employee for and in behalf of that employee and other employees similarly situated may commence an action to recover that liability in any court of competent jurisdiction. If the court finds that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the court shall order the contractor, subcontractor, or agent to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages.

5. No employee may be a party plaintiff to an action under subd. 3. unless the employee consents in writing to become a party and the consent is filed in the court in which the action is brought. Notwithstanding s. 814.04 (1), the court shall, in addition to any judgment awarded to the plaintiff, allow reasonable attorney fees and costs to be paid by the defendant.

BUILDING OR HEAVY CONSTRUCTION

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

SKILLED TRADES

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
101	Acoustic Ceiling Tile Installer Future Increase(s): Add \$1.42/hr on 6/1/2016.	33.02	17.12	50.14
102	Boilermaker	33.35	28.29	61.64
103	Bricklayer, Blocklayer or Stonemason Future Increase(s): Add \$1.45 on 06/06/2016 Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	32.86	20.03	52.89
104	Cabinet Installer Future Increase(s): Add \$1.42/hr on 6/1/2016.	33.02	17.12	50.14
105	Carpenter Future Increase(s): Add \$1.42/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.02	17.12	50.14
106	Carpet Layer or Soft Floor Coverer Future Increase(s): Add \$1.42/hr on 6/1/2016.	33.02	17.12	50.14
107	Cement Finisher	33.15	16.40	49.55
108	Drywall Taper or Finisher	29.97	20.08	50.05
109	Electrician Future Increase(s): Add \$1.25/hr on 6/1/16. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	35.75	19.97	55.72
110	Elevator Constructor	46.05	27.09	73.14
111	Fence Erector	18.72	5.78	24.50

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
112	Fire Sprinkler Fitter	36.78	19.97	56.75
113	Glazier	38.27	14.42	52.69
114	Heat or Frost Insulator	33.53	27.31	60.84
115	Insulator (Batt or Blown) Future Increase(s): Add \$1.42/hr on 6/1/2016.	33.02	17.12	50.14
116	Ironworker	32.50	20.58	53.08
117	Lather	32.72	16.00	48.72
118	Line Constructor (Electrical)	40.81	18.06	58.87
119	Marble Finisher	25.72	18.54	44.26
120	Marble Mason	32.82	18.67	51.49
121	Metal Building Erector	22.40	6.27	28.67
122	Millwright Future Increase(s): Add \$1.47/hr on 6/1/2016.	34.79	17.17	51.96
123	Overhead Door Installer	31.93	13.39	45.32
124	Painter	26.70	16.65	43.35
125	Pavement Marking Operator	30.00	18.81	48.81
126	Piledriver Future Increase(s): Add \$1.44/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.56	17.12	50.68
127	Pipeline Fuser or Welder (Gas or Utility)	44.20	18.26	62.46
129	Plasterer	32.82	18.81	51.63
130	Plumber	38.82	18.02	56.84
132	Refrigeration Mechanic	45.55	18.71	64.26
133	Roofer or Waterproofer	29.65	1.71	31.36
134	Sheet Metal Worker	35.55	24.67	60.22
135	Steamfitter	45.55	18.71	64.26
137	Teledata Technician or Installer	22.50	12.74	35.24
138	Temperature Control Installer	34.97	19.67	54.64
139	Terrazzo Finisher	25.72	18.54	44.26

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
140	Terrazzo Mechanic Future Increase(s): Add \$1.60 on 06/06/2016	33.98	18.96	52.94
141	Tile Finisher	30.00	0.00	30.00
142	Tile Setter Future Increase(s): Add \$1.45/hr on 6/06/2016.	31.59	19.61	51.20
143	Tuckpointer, Caulker or Cleaner Future Increase(s): Add \$1.45 on 06/06/2016 Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	32.86	20.03	52.89
144	Underwater Diver (Except on Great Lakes)	36.74	16.00	52.74
146	Well Driller or Pump Installer Future Increase(s): Add \$1/hr on 6/1/2016; Add \$1/hr on 6/1/2017.	25.32	16.40	41.72
147	Siding Installer	17.00	6.71	23.71
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	36.73	20.41	57.14
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	32.65	15.52	48.17
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	28.57	13.71	42.28
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.53	13.55	40.08
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	25.00	12.55	37.55

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	33.69	19.78	53.47
203	Three or More Axle	18.25	21.61	39.86
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07
205	Pavement Marking Vehicle	18.25	21.61	39.86
207	Truck Mechanic	18.25	21.61	39.86

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer Future Increase(s): Add \$1.25/hr eff. 06/06/2016 Premium Increase(s): Add \$1.00/hr for certified welder and pipelayer; Add \$.25/hr for mason tender.	25.81	15.63	41.44
302	Asbestos Abatement Worker	17.00	4.22	21.22
303	Landscaper	21.90	9.83	31.73
310	Gas or Utility Pipeline Laborer (Other Than Sewer and Water)	20.83	18.39	39.22
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	19.35	0.00	19.35
314	Railroad Track Laborer	17.00	3.96	20.96
315	Final Construction Clean-Up Worker	29.01	7.20	36.21

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

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
501	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Milling Machine; Boring Machine (Directional, Horizontal or Vertical); Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Backhoe (Track Type) Having a Mfgr's Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Crane, Shovel, Dragline, Clamshells; Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Grader or Motor Patrol; Master Mechanic; Mechanic or Welder; Robotic Tool Carrier (With or Without Attachments); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Tractor (Scraper, Dozer, Pusher, Loader); Trencher (Wheel Type or Chain Type Having Over 8 Inch Bucket). Future Increase(s): Add \$1.60/hr on 6/3/2016.	35.22	20.38	55.60
502	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Environmental Burner; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Jeep Digger; Screed (Milling Machine); Skid Rig; Straddle Carrier or Travel Lift; Stump Chipper; Trencher (Wheel Type or Chain Type Having 8 Inch Bucket & Under). Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07

Fringe Benefits Must Be Paid On All Hours Worked				
CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
503	Air Compressor (&/or 400 CFM or Over); Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Forklift; Generator (&/or 150 KW or Over); Greaser; High Pressure Utility Locating Machine (Daylighting Machine); Mulcher; Oiler; Post Hole Digger or Driver; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$1.60/hr on 6/3/2016.	32.62	20.38	53.00
504	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
505	Work Performed on the Great Lakes Including Crane or Backhoe Operator; Assistant Hydraulic Dredge Engineer; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder; 70 Ton & Over Tug Operator. Future Increase(s): Add \$1.25/hr on 1/1/2017. Premium Increase(s): Add \$.50/hr for Friction Crane, Lattice Boom or Crane Certification (CCO).	44.05	23.24	67.29
506	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery. Future Increase(s): Add \$1.25/hr on 1/1/2017.	39.20	23.09	62.29
507	Work Performed on the Great Lakes Including Deck Equipment Operator, Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	36.72	21.15	57.87

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

Fringe Benefits Must Be Paid On All Hours Worked				
CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
		\$	\$	\$
508	Boring Machine (Directional); Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add \$1.60/hr on 6/3/2016. Premium Increase(s):	37.67	20.38	58.05

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
	Add \$.50/hr for >200 Ton; Add \$1/hr at 300 Ton; Add \$1.50/hr at 400 Ton; Add \$2/hr at 500 Ton & Over.			
509	Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Boring Machine (Horizontal or Vertical); Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Pile Driver; Versi Lifts, Tri-Lifts & Gantrys (20,000 Lbs. & Over). Future Increase(s): Add \$1.60/hr on 6/3/2016. Premium Increase(s): Add \$.25/hr for all >45 Ton lifting capacity cranes.	36.42	20.38	56.80
510	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Dredge (NOT Performing Work on the Great Lakes); Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Hydro-Blaster (10,000 PSI or Over); Milling Machine; Skid Rig; Traveling Crane (Bridge Type). Future Increase(s): Add \$1.60/hr on 6/3/2016.	35.22	20.38	55.60
511	Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Environmental Burner; Gantrys (Under 20,000 Lbs.); Grader or Motor Patrol; High Pressure Utility Locating Machine (Daylighting Machine); Manhoist; Material or Stack Hoist; Mechanic or Welder; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tining or Curing Machine; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
512	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Grout Pump; Hoist (Tugger, Automatic); Industrial Locomotives; Jeep Digger; Lift Slab Machine; Mulcher; Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames. Future Increase(s): Add \$1.60/hr on 6/3/2016.	32.62	20.38	53.00
513	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Boatmen (NOT Performing Work on the Great Lakes); Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Elevator; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Forklift; Generator (&/or 150 KW or Over); Greaser; Heaters (Mechanical); Loading Machine (Conveyor); Oiler; Post Hole Digger or Driver; Prestress Machine; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Robotic Tool Carrier (With or Without Attachments); Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$1.60/hr on 6/3/2016.	31.99	20.38	52.37
514	Gas or Utility Pipeline, Except Sewer & Water (Primary Equipment). Future Increase(s): Add \$1/hr on 5/30/2016.	37.04	22.44	59.48
515	Gas or Utility Pipeline, Except Sewer & Water (Secondary Equipment).	33.82	20.30	54.12
516	Fiber Optic Cable Equipment	29.50	0.68	30.18

SEWER, WATER OR TUNNEL CONSTRUCTION
--

Includes those projects that primarily involve public sewer or water distribution, transmission or collection systems and related tunnel work (excluding buildings).

SKILLED TRADES

CODE	TRADE OR OCCUPATION	FRINGE BENEFITS MUST BE PAID ON <u>All</u> Hours Worked	HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
			\$	\$	\$
103	Bricklayer, Blocklayer or Stonemason		32.82	18.67	51.49
105	Carpenter		32.72	16.00	48.72
107	Cement Finisher Future Increase(s): Add \$1.75 on 6/1/16. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.		35.97	17.85	53.82
109	Electrician		52.00	1.50	53.50
111	Fence Erector		18.72	5.78	24.50
116	Ironworker		32.50	20.58	53.08
118	Line Constructor (Electrical)		40.81	18.06	58.87
125	Pavement Marking Operator		30.00	18.81	48.81
126	Piledriver		33.24	16.00	49.24
130	Plumber Future Increase(s): Add \$1.50 on 6/1/16		39.95	19.45	59.40
135	Steamfitter		44.20	18.26	62.46
137	Teledata Technician or Installer		22.50	12.74	35.24
143	Tuckpointer, Caulker or Cleaner		32.82	18.67	51.49
144	Underwater Diver (Except on Great Lakes)		31.00	20.43	51.43
146	Well Driller or Pump Installer Future Increase(s): Add \$1/hr on 6/1/2016; Add \$1/hr on 6/1/2017.		25.32	16.40	41.72
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY		36.73	15.92	52.65
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY		32.65	15.52	48.17

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	28.57	13.71	42.28
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.53	13.55	40.08
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.97	34.72

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	19.00	0.00	19.00
203	Three or More Axle	19.00	0.00	19.00
204	Articulated, Euclid, Dumptor, Off Road Material Hauler	33.69	19.78	53.47
205	Pavement Marking Vehicle	19.00	0.00	19.00
207	Truck Mechanic	19.00	0.00	19.00

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer Future Increase(s): Add \$1.25/hr eff. 06/06/2016 Premium Increase(s): Add \$.20 for blaster, bracer, manhole builder, caulker, bottomman and power tool; Add \$.55 for pipelayer; Add \$1.00 for tunnel work 0-15 lbs. compressed air; Add \$2.00 for over 15-30 lbs. compressed air; Add \$3.00 for over 30 lbs. compressed air.	27.18	15.64	42.82
303	Landscaper	41.00	0.00	41.00
304	Flagperson or Traffic Control Person	20.92	14.80	35.72
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	19.35	0.00	19.35
314	Railroad Track Laborer	17.00	3.96	20.96

**HEAVY EQUIPMENT OPERATORS
SEWER, WATER OR TUNNEL WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
521	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Master Mechanic; Pile Driver. Premium Increase(s): Add \$.25/hr for operating tower crane.	38.09	20.80	58.89
522	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Spreader & Distributor; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Dredge (NOT Performing Work on the Great Lakes); Milling Machine; Skid Rig; Telehandler; Traveling Crane (Bridge Type). Future Increase(s): Add \$1.60/hr on 6/3/2016.	35.22	20.38	55.60
523	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Boring Machine (Horizontal or Vertical); Bulldozer or Endloader (Over 40 hp); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Manhoist; Material or Stack Hoist; Mechanic or Welder; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
524	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Environmental Burner; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Hoist (Tugger, Automatic); Grout Pump; Jeep Digger; Lift Slab Machine; Mulcher; Power Subgrader; Pump (3 Inch or Over) or Well Points; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Tining or Curing Machine; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames.	33.69	21.75	55.44
525	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Loading Machine (Conveyor); Post Hole Digger or Driver; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$1.60/hr on 6/3/2016.	31.99	20.38	52.37
526	Boiler (Temporary Heat); Forklift; Greaser; Oiler.	30.99	19.78	50.77
527	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
528	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	41.65	21.71	63.36
529	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	36.72	21.15	57.87
530	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under), Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	36.72	21.15	57.87

LOCAL STREET OR MISCELLANEOUS PAVING CONSTRUCTION
--

Includes roads, streets, alleys, trails, bridges, paths, racetracks, parking lots and driveways (except residential or agricultural), public sidewalks or other similar projects (excluding projects awarded by the Wisconsin Department of Transportation).

SKILLED TRADES

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
103	Bricklayer, Blocklayer or Stonemason	32.82	18.67	51.49
105	Carpenter Future Increase(s): Add \$1.42/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.02	17.12	50.14
107	Cement Finisher Future Increase(s): Add \$1.75 on 6/1/16. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.	35.97	17.85	53.82
109	Electrician Future Increase(s): Add \$1.25/hr on 6/1/16. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	35.75	19.97	55.72
111	Fence Erector	18.72	5.78	24.50
116	Ironworker	32.50	20.58	53.08
118	Line Constructor (Electrical)	40.81	18.06	58.87
124	Painter	26.70	16.65	43.35
125	Pavement Marking Operator	30.00	18.81	48.81
126	Piledriver Future Increase(s): Add \$1.44/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.56	17.12	50.68

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
133	Roofer or Waterproofer	29.65	1.71	31.36
137	Teledata Technician or Installer	22.50	12.74	35.24
143	Tuckpointer, Caulker or Cleaner	32.82	18.67	51.49
144	Underwater Diver (Except on Great Lakes)	36.74	16.00	52.74
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	36.73	15.92	52.65
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	32.65	15.52	48.17
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	28.57	13.71	42.28
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	26.53	13.55	40.08
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.97	34.72

TRUCK DRIVERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
201	Single Axle or Two Axle	18.00	0.00	18.00
203	Three or More Axle	18.00	0.00	18.00
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07
205	Pavement Marking Vehicle	18.00	0.00	18.00
206	Shadow or Pilot Vehicle	18.00	0.00	18.00
207	Truck Mechanic	18.00	0.00	18.00

LABORERS

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
301	General Laborer	26.34	15.17	41.51

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
303	Landscaper Future Increase(s): Add \$1.00/hr eff. 06/01/2016; Add \$1.00/hr eff. 06/01/2017 Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).	30.67	15.65	46.32
304	Flagperson or Traffic Control Person	20.92	14.80	35.72
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	19.35	0.00	19.35
314	Railroad Track Laborer	17.00	3.96	20.96

**HEAVY EQUIPMENT OPERATORS
CONCRETE PAVEMENT OR BRIDGE WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
541	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add \$1.60/hr on 6/3/2016. Premium Increase(s): Add \$.50/hr for >200 Ton; Add \$1/hr at 300 Ton; Add \$1.50/hr at 400 Ton; Add \$2/hr at 500 Ton & Over.	37.67	20.38	58.05

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
542	<p>Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Crane, Tower Crane Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver.</p> <p>Future Increase(s): Add \$1.30/hr on 6/1/2016; Add \$1.25/hr on 6/1/2017.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://wisconsin.gov/Pages/doing-bus/civil-rights/labornwage/prevailing-wage-compliance.aspx.</p>	37.77	21.85	59.62
543	<p>Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.</p> <p>Future Increase(s): Add \$1.30/hr on 6/1/2016; Add \$1.25/hr on 6/1/2017.</p> <p>Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://wisconsin.gov/Pages/doing-bus/civil-rights/labornwage/prevailing-wage-compliance.aspx.</p>	37.27	21.85	59.12

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
544	Backfiller; Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine. Future Increase(s): Add \$1.30/hr on 6/1/2016; Add \$1.25/hr on 6/1/2017. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://wisconsin.gov/Pages/doing-bus/civil-rights/labornwage/prevailing-wage-compliance.aspx .	37.27	21.85	59.12
545	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.	31.62	19.78	51.40
546	Fiber Optic Cable Equipment.	29.50	0.68	30.18
547	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
548	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder. Future Increase(s): Add \$1.25/hr on 1/1/2017. Premium Increase(s): Add \$.50/hr for Friction Crane, Lattice Boom or Crane Certification (CCO).	44.05	23.24	67.29
549	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or more); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	36.72	21.15	57.87

550	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	36.72	21.15	57.87
-----	---	-------	-------	-------

**HEAVY EQUIPMENT OPERATORS
ASPHALT PAVEMENT OR OTHER WORK**

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
551	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads and/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic.	36.67	19.78	56.45
552	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add \$1.30/hr on 6/1/2016; Add \$1.25/hr on 6/1/2017. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add \$1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://wisconsindot.gov/Pages/doing-bus/civil-rights/labornwage/prevaling-wage-compliance.aspx .	37.77	21.85	59.62

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
553	Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boring Machine (Directional, Horizontal or Vertical); Bulldozer or Endloader; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Laser/Screed; Concrete Slipform Placer Curb & Gutter Machine; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames. Future Increase(s): Add \$1.60/hr on 6/3/2016.	34.69	20.38	55.07
554	Backfiller; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawyer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self-Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler.	36.17	19.19	55.36
555	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add \$1.60/hr on 6/3/2016.	32.62	20.38	53.00
556	Fiber Optic Cable Equipment.	29.50	0.68	30.18

***** END OF RATES *****

The documents following the Prevailing Wage Rate Determination consist of twenty pages (including this one) of various forms/documents that will be used throughout the completion of the project. This prevailing wage rate determination and its underlying legal requirements outlined in the attached documents apply for the life of this project even though work on the project continues into 2017 or beyond. The chart below lists the form number, form/document name, the party who uses the document, and the document's number of pages. If you have any questions regarding these forms please call the Prevailing Wage Office at (608)266-6861.

ERD Form Number	Form Name	Party Who Uses the Form	Pages
	July 2015 description of recent changes to Wisconsin's prevailing wage laws resulting from enactment of the 2015-17 State Budget Bill.		1
	Prevailing Wage - Public Entity Project Owners	Explanation of project owner responsibilities	2
16056	Post the White Sheet	Contracting agency	1
10908	Consolidated List of Debarred Contractors	Any party contracting someone to complete work on a prevailing wage project	4
	Prevailing Wage – Contractors	Explanation of contractor responsibilities	2
7777	Disclosure of Ownership	Contractors that meet the criteria set out in (3)(A)&(B) of the form	1
5724	Prime Contractor Affidavit of Compliance	Prime contractor files with contracting agency upon completion of the work before receiving final payment	2
10584	Agent or Subcontractor Affidavit of Compliance	Subcontractors file with their awarding contractor upon completion of their work on the project before receiving final payment	2
10880	Request to Employ Subjourneyperson	Contractors wishing to employ a subjourneyperson(s)	1
	Additional General Prevailing Wage Law Information	General information for public entity or any other interested party	3

02/16/2016

THE 2015-17 BUDGET BILL MADE SIGNIFICANT CHANGES TO WISCONSIN'S PREVAILING WAGE LAWS. HOWEVER, THOSE CHANGES DO NOT GO INTO EFFECT UNTIL JANUARY 1, 2017.

During calendar year 2016, DWD will continue to enforce prevailing wage laws for local governmental unit and state agency public works projects under current prevailing wage laws.

2015 Wisconsin Act 55 (the budget bill) repealed the state prevailing wage law for **local governmental units** such as villages, towns, cities, school districts, or sewerage districts effective January 1, 2017. However, if a local governmental unit:

- issues a Request for Bids before January 1, 2017, for a project of public works that is subject to bidding or,
- enters into a contract before January 1, 2017, for a project of public works that is not subject to bidding,

then those public works projects are subject to the current prevailing wage law (§66.0903, Wis. Stats.) through the life of the project. Projects of public works with prevailing wage project determinations issued prior to 2017 continue to be subject to the current prevailing wage law through the life of the project even though the project may have work going on in 2017 or subsequent years.

Contractors working on local governmental unit projects with prevailing wage rate determinations must continue to pay employees the appropriate prevailing wage and maintain required prevailing wage payroll records. For instance, if a contractor is working in 2018 on a public works project with a project determination issued prior to 2017, then the contractor is required to comply with the "old" prevailing wage rate law (§66.0903, Wis. Stats.). After January 1, 2017, DWD will continue to enforce prevailing wage requirements for projects with DWD prevailing wage determinations issued under the "old" prevailing wage laws (§§ 66.0903 & 103.49, Wis. Stats.).

For new public works projects starting on January 1, 2017, state prevailing wage law will only apply to **state agency** and **state highway** projects. Prevailing wage rates applicable to state agencies will be those issued by the U.S. Department of Labor under the Davis-Bacon Act, 40 U.S.C. 3142. The Wisconsin Department of Administration will enforce the new state agency prevailing wage law (§16.856, Wis. Stats.) and the Wisconsin Department of Transportation will continue to enforce prevailing wage on state highway projects (under a law renumbered as §84.062, Wis. Stats.).

PREVAILING WAGE – Public Entity Project Owners

Any public works project that has a total estimated project cost that equals or exceeds single-trade or multiple-trade project thresholds requires a prevailing wage rate determination issued by the Department of Workforce Development (DWD). Public works include erecting, constructing, remodeling, repairing, demolishing, alterations, painting and decorating projects for a local governmental unit or state agency. State law excludes minor service or maintenance work, warranty work, or work under a supply-and-installation contract. There is a statutory definition for most of these exclusions. The prevailing wage law that applies to local governmental units is §66.0903, Wis. Stats. The prevailing wage law that applies to state agencies is §103.49, Wis. Stats. The applicable administrative rules for all public entities are DWD 290 and DWD 294, Wis. Adm. Code.

Thresholds

A “single-trade project of public works” means a project in which a single trade accounts for 85% or more of the total labor cost of the project. The single trade threshold is \$48,000.

A “multiple-trade project of public works” means a project in which no single trade accounts for 85% or more of the total labor cost of the project.

- (a) The multiple-trade threshold is \$100,000, unless a municipality falls under the description in (b).
- (b) The multiple-trade threshold of \$234,000 applies to public works projects erected, constructed, repaired, remodeled, or demolished by a private contractor for •a city or village with a population less than 2500 or •a town.

A local governmental unit or state agency that has a public works project that equals or exceeds the prevailing wage thresholds must do all of the following:

- Request a prevailing wage rate determination for the project from DWD at least 30 days before soliciting bids or negotiating contracts. An Application for Prevailing Wage Rate Determination is available on the DWD website: http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm

To avoid waiting for a project determination use the on-line application system that permits the user to generate a determination immediately and save all documents in PDF form to the user’s computer. Use this project determination on line application at the following address:

http://dwd.wisconsin.gov/er/prevailing_wage_rate/pw_online_determinations.htm

- Tell potential contractors the project is subject to state prevailing wage law when soliciting bids.
- Include the prevailing wage rate determination in the construction contract, or if there is no written contract, provide a copy of the project determination to each prime contractor.
- Award contracts to contractors who do *not* appear on the “Consolidated List of Debarred Contractors.”
- Notify contractors that they are required to have a written substance abuse testing program in place that fulfills the requirements of §103.503, Wis. Stats., before commencing work on the prevailing wage project.
- Post the prevailing wage rate determination on the project site. (This document is often referred to as “the white sheet.”)
- Notify project contractors that if DWD finds that a contractor violated the prevailing wage law, DWD will assess liquidated damages of 100% of the wages owed to employees.
- Obtain an Affidavit of Compliance from each prime contractor before making final payment for the project.

If the total estimated cost of the project exceeds the prevailing wage thresholds, a local governmental unit or state agency also must obtain a prevailing wage rate determination under the following circumstances:

- when a completed facility is leased, purchased, lease-purchased or otherwise acquired by or dedicated to a public entity in lieu of the public entity contracting for the project,
- when one public entity does work for another public entity,
- when a *private* entity will construct a road, street, bridge, sanitary sewer or water main project and dedicate it to a local governmental unit or the state for its ownership or maintenance (except for some residential subdivisions).

For more information, visit the prevailing wage website: http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm. For further assistance, call the Equal Rights Division at 608-266-6861 and ask for prevailing wage.

POST THE WHITE SHEET

As the public entity receiving this prevailing wage rate determination, **YOU ARE REQUIRED** by law to post the prevailing wage rate determination (i.e., white sheet) in at least one conspicuous and easily accessible place on the project site that is available to all construction workers. The white sheet must remain posted from the onset of the project until all construction labor on the project has been completed.

[See, Wis. Admin. Code §DWD 290.12(1)]

Posting the white sheet inside the general contractor's trailer does not meet this requirement. That placement is not available/accessible to all workers and is not a location over which you have control.

If you have questions about posting, please call (608)266-6861 and ask for prevailing wage intake.

State of Wisconsin - Department of Workforce Development

This list has been prepared in accordance with the provisions of §§66.0903(12) and 103.49(7), Wis. Stats., and Chapter DWD 294 of the Wisconsin Administrative Code. All contractors on this list were found to have committed a "debarable offense" related to certain labor standard provisions determined or established for a state or local public works project. No state agency, local governmental unit or owner or developer may knowingly solicit bids from, negotiate with or award any contracts to or approve or allow any subcontracts with a debarred contractor, including all divisions, affiliates or other organizational elements of such contractor that are engaged in construction business activities, until the debarment is terminated. The name of each debarred contractor must remain on this list for a period of three (3) years from the termination date indicated below. The contractor is, however, only "debarred" from the "effective date" through the "termination date" indicated for that contractor. Questions regarding this list should be addressed to Jim Chiolino, Equal Rights Division, P. O. Box 8928, Madison, WI 53708 or call (608) 266-3345. Deaf, hearing or speech-impaired callers may contact the department by calling its TDD number (608) 264-8752.

<u>Name of Contractor</u>	<u>Address</u>	<u>Effective Date</u>	<u>Termination Date</u>	<u>Cause Code</u>	<u>Date of Violation(s)</u>	<u>Limitations/Deviations</u>
A-1 Duran Roofing & Insulation Services, Inc.	3700 N Fratney St Milwaukee, WI 53212	11/1/14	10/31/17	1, 2 and 4	2011- 2012	None
	or 8095 NW 64 th St Miami, FL 33166					
Abel, Mike	See, Abel Electric, Inc					
Abel Electric, Inc	3385 Belmar Rd Green Bay, WI 54313	9/1/12	8/31/15	1	2011	None
Alpha Electric, LLC	350 Business Park Dr Sun Prairie, WI 53590	8/1/15	7/31/18	4	2014	None
Arnie Christiansen Mason Contractors, LLC	2304 65 th Dr Franksville, WI 53126	9/1/14	8/31/16	1, 2 and 4	2011	None
Atkins, Scott	See, Freedom Insulation, Inc					
Bickel, Matthew	See, Peshfigo Asphalt, Inc					
Boecker, Roger	See, R-Way Pumping, Inc					
Brechtl, Mark G	See, Ecodec, Inc					

<u>Name of Contractor</u>	<u>Address</u>	<u>Effective Date</u>	<u>Termination Date</u>	<u>Cause Code</u>	<u>Date of Violation(s)</u>	<u>Limitations/ Deviations</u>
Cargill Heating and Air Conditioning Company, Inc	3049 Edgewater La La Crosse, WI 54603	3/1/14	2/28/17	1 and 2	2011	None
Castlerock Commercial Construction, Inc	PO Box 11699 Milwaukee, WI 53211-0699	2/1/12	1/31/15	1, 2 and 4	2009 & 2010	None
Christiansen, Andy	See, Arnie Christiansen Mason Contractors, LLC					
Christiansen, Arnold	See, Arnie Christiansen Mason Contractors, LLC					
Darnick, Gregory L	See, Darnick Trucking, LLC					
Darnick Trucking, LLC	W914 County Rd V Berlin, WI 54923	11/1/14	10/31/15	1, 2 and 4	2012 & 2013	None
Dem/Ex Group, Inc	805 S Adams St Manito, IL 61546	12/1/11	11/30/14	1 and 2	2010	None
Duran, Bernardo	See, A-1 Duran Roofing & Insulation Services and RRS2 Inc					
Ecodec, Inc	5106 Wintergreen Dr Madison, WI 53704	10/1/14	9/30/17	1	2011 & 2012	None
Fisher, Ed &/or Fisher, Rhonda	See, Dem/Ex Group, Inc					
Freedom Insulation, Inc	117925 219th Ave Chippewa Falls, WI 54729	9/1/11	8/31/14	1	2008- 2010	None
Froode, Kathleen M	See, Masonry Specialists II, LLC					
Galstad, Michael E (aka Michael Earl Galstad)	See, Cargill Heating and Air Conditioning Company, Inc					

<u>Name of Contractor</u>	<u>Address</u>	<u>Effective Date</u>	<u>Termination Date</u>	<u>Cause Code</u>	<u>Date of Violation(s)</u>	<u>Limitations/ Deviations</u>
Gjolaj, Ded	See, Horizon Bros Painting Corp					
Grade A Construction, Inc	157 Enterprise Rd Delafield, WI 53018	1/1/16	12/31/19	1, 2 and 4	2014	None
Hernandez, Jesus	See, Quality Essential, Inc.					
Horizon Bros Painting Corp	1053 Kendra La Howell, MI 48843	10/1/14	9/30/16	4	2012	None
JT Roofing, Inc	350 Tower Dr Saukville, WI 53080	6/1/12	5/31/15	1, 2 and 4	2007 & 2008	None
Jinkins, Richard	See, Castlerock Commercial Construction, Inc					
John's Concrete	See, Wagner Companies, Inc, dba John's Concrete					
Kott, Joseph J	See, Alpha Electric, LLC					
Masonry Specialists II, LLC	5109 Briarwood Ct Racine, WI 53402	8/1/15	7/31/18	4	2014	None
Mid-W Enterprises, Inc	1730 22 nd Avenue Kenosha, WI 53140	6/1/15	5/31/17	1, 2 and 4	2013	None
Midwest Construction Co, Inc	See, Mid-W Enterprises, Inc					
Oden, Cassie	See, A-1 Duran Roofing & Insulation Services and RRS2 Inc					
Ofstie, Darin	See, Precision Excavating and Grading, LLC					
Peret, Robert	See, A-1 Duran Roofing &					

Insulation Services and RRS2 Inc

<u>Name of Contractor</u>	<u>Address</u>	<u>Effective Date</u>	<u>Termination Date</u>	<u>Cause Code</u>	<u>Date of Violation(s)</u>	<u>Limitations/ Deviations</u>
Peshtigo Asphalt, Inc	W3895 Track La Peshtigo, WI 54157	3/1/16	2/28/17	1	2013- 2014	None
Precision Excavating and Grading, LLC or Precision Excavating Enterprises, LLC	2104 Pierce Saint Croix Rd Baldwin, WI 54002	5/1/11	4/30/14	1, 2 and 4	2006- 2008	None
Quality Essential, Inc.	917 11 th Ave S#4 Hopkins, MN 55343	7/1/16	6/30/19	4	2015	None
R-Way Pumping, Inc	3023 Lake Maria Rd Freeport, MN 56331	3/1/12	2/28/15	1, 2 and 4	2008	None
RRS2 Inc.	133 N Jackson St, #427 Milwaukee, WI 53202 or 1313 N Franklin Pl, #805 Milwaukee, WI 53202	11/1/14	10/31/17	1, 2 and 4	2011- 2012	None
Thull, Gerald T	See, JT Roofing, Inc					
Ventura, Robert	See, Mid-W Enterprises, Inc					
Wagner, Cory L	See, Wagner Companies, Inc					
Wagner Companies, Inc, dba John's Concrete	2063 Georgia Ave Racine, WI 53404	8/1/15	7/31/18	1	2013	None
Yaresh, Kathleen R	See, Grade A Construction, Inc					

Cause Code: 1 = Failure to Pay Straight Time 2 = Failure to Pay Overtime 3 = Kickback 4 = Payroll Records.

PREVAILING WAGE – Contractors

Any public works project that has a total estimated project cost that equals or exceeds prevailing wage project thresholds requires a prevailing wage rate determination issued by the Department of Workforce Development (DWD). Public works include erecting, constructing, remodeling, repairing, demolishing, alterations, painting and decorating projects for a local governmental unit or state agency. State law excludes minor service or maintenance work, warranty work, or work under a supply-and-installation contract. There is a statutory definition for most of these exclusions. The prevailing wage laws that apply to local governmental units and their contractors are §§66.0903 and 103.503, Wis. Stats. The prevailing wage laws that apply to state agencies and their contractors are §§103.49 and 103.503, Wis. Stats. The applicable administrative rules for all prevailing wage projects are DWD 290 and DWD 294, Wis. Adm. Code. These laws include provisions that apply to all contractors and subcontractors working on prevailing wage projects.

Any contractor or subcontractor working on a local governmental unit or state agency's public works project that equals or exceeds current prevailing wage project thresholds must do all of the following:

- Receive and review the project's prevailing wage rate determination (i.e., white sheet).
- Tell subcontractors the project is subject to state prevailing wage law and include the prevailing wage rate determination in the construction contract, or if there is no written contract, provide a copy of the project determination to each subcontractor.
- Hire subcontractors who do *not* appear on the "Consolidated List of Debarred Contractors."
- Have a written substance abuse testing program in place that fulfills the requirements of §103.503, Wis. Stats., before commencing work on the project.

- Notify subcontractors that if DWD finds that a contractor or subcontractor violated the prevailing wage law, DWD will assess liquidated damages of 100% of the wages owed to employees.
- Apply to DWD for subjourney wage rates prior to employing these individuals on the project.
- Receive and retain a completed Affidavit of Compliance from each subcontractor brought on to the project before providing final payment to those subcontractors.
- Submit a completed Affidavit of Compliance to the contractor who brought the subcontractor on to the project before receiving final payment for the project.
- Maintain payroll records for 3 years that comply with §§66.0903(10)(a) or 103.49(5)(a), Stats. and DWD 274.06.
- Respond to requests from DWD or the project owner to provide payroll records and/or respond to prevailing wage complaints filed by employees or third parties.

For more information, visit the prevailing wage website: http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm. For further assistance, call the Equal Rights Division at 608-266-6861 and ask for prevailing wage.

Disclosure of Ownership

The statutory authority for the use of this form is prescribed in Sections 66.0903(12)(d), 66.0904(10)(d) and 103.49(7)(d), Wisconsin Statutes.

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1) (m), Wisconsin Statutes].

- (1) On the date a contractor submits a bid to or completes negotiations with a state agency, local governmental unit, or developer, investor or owner on a project subject to Section 66.0903, 66.0904 or 103.49, Wisconsin Statutes, the contractor shall disclose to such state agency, local governmental unit, or developer, investor or owner, the name of any "other construction business," which the contractor, or a shareholder, officer or partner of the contractor, owns or has owned within the preceding three (3) years.
- (2) The term "other construction business" means any business engaged in the erection, construction, remodeling, repairing, demolition, altering or painting and decorating of buildings, structures or facilities. It also means any business engaged in supplying mineral aggregate, or hauling excavated material or spoil as provided by Sections 66.0903(3), 66.0904(2), 103.49(2) and 103.50(2), Wisconsin Statutes.
- (3) This form must ONLY be filed, with the state agency project owner, local governmental unit project owner, or developer, investor or owner of a publicly funded private construction project that will be awarding the contract, if **both (A) and (B) are met.**
 - (A) The contractor, or a shareholder, officer or partner of the contractor:
 - (1) Owns at least a 25% interest in the "other construction business," indicated below, on the date the contractor submits a bid or completes negotiations; or
 - (2) Has owned at least a 25% interest in the "other construction business" at any time within the preceding three (3) years.
 - (B) The Wisconsin Department of Workforce Development (DWD) has determined that the "other construction business" has failed to pay the prevailing wage rate or time and one-half the required hourly basic rate of pay, for hours worked in excess of the prevailing hours of labor, to any employee at any time within the preceding three (3) years.

Other Construction Business

Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code

I hereby state under penalty of perjury that the information, contained in this document, is true and accurate according to my knowledge and belief.

Print the Name of Authorized Officer			
Authorized Officer Signature	Date Signed		
Corporation, Partnership or Sole Proprietorship Name			
Street Address or P O Box	City	State	Zip Code

If you have any questions call (608) 266-6861

Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(c), 66.0904(7)(c) and 103.49(4r)(c) Wisconsin Statutes.

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.

Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m), Wisconsin Statutes].

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

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

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

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below and have recently completed all of the work required under the terms and conditions of a contract with the above-named awarding agency and make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(c), 66.0904(7)(c) or 103.49(4r)(c), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding agency.
- **I have** fully complied with all the wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding agency indicated above.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit				
Street Address	City	State	Zip Code	Telephone Number
Print Name of Authorized Officer			Date Signed	
Signature of Authorized Officer				

List of Agents and Subcontractors

Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		

If you have any questions call (608) 266-6861

Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(b), 66.0904(7)(b) and 103.49(4r)(9b), Wisconsin Statutes. The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.

Personal information you provide may be used for secondary purposes [Privacy Law, Section 15.04(1)(m), Wisconsin Statutes].

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

State Of _____))SS County Of _____)	Project Name		
	DWD Determination Number		Project Number (if applicable)
	Date Determination Issued		Date of Subcontract
	Awarding Contractor		
	Date Work Completed		

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

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below. We have recently completed all of the work required under the terms and conditions of a subcontract with the above-named awarding contractor. We make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(b), 66.0904(7)(b) or 103.49(4r)(b), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding contractor.
- **I have** fully complied with the entire wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding contractor.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit				
Street Address or PO Box	City	State	Zip Code	Telephone Number ()
Print Name of Authorized Officer			Date Signed	
Authorized Officer Signature				

List of Agents and Subcontractors

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

If you have any questions call (608) 266-6861

Request to Employ Subjourneyperson

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes. Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04(1)(m), Wisconsin Statutes). The employer indicated below requests that the Department of Workforce Development (DWD) determine the prevailing wage rate(s) and related qualifications to enable such employer to use a subjourneyperson(s) on the following prevailing wage project, in accordance with the provisions of Section DWD 290.025, Wisconsin Administrative Code.

1. Name of Project Appearing on the Project Determination			
County	City, Village or Town		
DWD Project Determination Number	Project Number (if applicable)		
2. Job Classification(s) for which you request a subjourney rate (i.e., carpenter, electrician, plumber, etc.)			
a.	b.		
c.	d.		
3. Employer Name (Print)			
Requester Name (Print)			
Address		City	State
Telephone Number ()		Zip Code	
Requester Title			
Email address (if you prefer to receive your response via email)		Fax Number (if you prefer to receive your response via fax) ()	

READ CAREFULLY: I understand that this request is ONLY applicable to the project and job classification(s) listed above and that subjourney employees primarily work under the direction of and assist a skilled trade employee by frequently using the tools of a skilled trade and will NOT regularly perform the duties of a general laborer, heavy equipment operator or truck driver. If the subjourney employee regularly performs the work of a different trade or occupation, he/she will be compensated for such work at the applicable journeyperson prevailing wage rate. I agree to compensate subjourney employees in strict accordance with the directions received from the DWD.

Requester Signature	Date Signed
---------------------	-------------

MAIL the completed request to:
 EQUAL RIGHTS DIVISION, LABOR STANDARDS BUREAU
 PO BOX 8928, MADISON WI 53708
OR
 FAX the completed request to: (608) 267-4592 / **DO NOT e-mail your request.**
 Call (608) 266-6861 for assistance in completing this form.

ADDITIONAL GENERAL PREVAILING WAGE LAW INFORMATION

(This document updated July 2015)

NOTE: Recent prevailing wage law changes enacted by the 2015-17 Budget Bill (2015 Wisconsin Act 55) do not go into effect until calendar year 2017.

**For prevailing wage laws and frequently asked questions, refer to the prevailing wage website at:
http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm**

Topic	Who's affected?	Brief description of requirement under §66.0903 or §103.49
Non-applicability	All public entities	Prevailing wage rates do not apply to minor service or maintenance work, warranty work, or work under a supply and installation contract.
Non-applicability: Minor service or maintenance work	Local governmental units & Contractors	Minor service or maintenance work means a project of public works that is limited to <ul style="list-style-type: none"> • minor crack filling, chip or slurry sealing, or other minor pavement patching, not including overlays, that has a projected life span of no longer than 5 years or that is performed for a TOWN and is not funded under §86.31, regardless of projected life span; • the depositing of gravel on an existing gravel road applied solely to maintain the road; • road shoulder maintenance; • cleaning of drainage or sewer ditches or structures; or • any other limited, minor work on public facilities or equipment that is routinely performed to prevent breakdown or deterioration.
Non-applicability: Minor service or maintenance work	State agencies	Minor service or maintenance work means a project of public works that is limited to <ul style="list-style-type: none"> • minor crack filling, chip or slurry sealing, or other minor pavement patching, not including overlays, that has a projected life span of no longer than 5 years; • cleaning of drainage or sewer ditches or structures; or • any other limited, minor work on public facilities or equipment that is routinely performed to prevent breakdown or deterioration.
Non-applicability: Supply & installation contract	All public entities	Supply and installation contract means a contract under which the material is installed by means of simple fasteners or connectors such as screws or nuts and bolts and no other work is performed on the site of the project of public works, and the total labor cost to install the material does not exceed 20 percent of the total cost of the contract.
Non-applicability: Work which a contractor or individual donates to a public entity	All public entities	Prevailing wage laws §§66.0903 & 103.49, Stats., do not apply to work performed on a project of public works for which the local governmental unit or the state or the state agency contracting for the project is not required to compensate any contractor, subcontractor, contractor's or subcontractor's agent, or individual for performing the work.

Topic	Who's affected?	Brief description of requirement under §66.0903 or §103.49
Non-applicability: Residential	All public entities	A prevailing wage rate determination is not required for the erection, construction, repair, remodeling, or demolition of a residential property containing 2 dwelling units or less.
Non-applicability: Residential subdivision infrastructure	All public entities	A prevailing wage rate determination is not required for a road, street, bridge, sanitary sewer, or water main project that is a part of a development in which at least 90 percent of the lots contain or will contain 2 dwelling units or less, as determined by the local governmental unit at the time of approval of the development, and that, on completion, is acquired by, or dedicated to, a local governmental unit (including under §236.13(2), Stats.), or the state, for ownership or maintenance by the local governmental unit or the state.
Electronic certified payroll record	Contractors	The requirement that every contractor on a prevailing wage project submit to DWD monthly a certified record of employees who worked on the project and that DWD post these certified records on its Internet website was discontinued effective July 1, 2011. Contractors are still required to maintain payroll records and provide them upon request from DWD &/or the project owner.
Payroll record inspection request by any person	Contractors & Complainants	Any person may request DWD to inspect the payroll records of any contractor working on a prevailing wage project. On receipt of such a request, the contractor must submit to DWD a certified record of its payroll records, other than personally identifiable information relating to an employee of the contractor, for no longer than a 4-week period. DWD may request records from a contractor under this provision no more than once per calendar quarter for each project of public works on which the contractor is performing work. The department may not charge a requester a fee for obtaining that information. DWD must make these certified records available for public inspection.
Statewide uniformity	Local governmental units	A local governmental unit may not enact & administer a prevailing wage ordinance/provision for public works or publicly funded private construction projects. Any extant laws to that effect are void.
Substance Abuse Testing	Contractors & Workers	Before commencing work on a prevailing wage project, a contractor must have a written substance abuse testing program in place that complies with §103.503, Wis. Stats. No employee may use, possess, attempt to possess, distribute, deliver, or be under the influence of a drug or under the influence of alcohol while performing work on a prevailing wage project.

Topic	Who's affected	Brief description of requirement under §66.0903 or §103.49
<p>Covered employees</p>	<p>Truck drivers & Other workers & Contractors</p>	<p>A laborer, worker, mechanic, or truck driver who is employed to process, manufacture, pick up, or deliver materials or products from a commercial establishment that has a fixed place of business from which the establishment supplies processed or manufactured materials or products or from a facility that is not dedicated exclusively, or nearly so, to a project of public works is NOT entitled to receive the prevailing wage rate UNLESS any of the following applies:</p> <ol style="list-style-type: none"> 1) the laborer, worker, mechanic, or truck driver is employed to go to the source of mineral aggregate such as sand, gravel, or stone and deliver that mineral aggregate to the site of a project of public works by depositing the material directly in final place, from the transporting vehicle or through spreaders from the transporting vehicle. 2) the laborer, worker, mechanic, or truck driver is employed to go to the site of a project of public works, pick up excavated material or spoil from the site of the project, and transport that excavated material or spoil away from the site of the project.

Page Intentionally Left Blank

SECTION 01 00 00
BASIC REQUIREMENTS

PART 1 GENERAL

1.1 SECTION SUMMARY

- A. Section Includes:
1. Section Summary
 2. Summary of the Work
 3. Contractor Use of Premises
 4. Applications for Payment
 5. Alternates
 6. Coordination
 7. Conferences
 8. Progress Meetings
 9. Submittal Procedures
 10. Proposed Products List
 11. Shop Drawings
 12. Product Data
 13. Samples
 14. Manufacturers' Instructions
 15. Manufacturers' Certificates
 16. Quality Assurance / Quality Control of Installation
 17. References
 18. Interior Enclosures
 19. Parking
 20. Staging Areas
 21. Occupancy During Construction and Conduct of Work
 22. Protection
 23. Progress Cleaning
 24. Products
 25. Transportation, Handling, Storage and Protection
 26. Product Options
 27. Substitutions
 28. Starting Systems
 29. Demonstration and Instructions
 30. Contract Closeout Procedures
 31. Final Cleaning
 32. Adjusting
 33. Operation and Maintenance Data
 34. Spare Parts and Maintenance Materials
 35. 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 remove two existing cooling towers atop the City County Building along with system piping. Install two new cooling towers in the same location, including all necessary equipment as detailed in plans and specifications.
- 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 Contractors or Subcontractors and access by Owner.
- B. Coordinate utility outages and shutdowns with Owner.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit three (3) original copies 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.

1.5 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:
 - 1. Deduct price for Schedule 80 PVC.
 - a. Provide alternate pricing for the use of schedule 80 piping instead of HDPE for the condenser system.
 - 2. Include basin sweeper.
 - a. Provide pricing to add an automatic basin cleaning system for the cooling towers.

1.6 COORDINATION

- A. Coordinate scheduling, submittals, and work of various sections of Specifications to assure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify utility requirement characteristics of operating equipment are compatible with building utilities.
- C. Coordinate space requirements and installation of mechanical and electrical work that are indicated diagrammatically on Drawings.
- D. Public Works Project Manager may choose to videotape site or workers as the Work progresses.

1.7 CONFERENCES

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

1.8 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at minimum of one (1) per week, with Public Works Project Manager.
- B. Preside at meetings, record minutes, and distribute copies within two (2) business days to those affected by decisions made.

1.9 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.

1.10 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.

1.11 SHOP DRAWINGS

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

1.12 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.

1.13 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.

1.14 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.

1.15 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.

1.16 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.

1.17 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.

1.18 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.

1.19 PARKING

- A. Arrange for temporary parking areas to accommodate construction personnel. Parking shall not be available at the Work site.

1.20 STAGING AREAS

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

1.21 OCCUPANCY DURING CONSTRUCTION AND CONDUCT OF WORK

- A. Areas of existing facility will be occupied during period when the Work is in progress. Work may be done during normal business hours (8:00 am to 4:30 pm), but confer with Owner, schedule work and store materials so as to interfere as little as possible with normal use of premises. Notify Owner when coring or similar noise making work is to be done and obtain Owner's written approval of schedule. If schedule is not convenient for Owner, reschedule and resubmit new times for Owner approval. Coring of floor along with other noisy work may have to be done on second and third shifts.
- B. Work shall be done and temporary facilities furnished so as not to interfere with access to any occupied area and so as to cause least possible interference with normal operation of facility or any essential service thereof.
- C. Contractor shall, at all times, provide approved, safe walkways and facility entrances for use by Owner, employees and public.

- D. Contractor shall provide adequate protection for all parts of facility, its contents and occupants wherever the Work under this Contract is to be performed.
- E. Contractor is not responsible for providing & maintaining temporary toilet facilities.
- F. 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.
- G. New work in extension of existing work shall correspond in all respects with that to which it connects or similar existing work unless otherwise indicated or specified.
 1. Existing work shall be cut, altered, removed or replaced as necessary for performance of Contract obligations.
 2. Work remaining in place, damaged or defaced by reason of work done under this Contract shall be restored equal to its condition at time of Award of Contract.
 3. If removal of work exposes discolored or unfinished surfaces or work out of alignment, such surfaces shall be refinished or materials replaced as necessary to make continuous work uniform and harmonious.

1.22 PROTECTION

- A. Contractor shall provide and maintain barricades & signage to prohibit public access to construction site.
- B. Contractor shall provide and maintain guard lights at all barricades, railings, obstructions in streets, roads or sidewalks and at all trenches adjacent to public walks or roads.

1.23 PROGRESS CLEANING

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

1.24 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.

1.25 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

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

1.26 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 shall not be considered. Owner reserves right to approve or reject substitutions based on Specification requirements and intended use.

1.27 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. Document each request with complete data substantiating compliance of proposed Substitution with Construction Documents.
- C. Submit three (3) copies of requests for Substitution for consideration. Limit each request to one (1) proposed Substitution.
- D. Substitutions shall not change contract price established at Bid Due Date.

1.28 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.

1.29 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel prior to date of final inspection.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at designated location.

- C. Owner may choose to videotape demonstration session; demonstration and demonstrator shall be to level of satisfaction of Owner.

1.30 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.

1.31 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.

1.32 ADJUSTING

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

1.33 OPERATION AND MAINTENANCE MANUAL

- A. Provide operation and maintenance manual for all mechanical and electrical equipment and systems supplied and installed in the Work.

1.34 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.

1.35 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 Architect / Engineer and 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.
- 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

Page Intentionally Left Blank

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. Asphalt & Concrete.
5. Bricks & Masonry.
6. Vinyl Siding.
7. Cardboard.
8. Metal.
9. Unpainted Gypsum Drywall.
10. Shingles.

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 www4.uwm.edu/shwec/wrmd/search.cfm.

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	
Asphalt & Concrete	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Bricks & Masonry	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Vinyl Siding	_____ 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	
Shingles	_____ 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	

WASTE MANAGEMENT PLAN FORM

Glass	_____ cu. yds. _____ tons	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____

Page Intentionally Left Blank

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55

SECTION 05 10 00
STRUCTURAL METAL FRAMING

PART 1 - GENERAL

Applicable provisions of Division 01 shall govern all work of this section.

SUMMARY

Include all materials, labor, services and incidentals necessary for the completion of this section of the work.

Include structural steel framing and support members shown on structural drawings complete with required bracing, welds, bolts, washers, nuts, baseplates, shims and anchor bolts.

Include items required in conjunction with concrete work. These items include inserts, welded sections, anchorages, shelf angles and other related steel work.

Rolled steel plates, shapes and bars, tubular steel and bolts shall be of domestic manufacture and be clean and free of rust and/or pitting.

REFERENCES

INDUSTRY STANDARDS, SPECIFICATIONS AND CODES

General

- Comply with all provisions of the following codes and standards except as modified herein.
- All referenced codes and standards including all revisions and commentaries shall be the most currently adopted as of the date of these contract documents.

American Institute Of Steel Construction (AISC)

- Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design
- Code of Standard Practice for Steel Buildings and Bridges
- Specification for Structural Joints Using ASTM A-325 or A-490 Bolts; approved by
- The Research Council on Structural Connections of The Engineering Foundation
- Structural Steel Detailing

American Society For Testing And Materials (Astm)

- Specific ASTM numbers are noted in later text.

American Welding Society (Aws)

- D1.1 Structural Welding Code – Steel
- D1.3 Structural Welding Code - Sheet Steel
- Additional AWS Specifications are noted in later text

Wisconsin Administrative Code, International Building Code

- ILHR 53.50 Structural Steel Requirements.
- ILHR 53.53 Structural Welding of Steel.

Steel Structures Painting Council (Sspc)

- Specific SSPC numbers are noted in later text.

QUALITY ASSURANCE

Qualifications

Qualify welding processes, welders and welding operators in accord with AWS D1.1, Wisconsin

1 Administrative Code and International Building Code.

2
3 Bolt Testing

4 Visually inspect all connections for proper number, size and type of bolt.

5
6 Verify tightness of 10% of bolts or minimum of one per connection to proper torque for turn of the nut
7 method. If tightness is not adequate, Contractor is to retighten all bolts on connection.

8
9 Weld Testing

10 Provide inspection of shop and field welding in accordance with AWS D1.1.

11
12 Where possible perform weld inspections in the fabricator's shop before delivery of the structural members
13 to the project.

14
15 Visually inspect all fillet and partial penetration welds. Perform appropriate non-destructive testing on all
16 welds which appear defective. Verify conformance with Division 5 specifications.

17
18 Non-destructive testing (ultrasonic, magnetic particle or radiographic) shall be performed on all full
19 penetration welds.

20
21 Defective weld shall be replaced and retested at the expense of the Contractor.

22
23 **SUBMITTALS**

24
25 Submit in accordance with Division 1.

26
27 Shop Drawings

28 Submit shop drawings prepared under supervision of a licensed Professional Engineer to Engineer for
29 approval showing type of steel, erection plans, setting diagrams and details of all connections and structural
30 members. Plans and details shall clearly show required tolerances for setting all such embedded items and
31 fabrication tolerances.

32
33 Connections not shown or detailed on structural drawings shall be designed and detailed by the fabricator
34 using the loads shown on the structural drawings. If no loads are shown, beam connections shall be designed
35 to support half the total uniform load capacity shown in the beam tables in the AISC "Manual of Steel
36 Construction".

37
38 Any fabrication from shop drawings that have not been approved by the Engineer are at fabricator's own risk.

39
40 Mill Tests

41 Mill tests showing heat number of all structural steel delivered to site shall be submitted to the Engineer upon
42 request.

43
44 Mill certifications of all high strength bolts to be used shall be submitted to the Engineer.

45
46 Welding Control

47 Submit Welding Procedure Specification for all prequalified joints to be used.

48
49 Submit Welding Procedure Qualification Test Record for all joints to be used which are not prequalified.

50
51 Submit Welder and Welding Operator Qualification Test Record, Certification and Wisconsin Certification
52 card for all welders and welding operators to be used. Resubmit if during the course of the work additional
53 personnel are used.

54
55 **DELIVERY, STORAGE AND HANDLING**

56 Handle steel with care to avoid bending, twisting or other damage.

- 1 Unload under supervision of Contractor.
2
3 Place on blocking to keep steel off ground.
4
5 Store steel to allow drainage of water from all parts.
6
7

8 **PART 2 - PRODUCTS**

9 **MATERIALS**

10 Rolled Steel Beams

11 Shall conform to ASTM A-992 for all steel with $F_y = 50$ KSI.

12 Rolled Steel Plates, Shapes And Bars

13 Shall conform to ASTM A-6 and A-36 for all steel with $F_y = 36$ KSI.

14 Tubular Steel Products

15 Square, rectangular and special shapes shall conform to ASTM A-500, Grade B.

16 Structural steel pipe shall conform to ASTM A-53, Grade B.

17 Steel Casting

18 Shall conform to ASTM A-27, Grade 65-35 unless otherwise shown.

19 Bolts, Nuts and Washers

20 Unfinished bolts: Shall conform to ASTM A-307, Grade A.

21 High strength bolts: Shall conform to ASTM A-325

22 Nuts: Shall conform to ASTM A-563.

23 Washers: Shall conform to ASTM F-436.

24 Galvanized Steel

25 Shall be hot dip galvanized after fabrication in accordance with ASTM A-123.

26 Structural bolts shall be hot dip galvanized in accordance with ASTM A-153. Type 2, A-325 bolts shall be tested after galvanizing to check mechanical properties.

27 Welding Electrodes

28 Welding electrodes shall meet minimum strength classification as shown on the drawings and meet the appropriate AWS Specification.

29 A5.1 Specification for Mild Steel Covered Arc Electrodes (E70-XX unless noted otherwise)

30 A5.5 Specification for Low-Alloy Steel Covered Arc Electrodes

31 A5.17 Specification for Bare Mild Steel Electrodes and Fluxes for Submerged Arc Welding

32 A5.23 Specification for Bare Steel Electrodes and Fluxes for Submerged Arc Low-Alloy Steel Welded Metal

33 Bedding Grout

34 Cement Grout: Shall be Portland cement complying with ASTM C-150, Type I or III and clean, uniformly graded sand complying with ASTM C-404, Size 2. Mix at a ratio of 1.0 part cement to 3.0 parts sand by volume with only the minimum amount of water required for placement and hydration.

35 Shrinkage-Resistant Grout: Use non-shrink, non-metallic grout where noted on drawings, pre-mixed,

1 factory-packaged complying with Corps of Engineers CRD-C621 Specifications. The following are
2 approved:

- 3 • Master Flow 713: Master Builders
- 4 • Five Star Grout: US Grout Corporation
- 5 • SonogROUT: Sonneborn Building Products
- 6 • Set Non-Shrink: Set Products, Inc.

7 8 **FABRICATION**

9 10 General

11 Fabricate items of structural steel as indicated on the final shop drawings. Properly mark all materials for
12 field assembly.

13 14 Connections

15 Combinations of bolts and welds in the same connections are not permitted unless otherwise detailed.

16
17 Weld shop connections unless otherwise shown.

18
19 All welded connections shall be 3/16" fillet weld all around minimum unless noted otherwise.

20
21 Perform all intermittent, continuous welding and straightening of built-up sections to minimize internal
22 stresses.

23
24 Bolt field connections, except where welded connections or other connections are shown or specified.

25
26 Provide high strength A325 bolts and nuts unless noted otherwise. (3/4" diameter minimum). Use minimum
27 of 2 bolts per connection unless otherwise detailed.

28 29 Holes for Other Work

30 Provide holes required for securing other work to structural steel framing and for the passage of other work
31 through steel framing members as shown on structural drawings or as approved by Engineer.

32 33 34 **PART 3 - EXECUTION**

35
36 The Contractor shall designate and employ an individual to be responsible for all OSHA job site safety
37 requirements.

38 39 **TEMPORARY SHORING AND BRACING**

40 Provide temporary shoring and bracing as required with connections of sufficient strength to bear imposed
41 loads. Remove temporary members and connections when permanent members are in place and final
42 connections are made. Provide temporary guy lines to achieve proper alignment of the structures as erection
43 proceeds as required.

44 45 **ANCHOR BOLTS**

46 Furnish anchor bolts and other connectors required for securing structural steel to foundations and other
47 in-place work.

48
49 Provide anchor bolt templates if noted on the drawings or requested by Concrete Contractor.

50
51 Setting plates for columns or beams shall not be allowed.

52 53 **FIELD ASSEMBLY**

54 Set structural members to the lines and elevations indicated. Align and adjust the various members forming
55 a part of a complete frame or structure before permanently fastening. Clean bearing surfaces and other
56 surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate

1 for discrepancies in elevations and alignment.
2
3 Erect structural steel members within tolerances specified in "The Code of Standard Practice for Steel
4 Buildings and Bridges".
5
6 Splice members only where shown or specified.
7
8 Do not enlarge unfair holes in members by burning or by the use of drift pins except in secondary bracing
9 members. Ream holes that must be enlarged to admit bolts.
10
11 Do not use gas cutting torches in the field for correcting fabrication errors in the structural framing, except
12 with Engineer's approval on secondary members which are not under stress. Finish gas-cut sections equal to
13 sheared appearance.
14
15 **HIGH STRENGTH BOLTING**
16 Use only high-strength bolts unless otherwise detailed on drawings.
17
18 Install hardened washers under turned element of all high strength bolts and over short-slotted holes in outer
19 ply.
20
21 Install bolts by the "turn of the nut" method.
22
23 **FIELD WELDING**
24 Limit field welding to those shown on drawings. All welds shall be 3/16" fillet weld all around minimum
25 unless shown otherwise.
26
27 **TOUCH-UP GALVANIZING**
28 Touch up marred and welded, galvanized surfaces with zinc-rich paint.
29
30
31

End of Section

Page Intentionally Left Blank

1
2 **SECTION 23 05 00**
3 **COMMON WORK RESULTS FOR HVAC**
4

5
6 **PART 1 - GENERAL**
7

8 **SCOPE**

9 This section includes information common to two or more technical specification sections or items that are
10 of a general nature, not conveniently fitting into other technical sections. Included are the following topics:
11

12 **PART 1 - GENERAL**

13 Scope
14 Related Work
15 Reference
16 Reference Standards
17 Quality Assurance
18 Continuity of Existing Services
19 Protection of Finished Surfaces
20 Sleeves and Openings
21 Sealing
22 Equipment Furnished By Others
23 Provisions for Future
24 Submittals
25 Certificates and Inspections
26 Street Closure
27 Operating and Maintenance Data
28 Training of Owner Personnel
29 Record Drawings
30

31 **PART 2 - PRODUCTS**

32 Identification
33 Sealing
34

35 **PART 3 - EXECUTION**

36 Demolition
37 Concrete Work
38 Cutting and Patching
39 Building Access
40 Equipment Access
41 Coordination
42 Identification
43 Lubrication
44 Sleeves and Openings
45 Sealing
46

47 **RELATED WORK**

48 Section 23 05 13 - Common Motor Requirements for HVAC.
49

50 **REFERENCE**

51 Applicable provisions of Division 1 govern work under this section.
52

53 **REFERENCE STANDARDS**

54 Abbreviations of standards organizations referenced in other sections are as follows:
55
56

1	AGA	American Gas Association
2	AMCA	Air Movement and Control Association
3	ANSI	American National Standards Institute
4	ARI	Air-Conditioning and Refrigeration Institute
5	ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
6	ASME	American Society of Mechanical Engineers
7	ASTM	American Society for Testing and Materials
8	AWWA	American Water Works Association
9	AWS	American Welding Society
10	CGA	Compressed Gas Association
11	CTI	Cooling Tower Institute
12	EPA	Environmental Protection Agency
13	IEEE	Institute of Electrical and Electronics Engineers
14	ISA	Instrument Society of America
15	MCA	Mechanical Contractors Association
16	MSS	Manufacturer's Standardization Society of the Valve & Fitting Industry, Inc.
17	NBS	National Bureau of Standards
18	NEBB	National Environmental Balancing Bureau
19	NEC	National Electric Code
20	NEMA	National Electrical Manufacturers Association
21	NFPA	National Fire Protection Association
22	SMACNA	Sheet Metal and Air Conditioning Contractors' National Association. Inc.
23	UL	Underwriters Laboratories Inc.
24	ASTM E814	Standard Test Method for Fire Tests of Through-Penetration Fire Stops
25	ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials
26	UL1479	Fire Tests of Through-Penetration Firestops
27	UL723	Surface Burning Characteristics of Building Materials

28

29 **QUALITY ASSURANCE**

30 Refer to Division 1, General Conditions, Equals and Substitutions.

31

32 Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings,
33 or engineering parameters from those indicated on the contract documents, the contractor is responsible for
34 all costs involved in integrating the equipment or accessories into the system and for obtaining the
35 performance from the system into which these items are placed. This may include changes found necessary
36 during the testing, adjusting, and balancing phase of the project.

37

38 **CONTINUITY OF EXISTING SERVICES**

39 Do not interrupt or change existing services without approval from the County or A/E. When interruption
40 is required, coordinate the down-time with the County to minimize disruption to their activities. Unless
41 specifically stated, all work involved in interrupting or changing existing services is to be done during
42 normal working hours.

43

44 **PROTECTION OF FINISHED SURFACES**

45 Refer to Division 1, General Requirements, Protection of Finished Surfaces.

46

47 Furnish one can of touch-up paint for each different color factory finish which is to be the final finished
48 surface of the product. Deliver touch-up paint with other "loose and detachable parts" as covered in the
49 General Requirements.

50

51 **SLEEVES AND OPENINGS**

52 Contractor shall provide all required sleeve and openings for pipe penetrations thru existing Penthouse
53 exterior wall.

54

55

56

1 **SEALING**
2 Sealing of sleeves/openings between piping and the sleeve, structural or partition opening shall be the
3 responsibility of the contractor.
4
5 **EQUIPMENT FURNISHED BY OTHERS**
6 The County will provide all work required for relocating the existing cooling tower make-up water meter
7 and backflow preventer. See plans for coordination and division of work.
8
9 **PROVISIONS FOR FUTURE**
10 None.
11
12 **SUBMITTALS**
13 Refer to Division 1, General Conditions, Submittals.
14
15 Submit for all equipment and systems as indicated in the respective specification sections, marking each
16 submittal with that specification section number. Mark general catalog sheets and drawings to indicate
17 specific items being submitted and proper identification of equipment by name and/or number, as indicated
18 in the contract documents.
19
20 Before submitting electrically powered equipment, verify that the electrical power and control requirements
21 for the equipment are in agreement with the project documents.
22
23 Include wiring diagrams of electrically powered equipment.
24
25 Provide electronic (PDF) copies of submittals for A/E and County review.
26
27 **CERTIFICATES AND INSPECTIONS**
28 Refer also to Division 1, General Conditions, Permits, Regulations, Utilities and Taxes.
29
30 Obtain and pay for all required State installation inspections except those provided by the
31 Architect/Engineer in accordance with code. Deliver originals of these certificates to the A/E and County.
32 Include copies of the certificates in the Operating and Maintenance Instructions.
33
34 **STREET CLOSURE**
35 Coordinate all required street / road closures with appropriate City, County and State agencies. Secure and
36 pay for all closure permits, traffic control, etc.
37
38 **OPERATION AND MAINTENANCE DATA**
39 All operations and maintenance data shall comply with the submission and content requirements specified
40 under section GENERAL REQUIREMENTS.
41
42 **TRAINING OF OWNER PERSONNEL**
43 Instruct County facilities in the proper operation and maintenance of systems and equipment provided as
44 part of this project; video tape all training sessions. Include not less than 8 hours of instruction, using the
45 Operating and Maintenance manuals during this instruction. Demonstrate startup and shutdown procedures
46 for all equipment. All training to be during normal working hours.
47
48 **RECORD DRAWINGS**
49 Refer to Division 1, General Requirements, Record Drawings.
50
51 In addition to the data indicated in the General Requirements, maintain temperature control record
52 drawings on originals prepared by the installing contractor/subcontractor. Include copies of these record
53 drawings with the Operating and Maintenance manuals.
54
55
56

1
2
3
4 **PART 2 - PRODUCTS**

5 **IDENTIFICATION**

6 **STENCILS:**

7 Not less than 1 inch high letters/numbers with flow direction arrows for marking pipe and equipment.
8 Paint shall be suitable for interior and exterior applications.

9 **SNAP-ON PIPE MARKERS:**

10 Cylindrical self-coiling plastic sheet that snaps over piping insulation and is held tightly in place without
11 the use of adhesive, tape or straps. Suitable for indoor and exterior use. Not less than 1 inch high
12 letters/numbers and flow direction arrows for piping marking. W. H. Brady, Seton, Marking Services, or
13 equal.

14 **VALVE TAGS:**

15 Round brass tags with 1/2 inch numbers, 1/4 inch system identification abbreviation, 1-1/4 inch minimum
16 diameter, with brass jack chains or brass "S" hooks around the valve stem, available from EMED Co.,
17 Seton Name Plate Company, Marking Services, or W. H. Brady.

18 **SEALING**

19 At pipe penetrations of exterior walls above grade, use urethane caulk in annular space between pipe and
20 sleeve

21
22
23
24 **PART 3 - EXECUTION**

25 **DEMOLITION**

26 Perform all demolition as indicated on the drawings to accomplish new work. Where demolition work is to
27 be performed adjacent to existing work that remains in an occupied area, construct temporary dust partition
28 to minimize the amount of contamination of the occupied space. Where pipe or duct is removed and not
29 reconnected with new work, cap ends of existing services as if they were new work. Coordinate work with
30 the user agency to minimize disruption to the existing building occupants.

31 All pipe, wiring and associated conduit, insulation, ductwork, and similar items demolished, abandoned, or
32 deactivated are to be removed from the site by the Contractor. All piping and ductwork specialties are to
33 be removed from the site by the Contractor.

34 **CONCRETE WORK**

35 Provide all cast-in-place concrete as required. Provide all layout drawings, anchor bolts, metal shapes,
36 and/or templates required to be cast into concrete or used to form concrete for support of mechanical
37 equipment.

38 **CUTTING AND PATCHING**

39 Provide all cutting and patching required for project completion..

40 **BUILDING ACCESS**

41 Arrange for the necessary openings in the building to allow for admittance of all apparatus. When the
42 building access was not previously arranged and must be provided by this contractor, restore any opening
43 to its original condition after the apparatus has been brought into the building.

44 **EQUIPMENT ACCESS**

45 Install all piping, conduit, equipment and accessories to permit access to equipment for maintenance and
46 service. Coordinate the exact location of wall and ceiling access panels and doors with the General
47 Contractor, making sure that access is available for all equipment and specialties.

1 **COORDINATION**
2 Verify that all devices are compatible for the surfaces on which they will be used.
3
4 Any installed work that is not coordinated shall be removed or relocated at the installing contractor's
5 expense.
6
7 Cooperate with the test and balance agency in ensuring Section 23 05 93 specification compliance. Verify
8 system completion to the test and balance agency (flushing, pressure testing, chemical treatment, filling of
9 liquid systems, proper pressurization and air venting of hydronic systems, clean strainers, pipe systems
10 cleaned, controls adjusted and calibrated, controls cycled through their sequences, etc.), ready for testing,
11 adjusting and balancing work. Install shutoff and balancing valves, flow measuring devices, gauges,
12 temperature controls, etc., required for functional and balanced systems.
13

14 **IDENTIFICATION**
15 Identify equipment in mechanical equipment rooms by stenciling equipment number and service with one
16 coat of black enamel against a light background or white enamel against a dark background. Use a primer
17 where necessary for proper paint adhesion.
18

19 Where stenciling is not appropriate for equipment identification, engraved name plates may be used.
20
21 Identify piping not less than once every 15 feet, not less than once in each room, adjacent to each access
22 door or panel, and on both side of the partition where exposed piping passes through walls, floors or roofs.
23 Place flow directional arrows at each pipe identification location. Use one coat of black enamel against a
24 light background or white enamel against a dark background for stenciling, or provide snap-on pipe
25 markers as specified in Part 2 – Products.
26

27 Identify valves with brass tags bearing a system identification and a valve sequence number. Valve tags
28 are not required at a terminal device unless the valves are greater than ten feet from the device or located in
29 another room not visible from the terminal unit. Provide a typewritten valve schedule indicating the valve
30 number and the equipment or areas supplied by each valve; locate schedules in each mechanical room and
31 in each Operating and Maintenance manual. Schedules in mechanical rooms to be framed under clear
32 plastic.
33

34 Use engraved name plates to identify control equipment.
35

36 **LUBRICATION**
37 Lubricate all bearings with lubricant as recommended by the manufacturer before the equipment is
38 operated for any reason. Once the equipment has been run, maintain lubrication in accordance with the
39 manufacturer's instructions until the work is accepted by County. Maintain a log of all lubricants used and
40 frequency of lubrication; include this information in the Operating and Maintenance Manuals at the
41 completion of the project.
42

43 **SLEEVES AND OPENINGS**
44 Provide schedule 40 steel pipe sleeve, core drill opening.
45

46 Where penetrating pipe or conduit weight is supported by floor, provide manufactured product or structural
47 bearing collar designed to carry load.
48

49 **SEALING**
50 At all interior walls and exterior walls, pipe penetrations are required to be sealed. Apply sealant to both
51 sides of the penetration in such a manner that the annular space between the pipe sleeve or cored opening
52 and the pipe or insulation is completely blocked.
53
54

55 **END OF SECTION**

Page Intentionally Left Blank

1
2 **SECTION 23 05 00**
3 **COMMON WORK RESULTS FOR HVAC**
4

5
6 **PART 1 - GENERAL**
7

8 **SCOPE**

9 This section includes information common to two or more technical specification sections or items that are
10 of a general nature, not conveniently fitting into other technical sections. Included are the following topics:
11

12 **PART 1 - GENERAL**

- 13 Scope
- 14 Related Work
- 15 Reference
- 16 Reference Standards
- 17 Quality Assurance
- 18 Continuity of Existing Services
- 19 Protection of Finished Surfaces
- 20 Sleeves and Openings
- 21 Sealing
- 22 Equipment Furnished By Others
- 23 Provisions for Future
- 24 Submittals
- 25 Certificates and Inspections
- 26 Street Closure
- 27 Operating and Maintenance Data
- 28 Training of Owner Personnel
- 29 Record Drawings

30
31 **PART 2 - PRODUCTS**

- 32 Identification
- 33 Sealing

34
35 **PART 3 - EXECUTION**

- 36 Demolition
- 37 Concrete Work
- 38 Cutting and Patching
- 39 Building Access
- 40 Equipment Access
- 41 Coordination
- 42 Identification
- 43 Lubrication
- 44 Sleeves and Openings
- 45 Sealing

46
47 **RELATED WORK**

48 Section 23 05 13 - Common Motor Requirements for HVAC.
49

50 **REFERENCE**

51 Applicable provisions of Division 1 govern work under this section.
52

53 **REFERENCE STANDARDS**

54 Abbreviations of standards organizations referenced in other sections are as follows:
55
56

1	AGA	American Gas Association
2	AMCA	Air Movement and Control Association
3	ANSI	American National Standards Institute
4	ARI	Air-Conditioning and Refrigeration Institute
5	ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
6	ASME	American Society of Mechanical Engineers
7	ASTM	American Society for Testing and Materials
8	AWWA	American Water Works Association
9	AWS	American Welding Society
10	CGA	Compressed Gas Association
11	CTI	Cooling Tower Institute
12	EPA	Environmental Protection Agency
13	IEEE	Institute of Electrical and Electronics Engineers
14	ISA	Instrument Society of America
15	MCA	Mechanical Contractors Association
16	MSS	Manufacturer's Standardization Society of the Valve & Fitting Industry, Inc.
17	NBS	National Bureau of Standards
18	NEBB	National Environmental Balancing Bureau
19	NEC	National Electric Code
20	NEMA	National Electrical Manufacturers Association
21	NFPA	National Fire Protection Association
22	SMACNA	Sheet Metal and Air Conditioning Contractors' National Association. Inc.
23	UL	Underwriters Laboratories Inc.
24	ASTM E814	Standard Test Method for Fire Tests of Through-Penetration Fire Stops
25	ASTM E84	Standard Test Method for Surface Burning Characteristics of Building Materials
26	UL1479	Fire Tests of Through-Penetration Firestops
27	UL723	Surface Burning Characteristics of Building Materials

28

QUALITY ASSURANCE

Refer to Division 1, General Conditions, Equals and Substitutions.

31

Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering parameters from those indicated on the contract documents, the contractor is responsible for all costs involved in integrating the equipment or accessories into the system and for obtaining the performance from the system into which these items are placed. This may include changes found necessary during the testing, adjusting, and balancing phase of the project.

37

CONTINUITY OF EXISTING SERVICES

Do not interrupt or change existing services without approval from the County or A/E. When interruption is required, coordinate the down-time with the County to minimize disruption to their activities. Unless specifically stated, all work involved in interrupting or changing existing services is to be done during normal working hours.

43

PROTECTION OF FINISHED SURFACES

Refer to Division 1, General Requirements, Protection of Finished Surfaces.

46

Furnish one can of touch-up paint for each different color factory finish which is to be the final finished surface of the product. Deliver touch-up paint with other "loose and detachable parts" as covered in the General Requirements.

50

SLEEVES AND OPENINGS

Contractor shall provide all required sleeve and openings for pipe penetrations thru existing Penthouse exterior wall.

54

55

56

- 1 **SEALING**
2 Sealing of sleeves/openings between piping and the sleeve, structural or partition opening shall be the
3 responsibility of the contractor.
4
- 5 **EQUIPMENT FURNISHED BY OTHERS**
6 The County will provide all work required for relocating the existing cooling tower make-up water meter
7 and backflow preventer. See plans for coordination and division of work.
8
- 9 **PROVISIONS FOR FUTURE**
10 None.
11
- 12 **SUBMITTALS**
13 Refer to Division 1, General Conditions, Submittals.
14
- 15 Submit for all equipment and systems as indicated in the respective specification sections, marking each
16 submittal with that specification section number. Mark general catalog sheets and drawings to indicate
17 specific items being submitted and proper identification of equipment by name and/or number, as indicated
18 in the contract documents.
19
- 20 Before submitting electrically powered equipment, verify that the electrical power and control requirements
21 for the equipment are in agreement with the project documents.
22
- 23 Include wiring diagrams of electrically powered equipment.
24
- 25 Provide electronic (PDF) copies of submittals for A/E and County review.
26
- 27 **CERTIFICATES AND INSPECTIONS**
28 Refer also to Division 1, General Conditions, Permits, Regulations, Utilities and Taxes.
29
- 30 Obtain and pay for all required State installation inspections except those provided by the
31 Architect/Engineer in accordance with code. Deliver originals of these certificates to the A/E and County.
32 Include copies of the certificates in the Operating and Maintenance Instructions.
33
- 34 **STREET CLOSURE**
35 Coordinate all required street / road closures with appropriate City, County and State agencies. Secure and
36 pay for all closure permits, traffic control, etc.
37
- 38 **OPERATION AND MAINTENANCE DATA**
39 In addition to the general content specified under GENERAL REQUIREMENTS supply the following
40 additional documentation:
- 41 • Records of tests performed a to certify compliance with system requirements
 - 42 • Certificates of inspection by regulatory agencies
 - 43 • Valve schedules
 - 44 • Lubrication instructions, including list/frequency of lubrication
 - 45 • Copies of all approved shop drawings.
 - 46 • Manufacturer's wiring diagrams for electrically powered equipment
 - 47 • Temperature control record drawings and control sequences
 - 48 • Parts lists for manufactured equipment
 - 49 • Warranties
 - 50 • Additional information as indicated in the technical specification sections
- 51
- 52 Provide three (3) hardcopies of the Operation and Maintenance Manual. Manuals shall be organized in
53 three ring binders with dividers and reference tabs. Manuals shall be delivered as follows:
- 54 • One copy to the facilities engineering.
 - 55 • (2) copies to Public Works.

1
2 Provide three (3) electronic (Adobe PDF) copies of the Operation and Maintenance Manual.

- 3 • Provide each copy on a separate portable USB flash drive.
- 4 • Deliver each portable USB drive with hardcopy manuals to parties listed above.

5
6 **TRAINING OF OWNER PERSONNEL**

7 Instruct County facilities in the proper operation and maintenance of systems and equipment provided as
8 part of this project; video tape all training sessions. Include not less than 8 hours of instruction, using the
9 Operating and Maintenance manuals during this instruction. Demonstrate startup and shutdown procedures
10 for all equipment. All training to be during normal working hours.

11
12 **RECORD DRAWINGS**

13 Refer to Division 1, General Requirements, Record Drawings.

14
15 In addition to the data indicated in the General Requirements, maintain temperature control record
16 drawings on originals prepared by the installing contractor/subcontractor. Include copies of these record
17 drawings with the Operating and Maintenance manuals.

18
19
20 **PART 2 - PRODUCTS**

21
22 **IDENTIFICATION**

23 **STENCILS:**

24 Not less than 1 inch high letters/numbers with flow direction arrows for marking pipe and equipment.
25 Paint shall be suitable for interior and exterior applications.

26
27 **SNAP-ON PIPE MARKERS:**

28 Cylindrical self-coiling plastic sheet that snaps over piping insulation and is held tightly in place without
29 the use of adhesive, tape or straps. Suitable for indoor and exterior use. Not less than 1 inch high
30 letters/numbers and flow direction arrows for piping marking. W. H. Brady, Seton, Marking Services, or
31 equal.

32
33 **VALVE TAGS:**

34 Round brass tags with 1/2 inch numbers, 1/4 inch system identification abbreviation, 1-1/4 inch minimum
35 diameter, with brass jack chains or brass "S" hooks around the valve stem, available from EMED Co.,
36 Seton Name Plate Company, Marking Services, or W. H. Brady.

37
38 **SEALING**

39 At pipe penetrations of exterior walls above grade, use urethane caulk in annular space between pipe and
40 sleeve

41
42
43 **PART 3 - EXECUTION**

44
45
46 **DEMOLITION**

47 Perform all demolition as indicated on the drawings to accomplish new work. Where demolition work is to
48 be performed adjacent to existing work that remains in an occupied area, construct temporary dust partition
49 to minimize the amount of contamination of the occupied space. Where pipe or duct is removed and not
50 reconnected with new work, cap ends of existing services as if they were new work. Coordinate work with
51 the user agency to minimize disruption to the existing building occupants.

52
53 All pipe, wiring and associated conduit, insulation, ductwork, and similar items demolished, abandoned, or
54 deactivated are to be removed from the site by the Contractor. All piping and ductwork specialties are to
55 be removed from the site by the Contractor.

- 1 **CONCRETE WORK**
2 Provide all cast-in-place concrete as required. Provide all layout drawings, anchor bolts, metal shapes,
3 and/or templates required to be cast into concrete or used to form concrete for support of mechanical
4 equipment.
5
- 6 **CUTTING AND PATCHING**
7 Provide all cutting and patching required for project completion..
8
- 9 **BUILDING ACCESS**
10 Arrange for the necessary openings in the building to allow for admittance of all apparatus. When the
11 building access was not previously arranged and must be provided by this contractor, restore any opening
12 to its original condition after the apparatus has been brought into the building.
13
- 14 **EQUIPMENT ACCESS**
15 Install all piping, conduit, equipment and accessories to permit access to equipment for maintenance and
16 service. Coordinate the exact location of wall and ceiling access panels and doors with the General
17 Contractor, making sure that access is available for all equipment and specialties.
18
- 19 **COORDINATION**
20 Verify that all devices are compatible for the surfaces on which they will be used.
21
22 Any installed work that is not coordinated shall be removed or relocated at the installing contractor's
23 expense.
24
25 Cooperate with the test and balance agency in ensuring Section 23 05 93 specification compliance. Verify
26 system completion to the test and balance agency (flushing, pressure testing, chemical treatment, filling of
27 liquid systems, proper pressurization and air venting of hydronic systems, clean strainers, pipe systems
28 cleaned, controls adjusted and calibrated, controls cycled through their sequences, etc.), ready for testing,
29 adjusting and balancing work. Install shutoff and balancing valves, flow measuring devices, gauges,
30 temperature controls, etc., required for functional and balanced systems.
31
- 32 **IDENTIFICATION**
33 Identify equipment in mechanical equipment rooms by stenciling equipment number and service with one
34 coat of black enamel against a light background or white enamel against a dark background. Use a primer
35 where necessary for proper paint adhesion.
36
37 Where stenciling is not appropriate for equipment identification, engraved name plates may be used.
38
39 Identify piping not less than once every 15 feet, not less than once in each room, adjacent to each access
40 door or panel, and on both side of the partition where exposed piping passes through walls, floors or roofs.
41 Place flow directional arrows at each pipe identification location. Use one coat of black enamel against a
42 light background or white enamel against a dark background for stenciling, or provide snap-on pipe
43 markers as specified in Part 2 – Products.
44
45 Identify valves with brass tags bearing a system identification and a valve sequence number. Valve tags
46 are not required at a terminal device unless the valves are greater than ten feet from the device or located in
47 another room not visible from the terminal unit. Provide a typewritten valve schedule indicating the valve
48 number and the equipment or areas supplied by each valve; locate schedules in each mechanical room and
49 in each Operating and Maintenance manual. Schedules in mechanical rooms to be framed under clear
50 plastic.
51
52 Use engraved name plates to identify control equipment.
53
- 54 **LUBRICATION**
55 Lubricate all bearings with lubricant as recommended by the manufacturer before the equipment is
56 operated for any reason. Once the equipment has been run, maintain lubrication in accordance with the

1 manufacturer's instructions until the work is accepted by County. Maintain a log of all lubricants used and
2 frequency of lubrication; include this information in the Operating and Maintenance Manuals at the
3 completion of the project.

4

5 **SLEEVES AND OPENINGS**

6 Provide schedule 40 steel pipe sleeve, core drill opening.

7

8 Where penetrating pipe or conduit weight is supported by floor, provide manufactured product or structural
9 bearing collar designed to carry load.

10

11 **SEALING**

12 At all interior walls and exterior walls, pipe penetrations are required to be sealed. Apply sealant to both
13 sides of the penetration in such a manner that the annular space between the pipe sleeve or cored opening
14 and the pipe or insulation is completely blocked.

15

16

17

END OF SECTION

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56

SECTION 23 05 14
VARIABLE FREQUENCY DRIVES

PART 1 GENERAL

Applicable provisions of Division 1 shall govern all work under this Section

SCOPE

This section includes variable frequency drives, bypass starters, and line reactors. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Reference Standards
- Submittals
- Operating and Maintenance Data
- Equipment Startup
- Warranty

PART 2 - PRODUCTS

- Manufacturers
- Design and Construction
- Performance Requirements
- Control Features
- Protection Features
- Diagnostics
- Quality Assurance Tests
- Bypass Equipment
- AC Input Line Reactors
- Output Line Filters

PART 3 - EXECUTION

- Variable Frequency Drives (VFD)
- Training

RELATED WORK

Section 23 65 00 - Cooling Towers

REFERENCE

Applicable provisions of Division 1 govern work under this section.

REFERENCE STANDARDS

ANSI/IEEE 519 Guide for Harmonic Control and Reactive Compensation of Static Power Converters

SUBMITTALS

Submit shop drawings and product data under provisions of Division 1, General Conditions of the Contract.

Include physical, electrical, and performance characteristics of each variable frequency drive and associated components, including dimensions; weight; input and output performance; voltage, phase, current and overcurrent characteristics; installation instructions; protective features; wiring and block diagrams indicating specified options; electrical noise attenuation equipment where required to meet the criteria specified; line side voltage notch wave form and line side current harmonics; certified efficiency versus load and speed curves; and required operating environment.

1 **OPERATION AND MAINTENANCE DATA**

2 All operations and maintenance data shall comply with the submission and content requirements specified
3 under section GENERAL REQUIREMENTS.
4

5 **EQUIPMENT STARTUP AND TRAINING**

6 Provide the services of a factory trained and certified technician to approve the installation; start-up, test,
7 and adjust for proper operation of the unit(s). Upon completion of the equipment startup, submit a
8 complete manufacturer's field report, including startup and test log, signed by the factory trained
9 technician. Coordinate with the Temperature Control Contractor and the Balancing Contractor.
10

11 **WARRANTY**

12 The warranty shall be for a period of twenty-four (24) months from the date of project Substantial
13 Completion. Further, the warranty shall include all parts, labor, travel time, administrative costs, overhead,
14 travel expenses, technical support and any and all other costs to provide the warranty service.
15

16 **PART 2 PRODUCTS**

17 **MANUFACTURERS**

18 ABB. Other manufacturers by prior approval from the A/E only.
19
20

21 **DESIGN AND CONSTRUCTION**

22 The unit shall be variable torque, modular design for control of the motors as specified in Division 23 and
23 rated at the motor full load nameplate amps.
24

25 The unit shall be U.L. listed, solid state, microprocessor based with a pulse width modulated (PWM) output
26 wave form (none others are acceptable).
27

28 The VFD shall employ a full wave bridge rectifier and capacitors to minimize the ripple of the rectified
29 voltage to maintain near constant DC voltage. Insulated gate bipolar transistors (IGBT's) shall be
30 employed as the output switching device.
31

32 The VFD package shall contain the equivalent of 5% impedance to reduce harmonic distortion. The 5%
33 equivalent impedance shall be provided in the form of a DC bus choke, an input AC line reactor in each
34 phase, or a combination of the two methods.
35

36 Control circuitry shall be plug-in, plug-out modular basis with a corrosion resistant coating on printed
37 circuit boards.
38

39 Units to be suitable for an operating environment from 0°C to 40°C temperature and humidity up to 90%
40 non-condensing.
41

42 Electrically and physically isolate control circuitry and conductors from power circuitry and power
43 conductors. Control conductors and power conductors shall not be run in the same pathway.
44

45 The unit enclosure shall be NEMA 12 as required for the application minimum and all components shall be
46 fully factory assembled and tested prior to leaving the manufacturing facility.
47

48 Include the following operating and monitoring devices mounted on the front cover:

49 A disconnect switch or circuit breaker to de-energize both the drive and bypass circuit with door
50 interlocked handle and lock-open padlocking provisions.

51 Operating mode selector switch marked "hand-off-auto".

52 Manual speed adjustment via keypad, mounted on the door.

53 Manual bypass selector switch to select power through drive or bypass.
54

55 Provide a manual bypass circuit and bypass starter to transfer from variable frequency drive operation to
56 bypass operation.

1 **PERFORMANCE REQUIREMENTS**

2 Units shall be suitable for input power of electrical system as scheduled on the drawings $\pm 10\%$, 3 phase, 60
3 Hertz nominal.

4
5 Use a current limiting control device to limit output current to 110% continuous for one minute; also refer
6 to Protection Features in this section. Full load output current available from drive shall not be less than
7 motor nameplate amperage. The full load amp rating of the VFD shall not be less than the values indicated
8 in the NEC Table 430-150.

9
10 Output power shall be suitable for driving standard NEMA B design, three phase alternating current
11 induction motors at full rated speed with capability of 6:1 turndown.

12
13 Additional performance capabilities to include the following:

- 14 Ride through a momentary power outage of 15 cycles,
- 15 Start into a rotating load without damage to drive components or motor,
- 16 Capable of automatic restart into a rotating load after a preset, adjustable time delay
- 17 following a power outage
- 18 Input power factor: Min 0.95 throughout the speed range
- 19 Minimum efficiency: 95% at 100% speed, 85% at 50% speed

20
21 **CONTROL FEATURES**

22 Use control circuits compatible with input signal from temperature control system in the automatic mode
23 and from manual speed control in the manual mode. Vary motor speed in response to the input control
24 signal. Include components necessary to accept the signal from the temperature control system in the form
25 that it is sent. Refer to Division 23 00 00.

26
27 Include the following additional control features:

- 28 • Hand-Off-Automatic (HOA) selector switch to select local or remote start/stop and speed control
- 29 • Analog input, selectable 0-10v or 4-20 mA, for automatic control from the temperature control system
- 30 • Local speed control at the VFD
- 31 • Adjustable acceleration and deceleration rate so that the time period from start to full speed and from
- 32 full speed to stop can be field adjusted
- 33 • Adjustable minimum and maximum speed settings for both automatic and manual modes of operation
- 34 • Manual transfer bypass circuit
- 35 • Field adjustment of minimum and maximum output frequency
- 36 • Two (2) sets of programmable form "C" contacts for remote indication of variable frequency drive
- 37 condition. Note: default programming to be set for "Drive Run & Fault".
- 38 • Illuminated display keypad.
- 39 • External Fault indicator
- 40 • One (1) input for a N.O. dry contact type input for a 2-wire remote start/stop
- 41 • One (1) input for a N.C. dry contact type input for external faults: (freezestats, fire alarm, smokes, etc).
- 42 This input shall be factory wired to prevent both the VFD and bypass starter operation when external
- 43 fault is present.
- 44 • One (1) N.O. dry contact output for proving motor status. This output shall be programmed to detect
- 45 belt or coupling break that would remove the load from the motor. The dry contact will open on loss
- 46 of load or VFD being off.
- 47 • PID control loop capable of VFD control from an external device connected to a VFD analog input.

48
49 The VFD controller shall convert VFD information into the BACnet MSTP protocol that will be
50 compatible with the existing building direct digital control system. This output shall be through a serial
51 interface port capable of two-way communication with the building EMS provided on this project. Final
52 connection shall not require any additional intermediate gateway devices to provide throughput of data.

1 The following data shall be provided at a minimum:

- 2 • Fault condition
- 3 • Speed
- 4 • Amperage
- 5 • Frequency
- 6 • Voltage
- 7 • Bypass status (if supplied)

8
9 **PROTECTION FEATURES**

10 Use electronic protection circuitry in the power circuits to provide an orderly shutdown of the drive without
11 blowing fuses or tripping circuit breakers and prevent component loss under the following abnormal
12 conditions:

- 13 • Activation of any safety device
- 14 • Instantaneous overcurrent and/or over voltage of output
- 15 • Power line overvoltage and undervoltage protection
- 16 • Phase loss
- 17 • Single and three phase short circuiting
- 18 • Ground faults
- 19 • Control circuit malfunction
- 20 • Overtemperature
- 21 • Output current over limit

22
23 Provide the following additional protective features:

- 24 • Input transient overvoltage protection up to 3000 volts per ANSI 37.90A;
- 25 • DC bus fusing or other electronic controls which limit the rate of rise of the DC bus current and de-
26 energizes the drive at a predetermined current level;
- 27 • Fusing for the control circuit transformer;
- 28 • Grounded control chassis; and
- 29 • Devices and/or control circuitry to ensure that the variable frequency drive and bypass starter are not
30 both energized and driving motor simultaneously.

31
32 **DIAGNOSTICS**

33 Provide an English character display (no error codes) with indicators for the following:

- 34 • Phase loss
- 35 • Ground fault
- 36 • Overcurrent
- 37 • Overvoltage
- 38 • Undervoltage
- 39 • Over temperature
- 40 • Overload
- 41 • DC bus status

42
43 **QUALITY ASSURANCE TESTS**

44 Field performance test of variable frequency drives to determine compliance with this specification will be
45 performed at the County's discretion and may include any specified feature, including operation of
46 protective devices through a simulated fault. Contractor will pay for initial testing. Should drive be found
47 deficient by this testing, drive manufacturer will be required to make any and all changes necessary to bring
48 unit(s) into compliance with the specified performance and demonstrate this performance by retesting.
49 Cost of changes and retest will be by the contractor.

50
51 Variable frequency drive manufacturer or designated representative to perform a field test of each drive, in
52 the presence of the county, for the following items:

- 53 • Provide general inspection to verify proper installation;
- 54 • Demonstrate drive reaction to simulated power interruptions of two seconds and sixty seconds;

- Demonstrate adequate protection during switching from variable frequency drive operation to bypass starter operation and back again;

BYPASS EQUIPMENT

Bypass Starters:

- The bypass starters for 208 volt motors, 20 HP and less; and 480 volt motors, 40 HP and less, shall be across-the-line magnetic starter type.
- The bypass starters for 208 volt motors, 25 HP and more; and 480 volt motors, 50 HP and more, shall be solid state reduced voltage starting type.

Bypass Configuration:

- Provide one main disconnect switch or circuit breaker to de-energize both the drive and bypass circuit. Provide a drive input disconnect switch or fuse block to allow the drive to be isolated while the bypass circuit is energized. Provide one output drive contactor and one output bypass contactor. The two output contactors shall be electrically interlocked to allow only one contactor to be closed at any one time.

Provide motor overload protection in the bypass circuit.

Provide bypass equipment in a common enclosure with the VFD or, if not available, in a separate enclosure.

AC INPUT LINE REACTORS

When needed to comply with the requirement for 5% equivalent impedance, furnish and factory install AC input line reactors.

Line reactors shall be installed in each phase of the AC input side of the VFD and mounted within a common enclosure with the VFD.

Line reactor shall be a three phase inductor, iron core, 600V, Class H insulation, 115 degree C rise, copper windings with screw type terminal blocks.

PART 3 EXECUTION

VARIABLE FREQUENCY DRIVES

Install where indicated on drawings and in accordance with approved submittals and manufacturer's published recommendations. Installation to be by this contractor.

Input power wiring shall be installed in a separate conduit, output power wiring shall be installed in a separate conduit and control wiring shall be installed in a separate conduit. Do not mix input power, output power, or control wiring in a common conduit. Separate conduits for input and output power wiring shall be provided for each motor. Input and output power wiring for more than one motor shall not share a common conduit. Power wiring shall be furnished and installed by this contractor. If provided, do not mount output line filter above the drive.

Temperature Control Contractor will furnish and install the required temperature control wiring in metal conduit.

TRAINING

Contractor to provide factory authorized representative and/or field personnel knowledgeable with the operations, maintenance and troubleshooting of the system and/or components defined within this section for a minimum period of 4 hours.

END OF SECTION

Page Intentionally Left Blank

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54

SECTION 23 05 15
PIPING SPECIALTIES

PART 1 - GENERAL

SCOPE

This section contains specifications for HVAC piping specialties for all piping systems. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Quality Assurance
- Shop Drawings
- Operation and Maintenance Data
- Design Criteria

PART 2 - PRODUCTS

- Thermometers
- Thermometer Sockets
- Test Wells
- P/T (Pressure/Temperature) Test Plugs
- Hose Connection Caps
- Pressure Gauges
- Strainers
- Air Vents
- Flow Sensing Devices

PART 3 - EXECUTION

- Thermometers
- Thermometer Sockets
- Test Wells
- P/T (Pressure/Temperature) Test Plugs
- Pressure Gauges
- Strainers
- Air Vents
- Flow Sensing Devices

RELATED WORK

- Section 23 21 13 - Hydronic Piping
- Section 23 05 23 - General-Duty Valves for HVAC Piping
- Section 23 05 29 - Hangers and Supports for HVAC Piping and Equipment

REFERENCE

Applicable provisions of Division 1 govern work under this section.

QUALITY ASSURANCE

Refer to division 1, General Conditions, Equals and Substitutions.

SHOP DRAWINGS

Refer to division 1, General Conditions, Submittals.

1 Required for all items in this section; Include materials of construction, dimensional data,
2 ratings/capacities/ranges, pressure drop data where appropriate, and identification as referenced in this
3 section and/or on the drawings.
4

5 **OPERATION AND MAINTENANCE DATA**

6 All operations and maintenance data shall comply with the submission and content requirements specified
7 under section GENERAL REQUIREMENTS.
8

9 **DESIGN CRITERIA**

10 All piping specialties are to be rated for the highest pressures and temperatures in the respective system in
11 accordance with ANSI B31, but not less than 125 psig unless specifically indicated otherwise.
12

13 **PART 2 - PRODUCTS**

14 **THERMOMETERS**

15 Manufacturers: Ashcroft, Marsh, Taylor, H. O. Trerice, U. S. Gauge, Weiss, Weksler.
16
17

18 Stem Type, cast aluminum case, nine inch scale, clear acrylic window. adjustable angle brass stem with
19 stem of sufficient length so the end of the stem is near the middle of a pipe without reducing the thickness
20 of any insulation, red or blue indicating fluid, black lettering against a white background, with scale ranges
21 as follows: Condenser Water: 30°F – 130°F with 1 degree increments.
22

23 **THERMOMETER SOCKETS**

24 Brass with threaded connections suitable for thermometer stems and temperature control sensing elements
25 in pipeline. Furnish with extension necks for insulated piping systems.
26

27 **TEST WELLS**

28 Similar to thermometer sockets except with a brass cap that thread into the inside of the test well to prevent
29 dirt from accumulating. Secure cap to body with a short chain. Furnish with extension necks, where
30 appropriate, to accommodate the pipeline insulation.
31

32 **P/T (PRESSURE/TEMPERATURE) TEST PLUGS**

33 Brass plug with 1/4" NPT threads, EPDM or neoprene valve core, knurled cap with cap strap. Use
34 extended length plugs to clear insulated piping. Adaptors shall have 1/4" FPT connection for standard
35 pressure gauges.
36

37 **HOSE CONNECTION CAPS**

38 Hose connection caps shall be pressure rated for 150 psig at 180 deg F.
39

40 **PRESSURE GAUGES**

41 Manufacturers: Ametek/U. S. Gauge Division, Ashcroft, Marsh, Taylor, H. O. Trerice, Weiss, Weksler.
42

43 Cast aluminum case of not less than 4.5 inches in diameter, double strength glass window, black lettering
44 on a white background, phosphor bronze bourdon tube with bronze bushings, recalibration from the front of
45 the dial, 99% accuracy over the middle half of the scale, 98.5% accuracy over the remainder of the scale,
46 with scale range as follows:
47

48 **Pressure Snubbers:**

49 Bronze construction, suitable for system working pressure, 1/4" size.
50

51 **Gauge Valves:**

52 Use valves as specified in Section 23 05 23 - General-Duty Valves for HVAC Piping. For water systems,
53 use 1/4" ball valves. For steam systems, use 1/4" gate valves suitable for system working pressure.
54

55 **STRAINERS**

56 Manufacturers: Armstrong, Hoffman, Illinois, Keckley, Metraflex, Mueller Steam, or Sarco.

1 WATER SYSTEMS:
2 Y type; cast iron body; stainless steel screens; bolted or threaded screen retainer tapped for a blow off
3 valve; threaded body in sizes through 2 inch and rated at not less than 175 psi WOG; flanged body in sizes
4 over 2 inch and rated at not less than 125 psi WOG at 240°F. Screen to be 20 mesh for line sizes 2 inch
5 and less, 0.125 inch perforations for line sizes 2-1/2 inch through 4 inch, and 0.25 inch perforations for line
6 sizes 5 inch and larger.

7
8 **AIR VENTS**

9 **MANUAL KEY TYPE VENTS:**

10 Bell and Gossett Model 4V; Eaton/Dole Model 9, 9B, or 14A.

11
12 Bronze body with nonferrous internal parts, screwdriver operated, designed to relieve air from the system
13 when vent is opened, rated at not less than 125 psig at 220°F.

14
15 **MANUAL BALL VALVE VENTS:**

16 Provide 1/4" ball valves for manual venting of air handling unit coils and where indicated elsewhere on
17 drawings and details. Reference specifications section 23 05 23.

18
19 **FLOW SENSING DEVICES**

20 For water flow sensing devices 2 inch and smaller, use balance valves as specified in Section 23 05 23 -
21 General-Duty Valves for HVAC Piping.

22
23 **PITOT TUBE FLOW SENSORS - TYPE 1:**

24 Dieterich Standard/Annubar, Preso, or approved equal.

25
26 Multi-port averaging type flow sensor designed to sense the velocity of a fluid flowing in a pipe and
27 produce a pressure output that is proportional to the fluid velocity. Sensor to consist of a type 316 stainless
28 steel probe with a diamond or elliptical shape of sufficient length to sense flow completely across the pipe
29 section and to accommodate the insulation specified for the pipeline; brass body gate, needle, or ball
30 instrument connection valves with appropriate fitting for connection to a meter; single forged steel weld
31 type installation fitting for pipe sizes through 6 inch, double forged steel weld type installation fittings for
32 use on opposite ends of the sensor for larger pipe sizes if recommended by the manufacturer for the
33 application; accurate within 2% of the actual flow with a turndown ratio of 10:1 or better; permanently
34 stamped nameplate attached to the sensor indicating the flow/differential pressure characteristics of the
35 sensor; suitable for use on systems to 150 psig at 250°F.

36
37
38 **PART 3 - EXECUTION**

39
40 **THERMOMETERS**

41 Install in piping systems as indicated on the drawings and/or details using a separable socket in each
42 location.

43
44 **THERMOMETER SOCKETS**

45 Install at each point where a thermometer or temperature control sensing element is located in a pipeline.

46
47 **TEST WELLS**

48 Install in piping systems as indicated on the drawings and/or details wherever provisions are needed for
49 inserting a thermometer at a later date.

50
51 **P/T (PRESSURE/TEMPERATURE) TEST PLUGS**

52 Install in piping systems as indicated on the drawings and/or details. Do not insulate over test plugs.

53
54 **PRESSURE GAUGES**

55 Install in locations where indicated on the drawings and/or details, including any gauge piping, with scale
56 range appropriate to the system operating pressures.

- 1
2 **PRESSURE SNUBBERS:**
3 Install in gauge piping for all gauges used on water services.
4
5 **GAUGE VALVES**
6 Install at each gauge location as close to the main as possible and at each location where a gauge tapping is
7 indicated.
8
9 **STRAINERS**
10 Install all strainers where indicated on the project details, allowing sufficient space for the screens to be
11 removed. Rotate screen retainer where required by the installation so blowdown can remove accumulated
12 dirt from the strainer body.
13
14 **WATER SYSTEMS:**
15 Install a ball valve for blowdown in the tapped screen retainer; valve to be the same size as the tapping.
16
17 **AIR VENTS**
18
19 **MANUAL KEY TYPE VENTS:**
20 Install at all high points where air may collect and not be carried by the system fluid. Use a soft Type L
21 copper "pigtail" so the vent can be positioned for venting and collecting any water that might escape.
22
23 **MANUAL BALL VALVE VENTS:**
24 Install on air handling coils and where indicated elsewhere as shown on drawings and details.
25
26 **FLOW SENSING DEVICES**
27 Install where indicated on the drawings and details for flow sensing in hydronic and/or steam piping
28 systems. Butterfly valves installed at the location of a flow sensing device are to have a memory stop.
29
30
31

END OF SECTION

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56

SECTION 23 05 23
GENERAL-DUTY VALVES FOR HVAC PIPING

PART 1 - GENERAL

SCOPE

This section includes valve specifications for all HVAC systems except where indicated under Related Work. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Quality Assurance
- Submittals
- Operation and Maintenance Data
- Design Criteria

PART 2 - PRODUCTS

- Manufacturers
- Bypass Valves
- Water System Valves
 - Gate Valves
 - Ball Valves
 - Butterfly Valves
 - Globe Valves
 - Balance Valves
 - Drain Valves
- Specialty Valves and Valve Accessories
 - Gauge Valves

PART 3 - EXECUTION

- General
- Shut-off Valves
- Drain Valves

RELATED WORK

Section 23 05 15 - Piping Specialties

REFERENCE

Applicable provisions of Division 1 govern work under this section.

QUALITY ASSURANCE

Refer to division 1, General Conditions, Equals and Substitutions.

SUBMITTALS

Refer to division 1, General Conditions, Submittals.

Contractors shall submit a schedule of all valves indicating type of service, dimensions, materials of construction, and pressure/temperature ratings for all valves to be used on the project. Temperature ratings specified are for continuous operation.

OPERATION AND MAINTENANCE DATA

All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

1 **DESIGN CRITERIA**

2 Where valves are specified for individual mechanical services all valves shall be of the same manufacturer
3 unless prior written approval is obtained from County.
4

5
6 **PART 2 - PRODUCTS**
7

8 **MANUFACTURERS**

9 Anvil, Apollo, Armstrong, Bell & Gossett, Cash-Acme, Dresser Consolidated, Conval, Crane, Anderson
10 Greenwood and Crosby, Danfoss-Flomatic, DeZurik, Durco, Fisher, Grinnell, Griswold, Hammond,
11 Hancock, Hoffman, Jamesbury, Keystone, Kunkle, Leslie, Lunkenheimer/Cincinnati, Metraflex,
12 Milwaukee, Mueller, Newco, Nexus, Nibco, Powell, RP&C, Sarco, Spence, Stockham, Taco, Tasco,
13 Thrush-Amtrol, Vogt, Watts, or approved equal.
14

15 **WATER SYSTEM VALVES**

16 All water system valves to be rated at not less than 125 psig water working pressure at 240°F unless noted
17 otherwise.
18

19 **GATE VALVES:**

20 2" and smaller: Use ball valves; gate valves will not be accepted in sizes 2" and smaller.
21

22 2-1/2" and larger: Use butterfly valves; gate valves will not be accepted in sizes 2-1/2" and larger.
23

24 **BALL VALVES:**

25 2" and smaller: Two piece bronze body; threaded or soldered ends, as appropriate to the pipe material;
26 stainless steel or chrome plated brass/bronze ball; conventional port; glass filled teflon seat; threaded
27 packing gland follower; blowout-proof stem; 600 psig WOG.
28

29 Valve stems shall allow operators to clear insulation without interference. Provide stem extensions when
30 valve operators interfere with pipe insulation.
31

32 Apollo 70-100/200 series, Hammond 8301/8311, Milwaukee BA100/150, Nibco T/S 585-70, Stockham
33 S206/216.
34

35 2-1/2" and over: Ball valves will not be accepted in sizes over 2 inch.
36

37 **BUTTERFLY VALVES**

38 2" and smaller: Use ball valves; butterfly valves will not be accepted in sizes 2 inch and smaller.
39

40 2-1/2" and larger: Cast iron body; stainless steel shaft; Teflon, nylatron, or acetal bearings; EPDM resilient
41 seat. Disk to be bronze, aluminum-bronze, nickel plated ductile iron, cast iron with welded nickel edge, or
42 316 - stainless steel. Pressure rated to 150 psig. Valve assembly to be bi-directionally bubble tight to 150
43 psig with no downstream flange/pipe attached. Nylon coated ductile iron discs are not acceptable.
44 Polymid or polyamide coated valves are not acceptable.
45

46 Valve stems shall allow operators to clear insulation without interference. Provide stem extensions when
47 valve operators interfere with pipe insulation.
48

49 Use threaded lug type valves for installation with class 125/150 flanges.
50

51 Centerline series 200, DeZurik BOS-CL, Keystone Fig. 222, Nibco LD2000 (2-1/2"-12")/LD1000 (14"
52 and above), Bray Series 31H, Victaulic 300 series (2-1/2"-12")/709 series (14"-24").
53

54 Provide ten-position lever actuators for valves 6" and smaller. Provide worm gear operators for valves 8"
55 and larger.
56

1 Where butterfly valves are indicated or specified to be installed at the location of a flow sensing device,
2 provide the butterfly valves with a memory stop.

3
4 **GLOBE VALVES:**

5 Do not use globe valves for water service, except in temperature control applications.

6
7 **BALANCE VALVES:**

8 2-1/2" and larger: Use butterfly valves as specified in this section along with a flow sensing device as
9 specified in Section 23 05 15.

10
11 **DRAIN VALVES:**

12 Use 3/4 inch ball valve with threaded hose adapter except strainer blowdown valves to be the same size as
13 the blowdown connection. Provide hose connection caps pressure rated for 150 psig at 180 deg F.

14
15 **SPECIALTY VALVES AND VALVE ACCESSORIES**

16
17 **GAUGE VALVES:**

18 Water Service: Use 1/4" ball valves.

19

20

21

22

23

24

25

26

27

28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

51

52

53

54

55

PART 3 - EXECUTION

GENERAL

Properly align piping before installation of valves in an upright position; operators installed below the valves will not be accepted.

Install valves in strict accordance with valve manufacturer's installation recommendations. Do not support weight of piping system on valve ends.

Install all temperature control valves.

Install all valves with the stem in the upright position. Valves may be installed with the stem in the horizontal position only where space limitations do not allow installation in an upright position or where large valves are provided with chain wheel operators. Where valves 2-1/2" and larger are located more than 12'-0" above mechanical room floors, install valve with stem in the horizontal position and provide a chain wheel operator. Valves installed with the stems down, will not be accepted.

Install stem extensions when shipped loose from valve.

Prior to flushing of piping systems, place all valves in the full-open position.

SHUT-OFF VALVES:

Install shut-off valves at all equipment, at each branch take-off from mains, and at each automatic valve for isolation or repair.

WATER SYSTEM:

Butterfly valves installed at the location of a flow sensing device are to have a memory stop.

DRAIN VALVES

Provide drain valves for complete drainage of all systems. Locations of drain valves include low points of piping systems, equipment locations specified or detailed including reheat coils, other locations required for drainage of systems.

END OF SECTION

Page Intentionally Left Blank

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56

SECTION 23 09 23
DIRECT DIGITAL CONTROL SYSTEM FOR HVAC

PART 1 - GENERAL

SCOPE

The existing building utilizes an Alerton direct digital control (DDC) system. This project will remove (2) existing cooling towers and replace with (2) new cooling towers with variable frequency drives. By alternate bid, a basin sweeping filtration system will be added. All systems will be integrated into the existing building Alerton DDC system. This project shall provide:

- All new controller required to integrate and control (2) new cooling towers with variable frequency drives.
- All control wiring (low and line voltage) for a complete operating system.
- Extension of Alerton BACnet trunk from NC-4 in City County Building. Automation graphics to included new cooling towers, variable frequency drives and basin sweeping system added to main HVAC 11 BAS server in matching graphical format.

All systems shall be integrated into the Alertron DDC system.

All new controllers, control wiring and temperature control valves shall follow current City County Building protocols to provide building continuity in regards to controllers, wiring and equipment.

Work in this section includes Direct Digital Control (DDC) panels, main communication trunk, software programming, and other equipment and accessories necessary to constitute a complete Direct Digital Control (DDC) system.

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Reference Standards
- Quality Assurance
- Submittals
- Operation and Maintenance Data
- Material Delivery and Storage

PART 2 - PRODUCTS

- General
- Control Valves
- Thermostats

PART 3 - EXECUTION

- General
- Installation
- Sequence of Operation
- Owner Training
- Points List

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

REFERENCE

Applicable provisions of Division 1 govern work under this section.

1
2 **REFERENCE STANDARDS**

3 FCC Part 15, Subpart J, Class A - Digital Electronic Equipment to Radio Communication Interference

4
5 **QUALITY ASSURANCE**

6
7 APPROVED MANUFACTURER:

8 Alterton.

9
10 INSTALLER:

11 The installer shall be specialized and experienced in Alterton DDC control systems and installation for not
12 less than 5 years. All engineering work shall be done by qualified employees of Alterton, or qualified
13 employees of an Alerton Authorized Representative that provides engineering and commissioning of
14 Alerton control equipment. Where installing contractor is an authorized representative of Alerton, submit
15 written confirmation of such authorization. Indicate in letter of authorization that the installing contractor
16 has successfully completed all necessary training required for the engineering, installation, and
17 commissioning of equipment and systems to be provided for the project and that such authorization has
18 been in effect for a period of not less than three years. The letter of authorization should also indicate that
19 the installing contractor is authorized to install Alerton DDC equipment at the project location at the time
20 the project is bid. Installation of the equipment shall be done by qualified mechanics and/or electricians in
21 the direct employ or be directly subcontracted and under the supervision of Alerton or Authorized Alerton
22 Representative. The contractor providing and installing the equipment under this specification section shall
23 be the same contractor providing and installing equipment under the 23 09 14 specification section.

24
25 The owners preferred Alterton temperature control system installer is:

26
27 Environmental Systems Inc.
28 Brookfield, Wisconsin Office
29 3410 Gateway Road
30 Brookfield, WI 53045
31 Office: 262-544-8860
32 Facsimile: 262-544-0783
33 Contact: Jerry Gitlewski

34
35 **RESPONSE TIME:**

36 During warrantee period, three (3) hours or less, 24-hours/day, 7 days/week.

37
38 ELECTRICAL STANDARDS:

39 Provide electrical products, which have been tested, listed and labeled by Underwriters' Laboratories (UL)
40 and comply with NEMA standards.

41
42 DDC Standards: DDC manufacturer shall provide written proof with shop drawings that the equipment
43 being provided is in compliance with F.C.C. rules governing the control of interference caused by Digital
44 Electronic Equipment to Radio Communications (Part 15, Subpart J, Class A).

45
46 **SUBMITTALS**

47 Provide submittals on all DDC control work.

48
49 Details of construction, layout, and location of each temperature control panel within the building,
50 including instruments location in panel and labeling. Indicate which piece of mechanical equipment is
51 associated with each controller and what area within the building is being served by that equipment. For
52 terminal unit control, provide a room schedule that would list mechanical equipment tag, room number of
53 space served, address of DDC controller, and any other pertinent information required for service.

1 A complete description of each control sequence for equipment that is not controlled by direct digital
2 controls. Direct digital controlled equipment control sequences will be provided by the DDC control
3 contractor.

4 PRODUCT DATA

5 Submit manufacturer's specifications for each control device furnished, including installation instructions
6 and startup instructions. General catalog sheets showing a series of the same device is not acceptable
7 unless the specific model is clearly marked. Annotated software program documentation shall be submitted
8 for system sequences, along with descriptive narratives of the sequence of operation of the entire system
9 involved. Submit wiring diagram for each electrical control device along with other details required to
10 demonstrate that the system has been coordinated and will function as a system.

11
12 MAINTENANCE DATA

13 Submit maintenance data and spare parts lists for each control device. Include this data in maintenance
14 manual.

15
16 RECORD DRAWINGS

17 Provide as-built record control drawings, including sequences, for the installation of all DDC controls.

18
19 **OPERATION AND MAINTENANCE DATA**

20 All operations and maintenance data shall comply with the submission and content requirements specified
21 under section GENERAL REQUIREMENTS.

22
23 **MATERIAL DELIVERY AND STORAGE**

24 Provide factory shipping cartons for each piece of equipment and control device. This contractor is
25 responsible for storage of equipment and materials inside and protected from the weather.

26
27
28 **PART 2 - PRODUCTS**

29
30 **GENERAL**

31 Provide DDC control and actuation to accomplish Sequence of Operation (indicated below) and DDC
32 Points list. Provide all controllers, temperature control panels, wiring, etc. for a complete installation.

33
34 Controls installed as part of this project shall be fully compatible with existing DDC controls located within
35 the facility.

36
37 Provide updated DDC/BAS graphics reflecting new work and sequences of control.

38
39 Provide all required installation, termination, wiring, power, graphics and programming for a complete
40 operating system.

41
42
43 **PART 3 - EXECUTION**

44
45 **GENERAL**

46 All electronic work required as an integral part of the Direct Digital Control system work is the
47 responsibility of this contractor.

48
49 This contractor shall provide all labor, materials, engineering, software, permits, tools, checkout and
50 certificates required to install a complete Direct Digital Control system as herein specified.

51
52 This Direct Digital Control system as herein specified shall be fully integrated and completely installed by
53 this section. It shall include all required computer CPU software and hardware. Include the engineering,
54 installation, supervision, calibration, software programming, and checkout necessary for a fully operational
55 system.

56

1 **INSTALLATION**

2 All work and materials are to conform in every detail to the rules and requirements of the National
3 Electrical Code and present manufacturing standards. All material shall be UL approved.

4 Install system and materials in accordance with manufacturer's instructions, rough-in drawings and details
5 on drawings.

6
7 Any line voltage wiring to be by this contractor.

8
9 Label all control devices with the exception of dampers, valves, and terminal unit devices with permanent
10 printed labels that correspond to control drawings. Temperature control junction and pullboxes shall be
11 identified utilizing spray painted green covers. Other electrical system identification shall follow the 26 05
12 53 specification.

13
14 All control devices and electrical boxes mounted on insulated ductwork shall be mounted over the
15 insulation. Provide mounting stand-offs where necessary for adequate support. Cutting and removal of
16 insulation to mount devices directly on ductwork is not acceptable. This contractor shall coordinate with
17 the insulation contractor to provide for continuous insulation of ductwork.

18
19 Provide all electrical relays and wiring, line and low voltage, for control systems, devices and components.
20 Install all high voltage and low voltage wiring (includes low voltage cable) in rigid metal conduit. All
21 conduit must be installed in accordance with electrical sections (Division 26) of this specification and the
22 National Electrical code.

23
24 Conduit shall be a minimum of 1/2 " for low voltage control provided the pipe fill does not exceed 40%.

25
26 Minimum low voltage wiring gauge to be 18 AWG for outputs and 20 AWG for inputs. All low voltage
27 wiring to be stranded.

28
29 Low voltage wiring can be run without conduit above accessible lay-in tile ceilings. All wiring in
30 mechanical rooms, above inaccessible hard ceilings, exterior locations, and in any exposed areas, and in all
31 other locations should be in conduit. Wire for wall sensors must be run in conduit. Wiring for radiation
32 valves shall be run in conduit where routed through walls.

33
34 Where wiring is installed free-air, installation shall consider the following:

- 35 • Wiring shall utilize the cable tray wherever possible.
- 36 • Wiring shall run at right angles and be kept clear of other trades work.
- 37 • Wiring shall be supported utilizing "J" or "Bridal-type" steel mounting rings anchored to ceiling
38 concrete, piping supports, walls above ceiling or structural steel beams. Mounting rings shall be of
39 open design (not a closed loop) to allow additional wire to be strung without being threaded through
40 the ring. For mounting rings that do not completely surround the wire, attach the wire to the mounting
41 ring with a strap.
- 42 • Supports shall be spaced at a maximum 4-foot interval unless limited by building construction. If
43 wiring "sag" at mid-span exceeds 6-inches; another support shall be used.
- 44 • Wiring shall never be laid directly on the ceiling grid or attached in any manner to the ceiling grid
45 wires.
- 46 • Wall penetrations shall be sleeved.

47
48 Wiring shall not be attached to existing cabling, existing tubing, plumbing or steam piping, ductwork,
49 ceiling supports or electrical or communications conduit.

50
51 Mount control panels adjacent to associated equipment on vibration-free walls or free-standing angle iron
52 supports. One cabinet may accommodate more than one system in same equipment room. Provide
53 engraved plastic nameplates for instruments and controls inside cabinet and on cabinet face.

- 1 Provide as-built control drawings of all systems served by each local panel in a location adjacent to or
2 inside of panel cover. Provide a protective cover or envelope for drawings.
3
4 Provide all necessary routers and or repeaters to accomplish connection to the BAN via the panel-mounted
5 port provided.
6
7 All tubing, cable and individual wiring is to be permanently tagged, with numbers corresponding with
8 "Record Drawings", spares are to be labelled as "Spare".
9
10 Provide technician to work with air balancing contractor and/or provide balancing contractor with
11 necessary hardware to over-ride DDC controllers for air balancing.
12
13 Provide documentation to demonstrate that all points, input and output, have been checked out and verified
14 operational, note any points not operating properly with notation of reason.
15

16 **SEQUENCE OF OPERATION**

17 COOLING TOWERS

18 Systems consist of:

- 19 • Two (2) separate cooling towers
- 20 • Two (2) variable frequency drives, one for each cooling tower fan.
- 21 • Two (2) basin water filling valves, one for each cooling tower.
- 22 • Two (2) DDC water temperature sensors.
- 23
- 24

25 Provide all line and low voltage wiring for a complete operating system.

26 Cooling Tower Fan Control

27 The cooling tower fans shall modulate to maintain the condenser water setpoint.

28
29
30 When the condenser water supply temperature is above setpoint, start the lead cooling tower fan at
31 minimum speed. Stage on the lag fan at minimum speed to maintain setpoint. Once both cooling
32 tower fans are running at minimum speed, the speed signal to both the lead and lag fans shall be
33 the same and the fans shall modulate together to maintain the condenser water supply temperature.
34 The minimum runtime for each fan shall be 5 minutes (adj.). On fall in condenser water
35 temperature below setpoint the reverse shall occur.

36
37 The lead and lag designations shall be automatically rotated on a daily basis and the fan lead/lag
38 designations shall be displayed on the DDC operator workstation.

39
40 The cooling tower fan controls shall be capable of operating "stand-alone" (off condenser water
41 return temperature) if communication is lost to the controller.

42 Condenser Make-Up Water Control

43 Cooling tower make-up water is controlled by a Warrick probe system supplied with the cooling
44 tower.
45

46 CONDENSER WATER PUMPS (EXISTING)

47 There is no change to the existing condenser water pump control sequence.

48 CONDENSER WATER SETPOINT (EXISTING)

49
50 Modify the existing condenser water setpoint calculation to utilize the new condenser water supply and
51 return sensors installed at the penthouse level. The new existing sensors located in the subbasement of the
52 building will no longer be used for this calculation.
53

54 CONDENSER WATER BYPASS VALVE CONTROL (EXISTING)

55 There is no change to the sequence of control for the existing condenser water bypass valve.
56

1 **BASIN SWEEPING SYSTEM**

2 The basin sweeping system includes stand-alone controls.

3

4 **OWNER TRAINING**

5 Provide factory authorized representative and/or field personnel knowledgeable with the operations,
6 maintenance and troubleshooting of the system and/or components defined within this section for a
7 minimum period of 2 hours.

8

9 Provide two follow-up visits for troubleshooting and instruction, one six months after substantial
10 completion and the other at the end of the warranty period. Length of each visit to be not less than 2 hours
11 or the time necessary to provide required information and complete troubleshooting and inspection activity
12 for all controls.

13

14

END OF SECTION

Page Intentionally Left Blank

1 Plastics Pipe Institute, PPI

- 2 • PPI Handbook of Polyethylene Pipe – 2009 (2ndEdition)
- 3 • PPI Municipal Advisory Board (MAB) Generic Electrofusion Procedure for Field Joining of 12
- 4 Inch and Smaller Polyethylene (PE) Pipe
- 5 • PPI Material Handling Guide for HDPE Pipe and Fittings
- 6 • PPI TR-33 Generic Butt Fusion Joining Procedure for Polyethylene Gas Pipe
- 7 • PPI TR-34 Disinfection of Newly Constructed Polyethylene Water Mains
- 8 • PPI TR-38 Bolt Torque for Polyethylene Flanged Joints
- 9 • PPI TN-42 Recommended Minimum Training Guidelines for PE Pipe Butt Fusion Joining
- 10 Operators for Municipal and Industrial Projects

11
12 ASTM

- 13 • ASTM F 714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on
- 14 Outside Diameter
- 15 • ASTM F 905 Standard Practice for Qualification of Polyethylene Saddle-Fused Joints
- 16 • ASTM F 1055 Standard Specification for Electrofusion Type Polyethylene Fittings for Outside
- 17 Diameter Controlled Polyethylene and Crosslinked Polyethylene (PEX) Pipe and
- 18 • ASTM F 1290 Standard Practice for Electrofusion Joining Polyolefin Pipe and Fittings
- 19 • ASTM F 2164 Standard Practice for Field Leak Testing of Polyethylene (PE) Pressure Piping
- 20 Systems Using Hydrostatic Pressure
- 21 • ASTM F2206 Standard Specification for Fabricated Fittings of Butt-Fused Polyethylene (PE)
- 22 Plastic Pipe, Fittings, Sheet Stock, Plate Stock, or Block Stock
- 23 • ASTM D 2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers
- 24 and Other Gravity-Flow Applications
- 25 • ASTM F 2620 Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings
- 26 • ASTM D 2683 Standard Specification for Socket-Type Polyethylene Fittings for Outside
- 27 Diameter-Controlled Polyethylene Pipe and Tubing
- 28 • ASTM D 2737 Standard Specification for Polyethylene (PE) Plastic Tubing
- 29 • ASTM F 2880 Standard Specification for Lap-Joint Type Flange Adapters for Polyethylene
- 30 Pressure Pipe in Nominal Pipe Sizes 3/4 in. to 65 in.
- 31 • ASTM F 3124 Standard Practice for Data Recording the Procedure Used to Produce Heat Butt
- 32 Fusion Joints
- 33 • ASTM D 3261 Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for
- 34 Polyethylene (PE) Plastic Pipe and Tubing
- 35 • ASTM D 3035 Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on
- 36 Controlled Outside Diameter
- 37 • ASTM D 3350 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

38
39 **SHOP DRAWINGS**

40 Refer to division 1, General Conditions, Submittals.

41
42 Contractor shall submit schedule indicating the ASTM specification number of the pipe being proposed

43 along with its type and grade and sufficient information to indicate the type and rating of fittings for each

44 service.

45
46 **QUALITY ASSURANCE**

47 Any installed material not meeting the specification requirements or manufacturers installation

48 requirements must be replaced with material that meets these specifications without additional cost to the

49 Owner.

50
51 **DELIVERY, STORAGE, AND HANDLING**

52 Promptly inspect shipments to insure that the material is undamaged and complies with specifications.

53
54 Do not store materials directly on grade or roof. Protect pipe, tube, and fitting ends so they are not

1 damaged. Where end caps are provided or specified, take precautions so the caps remain in place. Protect
2 fittings, flanges, and unions by storage inside or by durable, waterproof, above ground packaging.

3
4 **INSTALLER QUALIFICATIONS**

5 Installing contractor to have certification by pipe manufacturer that they have been trained in the
6 installation of pipe and fittings. Provide documentation to A/E and County when requested.

7
8 The A/E or County reserves the right to test the work of any pipe fusion welds on the project, at the
9 Contractor's expense.

10
11 **PART 2 - PRODUCTS**

12
13 **PIPING SCHEDULE**

14

Application	Base Bid	Alternate Bid
Condenser Water (Supply/Return)	HDPE Pipe/Fittings	Schedule 80 PVC Pipe/Fittings
Make-Up Water (Exterior)	HDPE Pipe/Fittings	Schedule 80 PVC Pipe/Fittings
Make-Up Water (Interior)	HDPE Pipe/Fittings	Schedule 80 PVC Pipe/Fittings
Drain and Overfill (Exterior)	HDPE Pipe/Fittings	Schedule 80 PVC Pipe/Fittings
Drain and Overfill (Interior)	Schedule 80 PVC Pipe/Fittings	Schedule 80 PVC Pipe/Fittings
Equalizer	HDPE Pipe/Fittings	Schedule 80 PVC Pipe/Fittings
Basin Sweeping (Supply/Return)	HDPE Pipe/Fittings	Schedule 80 PVC Pipe/Fittings

15
16 **HDPE PIPE AND FITTINGS**

17 Pipe and fittings shall meet the requirements of AWWA C906.

18
19 Suitable for exterior applications, above grade, specific to this project.

20
21 Pipe shall be rated for use at a pressure class of 200 psi. The outside diameter of the pipe shall be based
22 upon the IPS or DIPS sizing system.

23
24 Butt Fusion Fittings - Fittings shall be made of HDPE material with a minimum material designation code
25 of PE3608 or higher. Butt Fusion Fittings shall meet the requirements of ASTM D3261. Molded and
26 fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All
27 fittings shall meet the requirements of AWWA C906.

28
29 Markings for molded fittings shall comply with the requirements of ASTM D 3261. Fabricated fittings
30 shall be marked in accordance with ASTM F 2206. Socket fittings shall meet ASTM D 2683.

31
32 Electrofusion Fittings - Fittings shall be made of HDPE material with a minimum material designation code
33 of PE 3608 or higher. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. Fittings
34 shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All electrofusion
35 fittings shall be suitable for use as pressure conduits, and have nominal burst values of four times the
36 Working Pressure Rating (WPR) of the fitting. Markings shall be according to ASTM F 1055.

37
38 Flanges and Mechanical Joint Adapters (MJ Adapters) – Flanges and Mechanical Joint Adapters shall have
39 a material designation code of PE3608 or higher. Flanged and Mechanical Joint Adapters can be made to
40 ASTM D 3261 or if machined, must meet the requirements of ASTM F 2206. Flanges and MJ Adapters
41 shall have a pressure rating equal to the pipe unless otherwise specified on the plans. Markings for molded
42 or machined flange adapters or MJ Adapters shall be per ASTM D 3261. Fabricated (including machined)
43 flange adapters shall be per ASTM F 2206.

44
45 Van-Stone style, metallic (including stainless steel), convoluted or flat-plate, back-up rings and bolt
46 materials shall follow the guidelines of Plastic Pipe Institute Technical Note # 38, and shall have the bolt-
47 holes and bolt-circles conforming to one of these standards: ASME B-16.5 Class 150, ASME B-16.47

1 Series A Class 150, ASME B-16.1 Class 125, or AWWA C207 Class 150 Series B, D, or E. The back-up
2 ring shall provide a long-term pressure rating equal to or greater than the pressure-class of the pipe with
3 which the flange adapter assembly will be used, and such pressure rating shall be marked on the back-up
4 ring. The back-up ring, bolts, and nuts shall be protected from corrosion by a system such as paint, coal-tar
5 epoxy, galvanization, polyether or polyester fusion bonded epoxy coatings, anodes, or cathodic protection,
6 as specified by the project engineer.

7
8 Service connections shall be electrofusion saddles with a brass or stainless steel threaded outlet,
9 electrofusion saddles, sidewall fusion branch saddles, tapping tees, or mechanical saddles.

10
11 For electrofusion saddles with threaded outlet the size of the outlet shall be one inch IPS unless a larger size
12 is shown on the plans. Electrofusion saddles shall be made from materials required in part B. Electrofusion
13 Fittings. For sidewall fusion saddles the size of the saddle shall be as indicated on the plans. The saddle can
14 be made in accordance to ASTM D 3261 or ASTM F 2206. After installation, approximately ¼” of the PE
15 pipe shall be visible beyond the saddle to confirm that proper surface preparation occurred. Saddle faces
16 that do not provided ¼ inch of area beyond the saddle are not acceptable. Tapping tees shall be made to
17 ASTM D3261 or D2683. Mechanical strap-on saddles can only be used where there use on PE pipe is
18 approved by the mechanical saddle manufacturer. The body of the saddle shall be stainless steel, epoxy
19 coated cast iron or brass. The gasket material and design must be acceptable for PE pipe. The outlet shall be
20 threaded for one inch IPS unless a larger size is shown on the plans. Mechanical strap-on saddles will be
21 installed per the manufacturer’s instructions.

22 23 **PVC PIPE AND FITTINGS**

24 Schedule 80 PVC pipe and fittings.

25
26 ASTM D1785 Schedule 80 pipe with ASTM D2467 fittings and ASTM D 264 joining compound. Include
27 primer in accordance with ADTM F 656.

28
29 PVC pipe to include UV-protectants and shall be rated for exterior applications.

30 31 **PART 3 - EXECUTION**

32 33 **PIPE INSTALLATION AND SUPPORT**

34 Run piping to allow complete drain down of system. Install manual air vents at all high points where air
35 may collect.

36
37 Provide all pipe supports, hangers, guides, shields, etc. in accordance with manufacturers recommendations
38 and placed at manufacturers recommended spacing intervals.

39 40 **HDPE JOINING METHODS**

41 **SADDLE FUSION:** Saddle fusion shall be done in accordance with ASTM F 2620 or TR-41 or the fitting
42 manufacturer’s recommendations and PPI TR-41. Saddle fusion joints shall be made by qualified fusion
43 technicians. Qualification of the fusion technician shall be demonstrated by evidence of fusion training
44 within the past year on the equipment to be utilized on this project. [Saddle fusion is used to fuse branch
45 saddles, tapping tees, and other HDPE constructs onto the wall of the main pipe] (ASTM F905).

46
47 **SOCKET FUSION:** Molded socket fusion fittings are only to be used for joining of HDPE pipe from 1/2
48 inch to 2” in size. Socket fusion shall be done in accordance with ASTM F 2620 or the fitting
49 manufacturer’s recommendations. Socket fusion is the process of fusing pipe to pipe, or pipe to fitting by
50 the use of a male and female end that are heated simultaneously, and pressed together so the outside wall of
51 the male end is fused to the inside wall of the female end. Qualification of the fusion technician shall be
52 demonstrated by evidence of socket fusion training within the past year on the equipment to be utilized on
53 this project. [Socket fusion is not widely used, and the specifier may decide to prohibit its use]

54
55 **ELECTROFUSION:** Electrofusion joining shall be done in accordance with the manufacturers
56 recommended procedure. Other sources of electrofusion joining information are ASTM F 1290 and PPI TN

1 34. The process of electrofusion requires an electric source , a transformer, commonly called an
2 electrofusion box that has wire leads, a method to read electronically (by laser)or otherwise input the
3 barcode of the fitting, and a fitting that is compatible with the type of electrofusion box used. The
4 electrofusion box must be capable of reading and storing the input parameters and the fusion results for
5 later download to a record file. Qualification of the fusion technician shall be demonstrated by evidence of
6 electrofusion training within the past year on the equipment to be utilized for this project.

7
8 **MECHANICAL:** Mechanical connection of HDPE to auxiliary equipment such as valves, pumps, and
9 fittings shall use mechanical joint adapters and other devices in conformance with the PPI Handbook of
10 Polyethylene Pipe, Chapter 9 and AWWA Manual of Practice M55, Chapter 6.

- 11
- 12 • Mechanical connections on small pipe under 3” are available to connect HDPE pipe to other
13 HDPE pipe, or a fittings, or to a transition to another material. The use of stab-fit style couplings is
14 allowed, along with the use of metallic couplings of brass and other materials. All mechanical and
15 compression fittings shall be recommended by the manufacturer for potable water use. When a
16 compression type or mechanical type of coupling is used, the use of a rigid tubular insert stiffener
17 inside the end of the pipe is recommended.
- 18 • Mechanical couplings that wrap around the pipe and act as saddles are made by several
19 manufacturers specifically for HDPE pipe. All such saddles, tapping saddles, couplings, clamps
20 etc. shall be recommended by the manufacturer as being designed for use with HDPE pipe at the
21 pressure class listed in this section.
- 22 • Unless specified by the fitting manufacturer, a restraint harness or concrete anchor is
23 recommended with mechanical couplings to prevent pullout.
- 24 • Mechanical coupling shall be made by qualified technicians. Qualification of the field technician
25 shall be demonstrated by evidence of mechanical coupling training within the past year. This
26 training shall be on the equipment and pipe components to be utilized for this project.

27 28 **PVC PIPE AND FITTINGS**

29 All exterior PVC piping shall have a 0.016 inch thick protective metal jacket with safety edge.

30
31 Lap seams a minimum of 2 inches. Secure with metal bands for end to end joints. Locate seams on bottom
32 for exterior applications. Seal laps with 1/8” bead of metal jacketing sealant to prevent water entry.

33 34 **ERECTION**

35 Carefully inspect all pipe, fittings, valves, equipment and accessories before installation. Any items that
36 are unsuitable, cracked or otherwise defective shall be rejected and removed from the job site immediately.
37 Excluding minor surface rust, piping that exhibits significant oxidation or corrosion will be rejected.

38
39 Exercise care at every stage of storage, handling, laying and erecting to prevent entry of foreign matter into
40 piping, fittings, valves, equipment and accessories. Do not erect or install any item that is not clean.

41
42 Remove all loose dirt, scale, oil, chips, burrs and other foreign material from the internal and external
43 surfaces of all pipe and piping components prior to assembly, including debris associated with cutting,
44 threading and welding.

45
46 During construction, until system is fully operational, keep all openings in piping and equipment closed
47 except when actual work is being performed on that item of the system. Use plugs, caps, blind flanges or
48 other items designed for this purpose.

49
50 Furnish and install all flanges, caps, bypasses, drains, valves, etc. required to facilitate flushing and
51 draining all piping.

52
53 Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a
54 window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute
55 piping as required to clear such interferences. In all cases, consult drawings and field verify area of
56 installation before procuring, fabricating or installing piping.

1 Provide anchors, expansion joints, swing joints and/or expansion loops so that piping may expand and
2 contract without damage to itself, equipment, or building.

3
4 Install drains throughout the systems to permit complete drainage.

5
6 Install all valves, control valves, and piping specialties, including items furnished by others, as specified
7 and/or detailed. Make connections to all equipment installed by others where that equipment requires the
8 piping services indicated in this section.

9
10 **PIPING SYSTEM LEAK TESTS**

11 Verify that the piping system being tested is fully connected to all components and that all equipment is
12 properly installed, wired, and ready for operation. If required for the additional pressure load under test,
13 provide temporary restraints at expansion joints or isolate them during the test. Verify that hangers can
14 withstand any additional weight load that may be imposed by the test.

15 Provide all piping, fittings, blind flanges, and equipment to perform the testing.

16
17
18 Conduct pressure test with 100 PSIG water for 8 hrs. If leaks are found, repair the area with new materials
19 and repeat the test.

20
21 Document all testing. A/E or County shall witness and sign off on all tests.

22
23 **PIPING SYSTEM FLUSHING**

24 All new piping shall be flushed to clean debris from system. Flush, drain and repeat as required until all
25 debris is cleaned from new piping.

26
27 Document all flushing. A/E or County shall witness and sign off on all flushing.

28
29
30

END OF SECTION

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56

SECTION 23 65 00
COOLING TOWERS

PART 1 - GENERAL

SCOPE

This section includes specifications for factory assembled cooling towers and accessories. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Reference Standards
- Quality Assurance
- Shop Drawings
- Operation and Maintenance Data
- Design Criteria
- Warranties

PART 2 - PRODUCTS

- Induced Draft Crossflow Cooling Tower
- Cooling Tower Basin Sweeping Cleaning System (Alternate Bid)

PART 3 - EXECUTION

- Installation
- Start-Up
- Training

RELATED WORK

- Section 23 05 13 - Common Motor Requirements for HVAC Equipment.
- Section 23 05 48 – Vibration Isolation
- Section 23 25 00 - HVAC Water Treatment
- Section 23 05 14 - Variable Frequency Drives

REFERENCE

Applicable provisions of Division 1 shall govern work under this Section.

REFERENCE STANDARDS

- ANSI/AFBMA 9 Load Ratings and Fatigue Life for Ball Bearings.
- ANSI/AFBMA 11 Load Ratings and Fatigue Life for Roller Bearings.
- ASTM E-84 Test Method for Surface Burning Characteristics of Building Materials.
- ASTM D-3299 Standard Specification for filament wound glass fiber reinforced thermoset resin chemical resistant tanks
- ASTM D-4097 Standard Specification for contact molded glass fiber reinforced thermoset resin chemical resistant tanks.
- CTI ATC-105 Cooling Tower Institute - Acceptance Test Code for Water Cooling Towers.

QUALITY ASSURANCE

Refer to Division 1, General Conditions, Equals and Substitutes.

SHOP DRAWINGS

Refer to Division 1, General Conditions, and Submittals.

1 Shop drawings shall include the following information:

- 2 • Cooling tower capacity and statement indicating that the capacity is CTI certified.
- 3 • Cooling tower water quality parameters for the proposed cooling tower.
- 4 • Suggested structural supports including dimensions, sizes and locations for mounting boltholes.
- 5 • Product data indicating dimensions, weights and point loading, accessories, required clearances,
- 6 electrical requirements and wiring diagrams and locations and size of field connections.
- 7 • Performance curve plotting leaving water temperature against wet bulb temperature.
- 8 • Manufacturer's installation instructions, operation data, start-up instructions, maintenance data,
- 9 parts lists, controls, accessories and maintenance data.
- 10 • Discharge and inlet sound data for each octave band under full load operating conditions.

11

12 **OPERATION AND MAINTENANCE DATA**

13 All operations and maintenance data shall comply with the submission and content requirements specified
14 under section GENERAL REQUIREMENTS.

15

16 **DESIGN CRITERIA**

17 Performance must be certified by the Cooling Tower Institute in accordance with CTI certification standard
18 STD-201.

19
20 Tower shall be capable of handling inlet water up to 120 degrees F.

21

22 **WARRANTIES**

23 Warranty cooling tower fans, shafts, bearings, gearbox, couplings, mechanical equipment support and
24 motor(s) for 5 years from startup.

25
26 Warranty the cold water basin for 5 years from start-up.

27
28 Warranty the remainder of the tower for 1 year from startup.

29
30 Warranty for the basin sweeper separator for 5 years from start-up.

31
32 Warranty the remaining basin sweeper components for 1 year from start-up.

33

34

35 **PART 2 - PRODUCTS**

36

37 **INDUCED DRAFT CROSSFLOW COOLING TOWERS**

38 Manufacturers: Baltimore Air Coil.

39
40 Construct framework of G235 galvanized steel angles and channels. Construct casing of FRP (fiberglass
41 reinforced polyester). The cooling tower must be suitable to resist wind loads up to 30 psf.

42
43 The hot water distribution basin shall be 304 stainless steel open gravity type with removable,
44 interchangeable plastic metering orifices to provide even water distribution over the full fill area by gravity
45 flow. Each tower cell shall have a single inlet connection and include flow balancing devices for each
46 distribution basin. Provide removable stainless steel hot water basin covers. Design the fan deck and hot
47 water basin covers for 50 psf live load or a 200 pound concentrated load.

48
49 Construct the fill material and drift eliminators of PVC with a maximum flame spread rating of 25 per
50 ASTM E84. The drift eliminators shall limit drift losses to not more than .005% of the design water flow
51 rate.

52
53 Construct the cold water basin of 304 stainless steel with all welded construction. Bottom shall slope
54 towards a depressed section with side outlet connection, side overflow connection and side drain

1 connection. Provide stainless steel strainer and anti-vortex hood. Basin to include connection for
2 equalizing pipe, basin sweeper outlet and basin sweeper inlet.

3
4 Cold water basin shall include factory piping for basin sweeping cleaning system. Piping and installation
5 shall be custom for the cooling tower basin.

6
7 Provide fiberglass reinforced polyester inlet louvers spaced to minimize water splash out.

8
9 Provide vertical discharge, axial flow fixed or adjustable pitch, prop fan with aluminum alloy blades,
10 welded G-235 galvanized steel or molded FRP fan cylinder, galvanized steel wire guard, and self-aligning
11 grease packed ball bearings designed for minimum L10 life of 40,000 hours. Provide extended grease lines
12 from each fan shaft bearing to the outside of the tower. Drive shall be belt drive with cast aluminum
13 sheaves or gear driven with right angle, oil lubricated, geared speed reducer.

14
15 Apply a zinc rich primer to all cut edges of all galvanized steel components prior to assembly.

16
17 Factory installed electronic make-up water assembly consisting of probe type electric water level control
18 package including stainless steel electrodes and make up water valve. Valve shall be ball type with
19 electronic actuator (valve and actuator to be manufactured by Belimo or approved equivalent).

20
21 Motor: Premium efficiency totally enclosed air over (TEAO) or totally enclosed fan cooled (TEFC) type
22 with special moisture protection, mounted on welded steel frame in fan deck. Refer also to Section
23 23 05 13 for additional requirements. Motor is to be suitable for use with a variable frequency drives.

24
25 Provide Hinged access doors at both sides of tower for access to all internal components.

26
27 Provide a walking surface on the top of the tower including a galvanized steel handrail with kneerail and
28 toeboard. Provide a ladder, attached to the tower, from 12" above the roof or ground to the top of the
29 tower. Include a galvanized steel safety cage around the ladder from 7'-0" above the roof or ground to the
30 top of the handrail on the fan deck. The walking surface, handrail and ladder assembly must comply with
31 OSHA guidelines.

32
33 Provide a permanent, factory installed, galvanized, internal service platform inside the tower air plenum to
34 provide service access to fan, drive and motor assembly. Include permanent ladder and railings.

35
36 **COOLING TOWER BASIN SWEEPING CLEANING SYSTEM (ALTERNATE BID)**

37 Manufacturer: Lakos or prior approved equal.

38
39 A complete package shall be supplied for the isolated recirculation and particle separation/filtration of the
40 fluid in the cooling tower basin/remote sump. Flow through the separator package shall be continuous,
41 without interruption for the periodic evacuation of separated solids.

42
43 Separator Package: Provide for initial pre-straining prior to pump suction, followed by direct pumping
44 through a specific centrifugal-action solids-from-liquid separator and immediate return of flow to basin
45 mounted piping. Separated solids shall be purged periodically with an automatic purge valve. Entire unit
46 shall be mounted on stainless steel, 3/16-inch (5 mm) minimum thickness, structural steel framework.

47
48 Pump Strainer: Cast-iron housing; manual-cleaning; 9/32-inch minimum mesh rating; stainless steel
49 basket.

50
51 Pump: End-suction, single stage; TEFC motor; cast iron housing; iron impeller; bronze shaft sleeve;
52 silicon carbide mechanical shaft seal; flooded suction required.

53
54 Separation Vessel: Centrifugal-action design, unishell construction with SA-36, SA-53B or equivalent
55 quality carbon steel, minimum thickness of .25 inches. Unit to incorporate tangential separation of solids.

1 Automatic Purge Valve: Provide electrically-actuated valve with timer control package for solids purge
2 from the separator's collection chamber. Valve body shall be stainless steel with stainless steel ball and
3 seat.

4
5 Electrical Control: IEC starter with overload module; HOA selector switch; NEMA-4x enclosure; re-
6 set/disconnect/trip switch. Provide 120 volt, single phase control voltage. Provide 208/3 motor
7 connection.

8 9 **PART 3 - EXECUTION**

10 11 **INSTALLATION**

12 Install in accordance with manufacturer's instructions maintaining all required clearances.

13
14 Install tower on the structure as shown on the plans. Coordinate the tower support requirements with the
15 structural support being provided. If a tower is provided that is significantly different than what is
16 indicated on the drawings, then the contractor is responsible for any and all additional costs to provide
17 and/or modify the structure support for the tower.

18
19 Connect all piping including condenser water supply and return, make-up water, overflow, equalizer, basin
20 sweeper inlet, basin sweeper outlet and drain piping as indicated on the drawings.

21
22 Provide vibration isolators for cooling tower and flexible connectors for pipe connections.

23
24 This contractor is responsible for revisions and/or additions to power wiring, starters, disconnects, breakers
25 and additional wiring necessary for any motor or motors that are different from what is scheduled.

26 27 **START-UP**

28 Inspect tower after installation and submit report prior to start-up, verifying installation is in accordance
29 with specifications and manufacturers recommendations.

30 31 **TRAINING**

32 Contractor to provide factory authorized representative and/or field personnel knowledgeable with the
33 operations, maintenance and troubleshooting of the system and/or components defined within this section
34 for a minimum period of 4 hours.

35
36 **END OF SECTION**