

RFB NO. 315040



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. 315040 STORAGE BUILDING HEATING & VENTILATING LAKE FARM PARK 4401 LIBBY ROAD MADISON, WISCONSIN

Due Date / Time: **TUESDAY, AUGUST 18, 2015 / 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:

MADISON MOORE, ENGINEERING INTERN
TELEPHONE NO.: 608/266-4592
CELL NO.: 608/220-9762
E-MAIL: MOORE.MADISON@COUNTYOFDANE.COM

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IMPORTANT NOTICE

The Pre-bid tour originally scheduled for August 7, 2015 at 10:30 a.m. has been **cancelled.**

The Lake Farm Storage building has not yet been erected. Information about the building can be obtained from the drawings included with this Request for Bid.

Please contact Madison Moore with any questions. 608/266-4592 moore.madison@countyofdane.com

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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, AUGUST 18, 2015

REQUEST FOR BIDS NO. 315040

STORAGE BUILDING HEATING & VENTILATING

LAKE FARM PARK

4401 LIBBY ROAD

MADISON, WISCONSIN

Dane County is inviting Bids for construction service at the Lake Farm Park Storage Building. Contractor shall provide in-floor tubing, control and power wiring, and heating and ventilation equipment. 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, August 4, 2015** by downloading it from countyofdane.com/pwbids. Please contact Madison Moore, Engineering Intern, at 608/266-4592 or moore.madison@countyofdane.com, or our office at 608/266-4018, for any questions or additional information.

All Bidders must be a registered vendor with Dane County & pay an annual registration fee & must be pre-qualified as a Best Value Contractor before award of Contract. Complete Vendor Registration Form at danepurchasing.com/registration 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 August 7, 2015 at 10:30 a.m. at the Lake Farm Storage Building. Bidders are strongly encouraged to attend this tour.~~

PUBLISH: JULY 31 & AUGUST 7, 2015 - WISCONSIN STATE JOURNAL
JULY 31 & AUGUST 7, 2015 - THE DAILY REPORTER

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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

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1. GENERAL

- A. Before submitting Bid, bidder shall thoroughly examine all Construction Documents. Successful Bidder shall be required to provide all the Work that is shown on Drawings, set forth in Specifications, or reasonably implied as necessary to complete Contract for this project.
- B. Bidder shall visit site to become acquainted with adjacent areas, means of approach to site, conditions of actual site and facilities for delivering, storing, placing, and handling of materials and equipment.
- C. Pre-bid meeting has been canceled. Please contact Madison Moore, 608/266-4592 moore.madison@countyofdane.com with any questions.
- 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) 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 Engineer within three (3) days after Bid Due Date. Criteria which will be considered in determining satisfactory completion of projects by bidder will include:
 - a. Completed contracts in accordance with drawings and specifications.
 - b. Diligently pursued execution of work and completed contracts according to established time schedule unless Owner grants extensions.
 - c. Fulfilled guarantee requirements of construction documents.
 - d. Is not presently on ineligible list maintained by County's Department of Administration for noncompliance with equal employment opportunities and affirmative action requirements.
 - e. Authorized to conduct business in Wisconsin. By submitting Bid, bidder warrants that it has: complied with all necessary requirements to do business in State of Wisconsin; that persons executing contract on its behalf are authorized to do so; and, if corporation, that name and address of bidder's registered agent are as set forth in Contract. Bidder shall notify Owner immediately, in writing, of any change in its registered agent, their address, and bidder's legal status. For partnership, term "registered agent" shall mean general partner.

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

5. BID GUARANTEE

- A. Bank certified check, cashier's check or Bid Bond, payable to County in amount not less than five percent (5%) of maximum bid, shall accompany each Bid as guarantee that if Bid is accepted, Bidder will execute and return proposed Contract and Performance and Payment Bonds within ten (10) 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) 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) 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 twenty-four (24) hours after 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 twenty-four (24) hours 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 will solicit bids from ESB listing provided by Dane County.
- G. **ESB Certification.** All contractors, subcontractors and suppliers seeking ESB certification must complete and submit Emerging Small Business Certification Application to Dane County Contract Compliance Program.

H. **Certification Statement.** If ESB firm has not been certified by County as ESB prior to submittal of this Bid, ESB Report cannot be used to fulfill ESB goal for this project unless firm provides "Form D - Certification Statement". Certification statement must be completed and signed by ESB firm.

I. **Questions.** Questions concerning Emerging Small Business provisions shall be directed to:

Dane County Contract Compliance Officer
City-County Building, Room 421
210 Martin Luther King, Jr. Blvd.
Madison, WI 53703
608/266-5623

J. **Substituting ESBs.** In event of any significant changes in subcontract arrangements or if need arises to substitute ESBs, Bidder shall report such proposed changes to Contract Compliance Officer to making any official changes and request authorization to substitute ESB firm. Bidder further agrees to make every possible effort to replace ESB firm with another qualified ESB firm.

K. **Good Faith Efforts.** Good faith efforts can be demonstrated by meeting all of these obligations:

1. Selecting portions of the Work to be performed by ESBs in order to increase likelihood of meeting ESB goal including, where appropriate, breaking down Contract into smaller units to facilitate ESB participation.
2. Advertising in general circulation, trade associations and women / minority focus media concerning subcontracting opportunities.
3. Providing written notices to reasonable number of specific ESBs that their interest in Contract was being solicited in sufficient time to allow ESBs to participate effectively.
4. Following up on initial solicitations of interest by contacting ESBs within five (5) working days prior to Bid 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. Bidder shall include in Bid, all Sales, Consumer, Use and other similar taxes required by law.
- B. In accordance with Wisconsin Statute 71.80(16)(a), successful nonresident bidder, whether incorporated or not, and not otherwise regularly engaged in business in this state, shall file surety bond with State of Wisconsin Department of Revenue payable to Department of Revenue, to guarantee payment of income taxes, required unemployment compensation contributions, sales and use taxes and income taxes withheld from wages of employees, together with any penalties and interest thereon. Amount of bond shall be three percent (3%) of Contract or subcontract price on all contracts of \$50,000 or more.

13. SUBMISSION OF BIDS

- A. All Bids shall be submitted on standard Bid Form bound herein and only Bids that are made on this Bid Form will be considered. Entire Bid Form and other supporting documents, if any, shall be removed or copied from Construction Documents, filled out, and submitted in manner specified hereinafter. Submit completed Bid Bond with Bid as well.

- B. No bids for any subdivision or any sub-classification of this Work, except as indicated, will be accepted. Any conditional Bid, amendment to Bid Form or appended item thereto, or inclusion of any correspondence, written or printed matter, or details of any nature other than that specifically called for, which would alter any essential provision of Construction Documents, or require consideration of unsolicited material or data in determining award of Contract, will disqualify Bid. Telecommunication alterations to Bid will not be accepted.
- C. Bidders must submit single Bid for all the Work.
- D. Bid amounts shall be inserted in words and in figures in spaces provided on Bid Form; in case of conflict, written word amounts will govern.
- E. Addenda issued after Bid Letting shall become part of Construction Documents. Bidders shall acknowledge receipt of such addenda in appropriate space provided on Bid Form. Bid 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. Alternate Bid No. 1: Provide deduct price for removing package HV-1, the installation of in-floor heat tubing from the scope of this project.

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 24 hours after Bid Due Date.

PROJECT NAME: _____

BID NO.: _____ BID DUE DATE: _____

BIDDER INFORMATION

COMPANY NAME: _____

ADDRESS: _____

TELEPHONE NO.: _____

CONTACT PERSON: _____

EMAIL ADDRESS: _____

FORM B

Page ___ of ___

DANE COUNTY

(Copy this Form as necessary to provide complete information)

EMERGING SMALL BUSINESS REPORT - INVOLVEMENT

COMPANY NAME: _____

PROJECT NAME: _____

BID NO.: _____ BID DUE DATE: _____

ESB NAME: _____

CONTACT PERSON: _____

ADDRESS: _____

PHONE NO & EMAIL.: _____

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

ESB NAME: _____

CONTACT PERSON: _____

ADDRESS: _____

PHONE NO & EMAIL.: _____

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

FORM C

Page ___ of ___

**DANE COUNTY
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)	_____	_____	_____	_____	_____	_____

FORM D

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

I, _____, _____ of
Name Title

_____ certify to best of my knowledge and
Company

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

Bidder's Signature

Date

Name of Bidding Firm: _____

BID FORM

BID NO. 315040

**PROJECT: STORAGE BUILDING HEATING & VENTILATING
LAKE FARM PARK**

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

BASE BID - LUMP SUM:

Dane County is inviting Bids for construction services at the Lake Farm Park storage building. Contractor shall provide in-floor tubing, control and power wiring, and heating and ventilation equipment. 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:

Provide deduct price for removing package HV-1, the installation of in-floor heat tubing from the scope of this project.

_____ 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 Public Works must have this project completed by November 5, 2015. Assuming this Work can be started by September 15, 2015, 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) 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

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

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FAIR LABOR PRACTICES CERTIFICATION

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

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

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

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

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

Officer or Authorized Agent Signature Date

Printed or Typed Name and Title

Printed or Typed Business Name

NOTE: You can find information regarding the violations described above at: www.nlr.gov and werc.wi.gov.

For reference, Dane County Ordinance 25.11(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.

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COUNTY OF DANE

PUBLIC WORKS CONSTRUCTION CONTRACT

Contract No. _____ Bid No. 315040

Authority: 2015 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 Storage Building Heating & Ventilating at Lake Farm Park. ("the Project"); and

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

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

1. CONTRACTOR agrees to construct, for the price of \$_____ the Project and at the CONTRACTOR'S own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence labor, insurance, and other accessories and services necessary to complete the Project in accordance with the conditions and prices stated in the Bid Form, General Conditions of Contract, the drawings which include all maps, plats, plans, and other drawings and printed or written explanatory matter thereof, and the specifications therefore as prepared by _____ (hereinafter referred to as "the Architect / Engineer"), and as enumerated in the Project Manual Table of Contents, all of which are made a part hereof and collectively evidence and constitute the Contract.
2. COUNTY agrees to pay the CONTRACTOR in current funds for the performance of the Contract subject to additions and deductions, as provided in the General Conditions of Contract, and to make payments on account thereof as provided in Article entitled, "Payments to Contractor" of the General Conditions of Contract.
3. During the term of this Contract, CONTRACTOR agrees to take affirmative action to ensure equal employment opportunities. The CONTRACTOR agrees in accordance with Wisconsin Statute 111.321 and Chapter 19 of the Dane County Code of Ordinances not to discriminate on the basis of age, race, ethnicity, religion, color, gender, disability, marital status, sexual orientation, national origin, cultural differences, ancestry, physical appearance, arrest record or conviction record, military participation or membership in the national guard, state defense force or any other reserve component of the military forces of the United States, or political beliefs. Such equal opportunity shall include, but not be limited to, the following: employment,

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

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

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

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

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

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

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

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

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

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

* * * * *

FOR CONTRACTOR:

Signature Date

Printed or Typed Name and Title

Signature Date

Printed or Typed Name and Title

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

* * * * *

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

FOR COUNTY:

Joseph T. Parisi, County Executive Date

Scott McDonell, County Clerk Date

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THE AMERICAN INSTITUTE OF ARCHITECTS



AIA Document A310

Bid Bond

Bond No.

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

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

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

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

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

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

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

Signed and sealed this day of , 20 .

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

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THE AMERICAN INSTITUTE OF ARCHITECTS



Bond No. _____

AIA Document A312

Performance Bond

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

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

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

BOND

Date (Not earlier than Construction Contract Date):

Amount: \$

Modifications to this Bond:

None

See Page 3

CONTRACTOR AS PRINCIPAL
COMPANY: (Corporate Seal)

SURETY COMPANY:
(Corporate Seal)

Signature: _____
Name and Title:

Signature: _____
Name and Title:

Attorney-in-Fact

(Any additional signatures appear on page 3)

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

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

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

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

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

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

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

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

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

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

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

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

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

1. After investigation, determine the amount for

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

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

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

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

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

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

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

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

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

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

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

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

12 DEFINITIONS

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

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

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

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

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

MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

SAMPLE

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

CONTRACTOR AS PRINCIPAL
Company: (Corporate Seal)

SURETY
Company: (Corporate Seal)

Signature: _____
Name and Title:
Address:

Signature: _____
Name and Title:
Address:

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THE AMERICAN INSTITUTE OF ARCHITECTS



Bond No. _____

AIA Document A312

Payment Bond

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

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

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

BOND

Date (Not earlier than Construction Contract Date):

Amount: \$

Modifications to this Bond:

None

See Page 6

CONTRACTOR AS PRINCIPAL
COMPANY: (Corporate Seal)

SURETY COMPANY:
(Corporate Seal)

Signature: _____
Name and Title:

Signature: _____
Name and Title:
Attorney-in-Fact

(Any additional signatures appear on page 6)

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

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

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

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

15. DEFINITIONS

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

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

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

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

MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

SAMPLE

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

CONTRACTOR AS PRINCIPAL
Company: (Corporate Seal)

SURETY
Company: (Corporate Seal)

Signature: _____
Name and Title:
Address:

Signature: _____
Name and Title:
Address:

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EQUAL BENEFITS COMPLIANCE PAYMENT CERTIFICATION

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.

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GENERAL CONDITIONS OF CONTRACT

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1. CONSTRUCTION DOCUMENTS

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

2. DEFINITIONS

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

3. ADDITIONAL INSTRUCTIONS AND DRAWINGS

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

4. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

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

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

5. CUTTING AND PATCHING

- A. Contractor shall be responsible for all cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

- B. Contractor shall not damage or endanger portion of the Work or fully or partially completed construction of County or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. Contractor shall not cut or otherwise alter such construction by County or separate contractor except with written consent of County and of such separate contractor; such consent shall not be unreasonably withheld. Contractor shall not withhold unreasonably from County or separate contractor, Contractor's consent to cutting or otherwise altering the Work.

6. CLEANING UP

- A. Contractor shall keep premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under Contract. Contractor shall remove from and about the Work waste materials, rubbish, Contractor's tools, construction equipment, machinery, and surplus materials at completion of the Work. Contractor shall maintain streets and sidewalks around the Work site in clean condition. Contractor shall remove all spillage and prevent tracking of spillage arising from performance of the Work, into, out of, and within the Work site. Contractor shall establish regular maintenance program of sweeping, vacuuming and / or hosing to minimize accumulation of dirt and dust upon such areas.
- B. If Contractor fails to clean up as directed in Construction Documents, County may do so and shall charge Contractor cost thereof.
- C. Contractor shall be responsible for broken windows and glass, and at completion of the Work shall replace such damaged or broken windows and glass. After replacing damaged or broken windows and glass, Contractor shall remove all labels, wash and polish both sides of all windows and glass.
- D. In addition to general cleaning (sweeping, vacuuming and / or hosing, as is appropriate to work surface), Contractor shall perform following final cleaning for all trades at completion of the Work:
 - 1. Remove temporary protections;
 - 2. Remove marks, stains, fingerprints and other soil or dirt from painted, decorated and finished woodwork and wall surfaces;
 - 3. Remove spots, plaster, soil and paint from ceramic tile, marble and other finished materials, and wash or wipe clean;
 - 4. Clean fixtures, cabinet work and equipment, removing stains, paint, dirt and dust, and leave same in undamaged, new condition;
 - 5. Clean aluminum in accordance with recommendations of manufacturer; and
 - 6. Clean resilient floors thoroughly with well-rinsed mop containing only enough moisture to clean off any surface dirt or dust and buff dry by machine to bring surfaces to sheen.

7. USE OF SITE

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

8. MATERIALS AND WORKMANSHIP

- A. Contractor shall perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, necessary to complete the Work required by this Contract, within time specified, in accordance with provisions of Construction Documents.
- B. All equipment and materials incorporated in the Work covered by this Contract are to be new; use recycled and / or recovered materials to extent that such use is technically and economically feasible. Recovered materials are products recovered from solid waste in form identical to original form for use that is same as, or similar to original use. Recycled materials are products manufactured from solid waste.
- C. If requested, Contractor shall furnish satisfactory evidence as to kind and quality of construction materials proposed or used. Contractor shall furnish to Architect / Engineer, for approval, manufacturer name and model, performance capacities and other pertinent information of machinery, mechanical, electrical or other types of equipment, which Contractor plans to install.
- D. If not otherwise provided, materials and labor called for in this Contract shall be provided and performed in accordance with established practice and standards recognized by Architects, Engineers, Department, and construction industry.
- E. Reference to “Standard” specifications of any association or manufacturer, or codes of County authorities, intends most recent printed edition or catalog in effect on date that corresponds with date of Construction Documents.
- F. Whenever reference is made in Specifications that work shall be “performed”, “applied”, in accordance with “manufacturer’s directions or instructions”, Contractor to whom those instructions are directed shall furnish three (3) printed copies of such instructions to Architect / Engineer before execution of the Work.

9. CONTRACTOR’S TITLE TO MATERIALS

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

10. “OR EQUAL” CLAUSE

- A. Whenever equipment or materials are identified on Drawings or in Specifications by reference to manufacturer’s or vendor’s name, trade name, catalog number, and other identifying information, it is intended to establish standards; and any equipment or material of other manufacturers and vendors which will perform adequately duties imposed by general design will be considered equally accepted provided equipment or material so proposed is, in opinion of Architect / Engineer, of equal substance and function. Architect / Engineer and Department shall provide written approval before Contractor may purchase or install it.
- B. Equipment or materials of manufacturers, other than those named, may be used only upon following conditions:
 - 1. That, in opinion of Architect / Engineer and Department, proposed material or equipment item is fully equal or superior (in design, materials, construction, workmanship,

- performance, finish, etc.) to named item. No compromise in quality level, however small, is acceptable.
2. That, in substituting materials or equipment, Contractor assumes responsibility for any changes in system or for modifications required in adjacent or related work to accommodate such substitution despite Architect / Engineer's and Department's approval, and all costs growing out of approval of "or equal" items shall be responsibility of Contractor. No extra costs resulting from such approval shall become responsibility of Department, Architect / Engineer or any other separate Contractor.
 3. It shall be understood that use of materials or equipment other than those specified, or approved equal by Architect / Engineer and Department, shall constitute violation of Contract, and that Architect / Engineer and Department shall have right to require removal of such materials or equipment and their replacement with specified materials or equipment at Contractor's expense.
 4. Product and manufacturer named first in Specifications or on information shown on Drawings is basis of selection of manufactured items and equipment, particularly mechanical equipment. In using other than first named products or manufacturers, including those specified as additionally approved or acceptable, Contractor assumes responsibility for any changes in system and for modifications in any work required to accommodate them. Architect / Engineer's approval of such additionally acceptable products or manufacturers, either in Specifications or in Addendum, does not relieve Contractor from obligation to coordinate such optional products with other Contractors, whose work may be affected by them, and to pay all additional costs resulting from their inclusion into the Work. Contractor's liability shall include payment of Architect / Engineer's fees for any additional services made necessary by or directly connected to such product changes. No extra costs resulting from such changes shall become responsibility of Department, Architect / Engineer or any other separate Contractor.
- C. No request for approval of "or equal" materials will be entertained except from Contractor. Identify any request for substitution as substitution on Contractor's letter of transmittal and give reasons for substitution. Department may in its sole discretion allow substitutions of materials.

11. PATENTS AND ROYALTIES

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

12. SURVEYS, PERMITS, REGULATIONS AND TAXES

- A. Department will furnish to Contractor all site, topography and property surveys necessary for execution of the Work.
- B. Contractor shall procure all permits, licenses and approvals necessary for execution of this Contract.

- C. Contractor shall give all notices and comply with all State of Wisconsin, Federal and local laws, codes, rules and regulations relating to performance of the Work, protection of adjacent property, and maintenance of passageways, guard fences or other protective facilities.
- D. Contractor shall pay all Sales, Consumer, Use and other similar taxes required by law.
- E. Contractor shall promptly notify Architect / Engineer of any variances of Drawings or Specifications with that of any State of Wisconsin, federal or local law, code, rule or regulation. Upon such notification, Architect / Engineer will require correction of variance to comply with applicable law, code, rule or regulation at no additional cost to Contractor.
- F. Work under this Contract shall comply with all applicable State of Wisconsin, Federal and local laws, codes and regulations.
- G. Contractor shall pay charges for water, sewer and other utility connections made by municipalities where required by Specifications.

13. CONTRACTOR'S OBLIGATIONS AND SUPERINTENDENCE

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

14. WEATHER CONDITIONS

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

15. PROTECTION OF WORK AND PROPERTY

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

16. INSPECTION AND TESTING OF MATERIALS

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

17. REPORTS, RECORDS AND DATA

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

18. CHANGES IN THE WORK

- A. Make no changes, except in cases of emergency, in the Work covered by approved Construction Documents without having prior written approval of Department. Charges or credits for the Work covered by approved change shall be determined by one of these methods:
1. Unit bid prices previously approved.
 2. Agreed lump sum based on actual cost of:
 - a) Labor, including foremen, and all fringe benefits that are associated with their wages.
 - b) Materials entering permanently into the Work.
 - c) Ownership or rental cost of construction tools and equipment during time of use on extra work.
 - d) Power and consumable supplies for operation of power equipment.
 - e) Workmen's Compensation Insurance, Contractor's Public Liability and Property Damage Insurance, and Comprehensive Automobile Liability Insurance.
 - f) Social Security and old age and unemployment contributions.
 - g) Add to cost under (2), fixed fee to be agreed upon, but not to exceed fifteen percent (15%) of actual cost of work performed with their own labor force. Fee shall be compensation to cover cost of supervision, overhead, bond, profit and any other general expense.
 - h) On that portion of the Work under (2) done under subcontract, Contractor may include not over seven and one-half percent (7½%) for supervision, overhead, bond, profit and any other general expense.
 - i) Department may require correct amount of costs with supporting vouchers; Contractor shall keep and present in such form as directed.
 3. Cost-plus work, with not-to-exceed dollar limit, based on actual cost of:
 - a) Labor, including foremen, and all fringe benefits that are associated with their wages.
 - b) Materials entering permanently into the Work.
 - c) Ownership or rental cost of construction tools and equipment during time of use on extra work. Rental cost cannot exceed fifty percent (50%) replacement value of rented equipment.
 - d) Power and consumable supplies for operation of power equipment.
 - e) Workmen's Compensation Insurance, Contractor's Public Liability and Property Damage Insurance, and Comprehensive Automobile Liability Insurance.
 - f) Social Security and old age and unemployment contributions.
 - g) To cost under (3), there shall be added fixed fee to be agreed upon but not to exceed fifteen percent (15%) of actual cost of work performed with their own labor force. Fee shall be compensation to cover cost of supervision, overhead, bond, profit, and any other general expense.
 - h) On that portion of the Work under (3) done under subcontract, Contractor may include not over seven and one-half percent (7½%) for supervision, overhead, bond, profit, and any other general expense.
 - i) Contractor shall keep and present, in such form as directed, correct amount of cost together with such supporting vouchers as may be required by Department.

- B. If Contractor claims that by any instructions given by Architect / Engineer, Department, by drawings or otherwise, regarding performance of the Work or furnishing of material under Contract, involves extra cost, Contractor shall give Department written notice of cost thereof within two (2) weeks after receipt of such instructions and in any event before proceeding to execute work, unless delay in executing work would endanger life or property.
- C. No claim for extra work or cost shall be allowed unless it was done in pursuance of written Change Order from Architect / Engineer and approved by Department, as previously mentioned, and claim presented with payment request submitted after changed or extra work is completed.
- D. Negotiation of cost for change in the Work shall not be cause for Contractor to delay prosecution of the Work if Contractor has been authorized in writing by Public Works Project Manager to proceed.

19. EXTRAS

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

20. TIME FOR COMPLETION

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

21. CORRECTION OF WORK

- A. All work, all materials whether incorporated in the Work or not, and all processes of manufacture shall at all times and places be subject to inspection of Architect / Engineer and Public Works Project Manager who shall be judge of quality and suitability of the Work, materials, and processes of manufacture for purposes for which they are used. Should they fail to meet Architect / Engineer's and Public Works Project Manager's approval they shall be reconstructed, made good, replaced or corrected, by Contractor at Contractor's expense. Immediately remove all rejected material from site.
- B. If Contractor defaults or neglects to carry out the Work in accordance with Construction Documents or fails to perform any provision of Contract, Department may, after ten (10) 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) days after serving of such notice upon Contractor, such violation or delay shall cease and satisfactory arrangement or correction be made, Contract shall, upon expiration of said ten (10) days, cease and terminate.
- B. In event of any such termination, County shall immediately serve notice thereof upon Surety and Contractor, and Surety shall have right to take over and perform Contract subject to County's approval; provided, however, that if Surety does not commence performance thereof within ten (10) days from date of mailing to such Surety of notice of termination, County may take over the Work and prosecute same to completion by contract, or by force account, at expense of Contractor; Contractor and Surety shall be liable to County for any excess cost occasioned County thereby, and in such event County may take possession of and utilize in completing the Work, such materials and equipment as may be on the Work site and therefore necessary.

24. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

- A. Contractor shall be responsible for Construction Schedule and coordination. Immediately after execution and delivery of Contract and before making first payment, Contractor shall notify all subcontractors to furnish all required information to develop Construction Schedule. Contractor and all subcontractors associated with the Work shall furnish following information from each Division of Specifications:
 - 1. List of construction activities;
 - 2. Start, finish and time required for completion of each activity;
 - 3. Sequential relationships between activities;
 - 4. Identify all long lead-time items, key events, meetings or activities such as required submittals, fabrication and delivery, procurement of materials, installation and testing;
 - 5. Weekly definition of extent of work and areas of activity for each trade or Subcontract; and
 - 6. Other information as determined by Public Works Project 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) days from receipt of payment.

- F. Payments by County will be due within forty-five (45) 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) 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) 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) 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) 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) 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) days written notice has been received by Risk Manager."

B. Builder's Risk:

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

C. Indemnification / Hold Harmless:

1. Contractor shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from performance of the Work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom, and is caused in whole or in part by any act or omission of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by part indemnified hereunder.
2. In any and all claims against Dane County, its boards, commissions, agencies, officers, employees and representatives or by any employee of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, indemnification obligation under this Contract shall not be limited in any way by any limitation on amount or type of damages, compensation or benefits payable by or for Contractor or any subcontractor under worker's compensation acts, disability benefits or other employee benefit acts.
3. Obligations of Contractor under this Contract shall not extend to liability of 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.

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State of Wisconsin Department of Workforce Development Equal Rights Division	DEPARTMENTAL ORDER
ISSUE DATE: 8/3/2015	
PROJECT:	
STORAGE BUILDING HEATING & VENTILATING MADISON TOWN, DANE COUNTY, WI Determination No. 201502312 [Owner Project No. 315040]	
PROJECT OWNER:	REQUESTER:
ERIC URTES, PROJECT MANAGER DANE COUNTY PUBLIC WORKS 1919 ALLIANT ENERGY CENTER WAY MADISON, WI 53713	ERIC URTES, PROJECT MANAGER DANE COUNTY PUBLIC WORKS 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.
<p>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.</p> <p>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.</p> <p>Enclosures</p>	
<p>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.</p> <p>ISSUED BY:</p> <p style="text-align: center;"> Equal Rights Division Labor Standards Bureau Construction Wage Standards Section P.O. Box 8928, Madison, WI 53708-8928 (608)266-6861 </p> <p style="text-align: center;"> Web Site: http://dwd.wisconsin.gov/er/ </p>	

PREVAILING WAGE RATE DETERMINATION

Issued by the State of Wisconsin
 Department of Workforce Development
 Pursuant to s. 66.0903, Wis. Stats.
 Issued On: 8/3/2015

DETERMINATION NUMBER: 201502312

EXPIRATION DATE: Prime Contracts MUST Be Awarded or Negotiated On Or Before 1/30/2016. If NOT, You MUST Reapply.

PROJECT NAME: STORAGE BUILDING HEATING & VENTILATING
 PROJECT NO: 315040

PROJECT LOCATION: MADISON TOWN, DANE COUNTY, WI

CONTRACTING AGENCY: DANE COUNTY PUBLIC WORKS

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:	<p>Time and one-half must be paid for all hours worked:</p> <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. <p>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.</p> <p>A DOT Premium (discussed below) may supersede this time and one-half requirement.</p>
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.

RESIDENTIAL OR AGRICULTURAL CONSTRUCTION

Includes single family houses or apartment buildings of no more than four (4) stories in height and all buildings, structures or facilities that are primarily used for agricultural or farming purposes, excluding commercial buildings. For classification purposes, the exterior height of a residential building, in terms of stories, is the primary consideration. All incidental items such as site work, driveways, parking lots, private sidewalks, private septic systems or sewer and water laterals connected to a public system and swimming pools are included within this definition. Residential buildings of five (5) stories and above are NOT included within this definition.

SKILLED TRADES

<u>CODE</u>	<u>TRADE OR OCCUPATION</u>	<u>HOURLY BASIC RATE OF PAY</u>	<u>HOURLY FRINGE BENEFITS</u>	<u>TOTAL</u>
		\$	\$	\$
101	Acoustic Ceiling Tile Installer	33.07	16.07	49.14
102	Boilermaker	32.05	28.04	60.09
103	Bricklayer, Blocklayer or Stonemason Future Increase(s): Add \$1.40 on 06/01/2015; 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.	32.82	18.66	51.48
104	Cabinet Installer	34.42	0.00	34.42
105	Carpenter	31.40	2.01	33.41
106	Carpet Layer or Soft Floor Coverer	30.00	0.00	30.00
107	Cement Finisher	24.08	0.00	24.08
108	Drywall Taper or Finisher	8.50	0.00	8.50
109	Electrician	20.00	6.62	26.62
110	Elevator Constructor	23.26	0.00	23.26
111	Fence Erector	16.00	3.76	19.76
112	Fire Sprinkler Fitter	39.00	18.00	57.00
113	Glazier Future Increase(s): Add \$.75/hr eff. 06/01/2015; Add \$.90/hr eff. 06/01/2016	37.07	14.42	51.49
114	Heat or Frost Insulator	33.43	25.81	59.24
115	Insulator (Batt or Blown)	23.00	10.55	33.55
116	Ironworker	31.50	20.01	51.51
117	Lather	31.40	2.01	33.41
119	Marble Finisher	16.25	2.32	18.57
120	Marble Mason	32.09	18.04	50.13

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
121	Metal Building Erector	18.00	5.88	23.88
123	Overhead Door Installer	16.65	1.03	17.68
124	Painter	25.75	8.94	34.69
125	Pavement Marking Operator	18.75	2.47	21.22
129	Plasterer	25.00	10.45	35.45
130	Plumber	30.00	10.44	40.44
132	Refrigeration Mechanic	17.00	13.56	30.56
133	Roofer or Waterproofer	15.00	1.37	16.37
134	Sheet Metal Worker	22.54	5.20	27.74
135	Steamfitter	23.62	16.12	39.74
137	Teledata Technician or Installer	18.00	28.48	46.48
138	Temperature Control Installer	22.00	1.62	23.62
139	Terrazzo Finisher	16.25	2.32	18.57
140	Terrazzo Mechanic	30.71	16.52	47.23
141	Tile Finisher	23.85	17.18	41.03
142	Tile Setter Future Increase(s): Add \$1.40/hr on 6/01/2015; Add \$1.45/hr on 6/06/2016.	31.55	18.26	49.81
143	Tuckpointer, Caulker or Cleaner	14.00	8.75	22.75
146	Well Driller or Pump Installer	12.75	9.50	22.25
147	Siding Installer	17.25	0.00	17.25

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	16.50	0.00	16.50
203	Three or More Axle	18.00	2.44	20.44
205	Pavement Marking Vehicle	20.85	11.02	31.87
207	Truck Mechanic	18.00	2.44	20.44

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	24.21	8.02	32.23
302	Asbestos Abatement Worker	16.50	8.21	24.71
303	Landscaper	12.00	0.00	12.00
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	18.33	13.65	31.98
315	Final Construction Clean-Up Worker	10.00	3.47	13.47

HEAVY EQUIPMENT OPERATORS
RESIDENTIAL OR AGRICULTURAL CONSTRUCTION

Fringe Benefits Must Be Paid On <u>All</u> Hours Worked		HOURLY BASIC RATE OF PAY	HOURLY FRINGE BENEFITS	TOTAL
CODE	TRADE OR OCCUPATION	\$	\$	\$
557	Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Backhoe (Track Type); 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 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; Crane, Shovel, Dragline, Clamshells; Forestry Equipment, Timberco, Tree Shear, Tub Grinder, Processor; 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; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); 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); Winches & A-Frames. Future Increase(s): Add \$1.60/hr on 6/2/2015; Add \$1.60/hr on 6/3/2016.	34.22	19.78	54.00

558	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Backfiller; Belting, Burlap, Texturing Machine; Boiler (Temporary Heat); Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Farm or Industrial Type Tractor; Forklift; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Jeep Digger; Lift Slab Machine; Mulcher; Oiler; Post Hole Digger or Driver; Power Subgrader; Pump (3 Inch or Over) or Well Points; Robotic Tool Carrier (With or Without Attachments); Rock, Stone Breaker; Roller (Rubber Tire, 5 Tons or Under); Screed (Milling Machine); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Stump Chipper; Telehandler; Vibratory Hammer or Extractor, Power Pack.	36.72	21.15	57.87
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Future Increase(s):

Add \$1.25/hr on 6/1/2015; 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://www.dot.wi.gov/business/civilrights/laborwages/pwc.htm>.

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

Department of Workforce Development
 Equal Rights Division
 P.O. Box 8928
 Madison, WI 53708-8928
 Telephone: (608) 266-6860
 Fax: (608) 267-4592
 TTY: (608) 264-8752



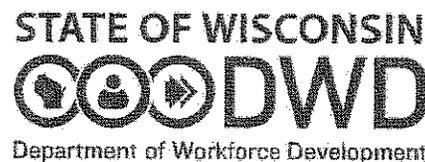
Scott Walker, Governor
 Reginald J. Newson, Secretary

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. 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

8/1/2015

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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 years 2015 and 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) repeals 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.).

As a result of these changes, 2015 will be the last year in which the annual Wisconsin Prevailing Wage Survey will be conducted.

(Drafted July 28, 2015)

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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/prevaling_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/prevaling_wage_rate/default.htm. For further assistance, call the Equal Rights Division at 608-266-6861 and ask for prevailing wage.

State of Wisconsin
Department of Workforce Development
Equal Rights Division
Labor Standards Bureau

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</u>		<u>Termination</u>		<u>Cause</u>		<u>Date of</u>		<u>Limitations/ Deviations</u>
		<u>Date</u>	<u>Date</u>	<u>Date</u>	<u>Violations</u>	<u>Code</u>	<u>Code</u>	<u>Violations</u>	<u>Violations</u>	
A-1 Duran Roofing & Insulation Services, Inc.	3700 N Fratney St Milwaukee, WI 53212	11/1/14	10/31/17	10/31/17	2011-	1, 2	and 4	2011-	2012	None
Abel, Mike	8095 NW 64 th St Miami, FL 33166									
	See, Abel Electric, Inc									
Abel Electric, Inc	3385 Belmar Rd Green Bay, WI 54313	9/1/12	8/31/15	8/31/15	2011	1				None
Alpha Electric, LLC	350 Business Park Dr Sun Prairie, WI 53590	8/1/15	7/31/18	7/31/18	2014	4				None
Arnie Christiansen Mason Contractors, LLC	2304 65 th Dr Franksville, WI 53126	9/1/14	8/31/16	8/31/16	2011	1, 2	and 4			None
Atkins, Scott	See, Freedom Insulation, Inc									
Boecker, Roger	See, R-Way Pumping, Inc									
Brechtl, Mark G	See, Ecodec, Inc									
Cargill Heating and Air Conditioning Company, Inc	3049 Edgewater La La Crosse, WI 54603	3/1/14	2/28/17	2/28/17	2011	1 and 2				None

<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>
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					
Gjolaj, Ded	See, Horizon Bros Painting Corp					

<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>
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
Jenkins, 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>
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
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

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

Department of Workforce Development
Equal Rights Division
P.O. Box 8928
Madison, WI 53708-8928
Telephone: (608) 266-6860
Fax: (608) 267-4592
TTY: (608) 264-8752



Scott Walker, Governor
Reginald J. Newson, Secretary

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.

State of Wisconsin
 Department of Workforce Development
 Equal Rights Division

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

State of Wisconsin
Department of Workforce Development
Equal Rights Division

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	Date Determination Issued	Date of Contract
County Of)	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

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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

State of Wisconsin
 Department of Workforce Development
 Equal Rights Division
 Labor Standards Bureau

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)	
Address	City State Zip Code
Telephone Number ()	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
Covered employees	Truck drivers & Other workers & Contractors	<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.

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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 Public Works Project Manager for approval.


AIA Document G702™ – 1992

Application and Certificate for Payment

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

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

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 law due.

1. ORIGINAL CONTRACT SUM \$ _____

2. Net change by Change Orders \$ _____

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

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

5. RETAINAGE:

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

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

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

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

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

8. CURRENT PAYMENT DUE \$ _____

9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 7 less Line 8) \$ _____

CONTRACTOR: _____ Date: _____

By: _____ Date: _____

State of _____

County of _____

Subscribed and sworn to before me this _____ day of _____

Notary Public
My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

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

AMOUNT CERTIFIED \$ _____

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

ARCHITECT: _____ Date: _____

By: _____ Date: _____

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

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

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AIA Document G703™ – 1992

Continuation Sheet

AIA Document G703, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
 In tabulations below, amounts are stated in the nearest dollar.
 Use Column I on Contracts where variable retentions 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 (DOLLARS)	G TOTAL COMPLETED AND STORED TO DATE (DOLLARS)	H % (G ÷ C)	I BALANCE TO FINISH (C - G)	J RETENTION OR VARIABLE RATE
			D FROM PREVIOUS APPLICATION (D + E)	E THIS PERIOD					

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.
 AIA Document G703™ – 1992. Copyright © 1993, 1995, 1996, 1997, 1970, 1976, 1983 and 1992 by The American Institute of Architects. All rights reserved. (AIA/Arch). 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 in 100 copies of this document when completed. To report copyright violations of AIA Contract Documents, e-mail The American Institute of Architects' legal counsel, copyright@aia.org.

2. 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. 201502312 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.

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SECTION 01 00 00
BASIC REQUIREMENTS

PART 1 GENERAL

1.1 SECTION SUMMARY

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

1.2 SUMMARY OF THE WORK

- A. Project Description: Perform the Work as specified and detailed in Construction Documents package. Contractor to provide mechanical equipment, wiring, in floor tubing, and other items for the Lake Farm storage building as detailed in Construction Documents.
- 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.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit two (2) 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 CHANGE PROCEDURES

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

1.6 ALTERNATES

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

- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates:
 - 1. Alternate Bid No. 1: Provide deduct price for removing package HV-1, the installation of in-floor heat tubing from the scope of this project.

1.7 COORDINATION

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

1.8 CUTTING AND PATCHING

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

1.9 CONFERENCES

- A. Owner will schedule a preconstruction conference after Award of Contract for all affected parties.
- B. Contractor shall submit Construction Schedule at the pre-construction meeting.
- C. When required in individual Specification section, convene a pre-installation conference at project site prior to commencing work of the section.

1.10 PROGRESS MEETINGS

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

1.11 SUBMITTAL PROCEDURES

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

1.12 PROPOSED PRODUCTS LIST

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

1.13 SHOP DRAWINGS

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

1.14 PRODUCT DATA

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

1.15 SAMPLES

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

1.16 MANUFACTURERS' INSTRUCTIONS

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

1.17 MANUFACTURERS' CERTIFICATES

- A. When specified in individual Specification sections, submit manufacturers' certificate to Public Works Project Manager for review, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

1.18 QUALITY ASSURANCE / QUALITY CONTROL OF INSTALLATION

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

1.19 REFERENCES

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

1.20 INTERIOR ENCLOSURES

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

1.21 PROTECTION OF INSTALLED WORK

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

1.22 PARKING

- A. Arrange for temporary parking areas to accommodate construction personnel. Parking shall be available at the Work site.

1.23 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 the various Contractors as their needs dictate with due regard for

storage requirements of each Contractor. Each Contractor shall be responsible for safety of equipment and materials that are stored on site.

1.24 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.

1.25 PROTECTION

- A. Contractor shall protect from injury all trees, shrubs, hedges, walks and driveways and pay for any damage to same resulting from insufficient or improper protection.
- B. Contractor shall provide and maintain barricades & signage to prohibit public access to construction site.

1.26 PROGRESS CLEANING

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

1.27 PRODUCTS

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

1.28 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

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

1.29 PRODUCT OPTIONS

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

1.30 SUBSTITUTIONS

- A. Public Works Project Manager shall consider requests for Substitutions only within fifteen (15) days after date of Public Works Construction Contract.
- B. Public Works Project Manager shall consider requests for Substitutions only up to seven (7) days prior to date of Bid Due Date.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Construction Documents.
- D. Submit three (3) copies of requests for Substitution for consideration. Limit each request to one (1) proposed Substitution.

E. Substitutions shall not change contract price established at Bid Due Date.

1.31 STARTING SYSTEMS

- A. Provide written notification prior to start-up of each equipment item or system.
- B. Ensure that each piece of equipment or system is ready for operation.
- C. Execute start-up under supervision of responsible persons in accordance with manufacturers' instructions.
- D. Submit written report that equipment or system has been properly installed and is functioning correctly.

1.32 DEMONSTRATION AND INSTRUCTIONS

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

1.33 CONTRACT CLOSEOUT PROCEDURES

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

1.34 FINAL CLEANING

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

1.35 ADJUSTING

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

1.36 OPERATION AND MAINTENANCE MANUAL

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

1.37 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.
- B. Deliver to the Work site and place in location as directed.

1.38 AS-BUILT AND RECORD DRAWINGS AND SPECIFICATIONS

- A. Contractor-produced Drawings and Specifications shall remain property of Contractor whether Project for which they are made is executed or not. Contractor shall furnish Architect / Engineer 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 the project As-Built Drawings & Specifications.
- B. Architect / Engineer shall update the original Construction Documents to include all Addendums & any other changes including those provided by the Contractor in the As-Built Drawings & Specifications. These updates are the project Record Drawings & Specifications.
- C. Architect / Engineer shall furnish the Public Works Project Manager with Record Drawings as detailed in the Professional Services Agreement.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 01 74 19

RECYCLING

PART 1 GENERAL

1.1 SUMMARY

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

- B. Related Sections:
 - 1. Section 01 00 00 - Basic Requirements
 - 2. Section 01 50 00 - Temporary Facilities and Controls
 - 3. Section 02 40 00 - Demolition & Structure Moving

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 The Dane County Green Building Policy, Resolution 299, 1999-2000.

- B. Contractor shall develop, with assistance of Public Works Project Manager and Architect / Engineer, Waste Management Plan (WMP) for this project. 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.

1.3 WASTE MANAGEMENT PLAN

- A. Contractor shall complete WMP and include cost of recycling / reuse in Bid. WMP will be submitted to Public Works Project Manager within fifteen (15) days of Notice to Proceed 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.

1.4 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.

1.5 RECYCLING

- A. These materials can be recycled in Dane County area:
1. Wood.
 2. Wood Pallets.
 3. Fluorescent Lamps.
 4. Foam Insulation & Packaging (extruded and expanded).
 5. PVC Plastic (pipe, siding, etc.).
 6. Asphalt & Concrete.
 7. Bricks & Masonry
 8. Corrugated Cardboard.
 9. Metal.
 10. Carpet Padding.
 11. Gypsum Drywall.
 12. Shingles.
 13. Barrels & Drums.
 14. Solvents.

1.6 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.

1.7 LISTS OF RECYCLING FACILITIES PROCESSORS AND HAULERS

- A. Web site www.countyofdane.com/pwht/recycle/categories.aspx lists current information for Dane County Recycling Markets. Contractors can also contact Dane County's Special Projects & Materials Manager 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.

1.8 WASTE MANAGEMENT PLAN FORM

A. Contractor Information:

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	
Glass	_____ 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	
Fluorescent Lamps	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Foam Insulation	_____ 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	
PVC Plastic	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Corrugated Cardboard	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Metals	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Carpet Padding	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	
Gypsum / Drywall	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
		_____ Landfilled	_____ Other	

Shingles	_____ cu. yds. _____ tons	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Barrels & Drums	_____ units	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Solvents	_____ gallons	_____ 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: _____

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

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SECTION 23 05 00
COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

SCOPE

This section includes information common to two or more technical specification sections or items that are of a general nature, not conveniently fitting into other technical sections.

This Division will be Priced in three packages. The following are the specification sections that apply to each pricing package:

HV-1 Radiant Floor Heating Tubing

- 23 05 00 Common Work Results for HVAC
- 23 21 13 Hydronic Piping

HV-2 Gas Detection, Ventilation Controls and Power Wiring to Ventilation Equipment

- 23 05 00 Common Work Results for HVAC
- 23 05 13 Common Motor Requirements for HVAC Equipment
- 23 09 26 Gas Detection System
- 23 09 93 Sequence of Operations for HVAC Controls

This section shall also coordinate with the following HV-3 Ventilation System Sections

- 23 05 93 Testing, Adjusting and Balancing for HVAC
- 23 07 00 HVAC Insulation
- 23 31 00 HVAC Ducts
- 23 33 00 Air Duct Accessories
- 23 34 00 HVAC Fans
- 23 55 00 Fuel Fired Heaters (Makeup Air Unit)

HV-3 Ventilation System

- 23 05 00 Common Work Results for HVAC
- 23 05 13 Common Motor Requirements for HVAC Equipment
- 23 05 23 Valve and Piping For Fuel Gas
- 23 05 93 Testing, Adjusting and Balancing for HVAC
- 23 07 00 HVAC Insulation
- 23 31 00 HVAC Ducts
- 23 33 00 Air Duct Accessories
- 23 34 00 HVAC Fans
- 23 37 13 Diffusers, Registers and Grilles
- 23 55 00 Fuel Fired Heaters (Makeup Air Unit)

This section shall also coordinate with the following HV-2 Gas Detection, Ventilation Controls and Power Wiring to Ventilation Equipment

- 23 09 26 Gas Detection System
- 23 09 93 Sequence of Operations for HVAC Controls

The following sections also apply to the installation of the hot water heating system in the future.

- 23 05 00 Common Work Results for HVAC
- 23 05 13 Common Motor Requirements for HVAC Equipment
- 23 05 23 Valve and Piping For Fuel Gas
- 23 05 93 Testing, Adjusting and Balancing for HVAC
- 23 07 00 HVAC Insulation
- 23 21 13 Hydronic Piping
- 23 25 25 Heat Transfer Fluids

1 **REFERENCE STANDARDS**

2 Abbreviations of standards organizations referenced in other sections are as follows:

3	AABC	Associated Air Balance Council
4	ADC	Air Diffusion Council
5	AGA	American Gas Association
6	AMCA	Air Movement and Control Association
7	ANSI	American National Standards Institute
8	ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
9	ASME	American Society of Mechanical Engineers
10	ASTM	American Society for Testing and Materials
11	EPA	Environmental Protection Agency
12	GAMA	Gas Appliance Manufacturers Association
13	IEEE	Institute of Electrical and Electronics Engineers
14	ISA	Instrument Society of America
15	MCA	Mechanical Contractors Association
16	MICA	Midwest Insulation Contractors Association
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 Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings,
30 or engineering parameters from those indicated on the contract documents, the contractor is responsible for
31 all costs involved in integrating the equipment or accessories into the system and for obtaining the
32 performance from the system into which these items are placed. This may include changes found necessary
33 during the testing, adjusting, and balancing phase of the project.

34
35 **CERTIFICATES AND INSPECTIONS**

36 The Respective Pricing Package Contractor will obtain and pay for all required State and/or Local permits
37 and installation inspections for work of their Pricing package in accordance with local municipal
38 requirements or Wis Adm Code.

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40 **PART 2 - PRODUCTS**

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42 **NOT USED**

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44 **PART 3 - EXECUTION**

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46 **COORDINATION**

47 Verify that all devices are compatible for the surfaces on which they will be used. This includes, but is not
48 limited to, diffusers, register, grilles, and wall terminal unit compatible with wall construction. Coordinate
49 all work with other contractors prior to installation. Any installed work that is not coordinated and that
50 interferes with other contractor's work shall be removed or relocated at the installing contractor's expense.

51
52 Cooperate with the test and balance agency in ensuring Section 23 05 93 specification compliance. Verify
53 system completion to the test and balance agency with controls adjusted and calibrated, controls cycled
54 through their sequences, etc.), ready for testing, adjusting and balancing work. Demonstrate the starting,
55 interlocking and control features of each system so the test and balance agency can perform its work.

56
57 **LUBRICATION**

58 Lubricate all bearings with lubricant as recommended by the manufacturer before the equipment is
59 operated for any reason. Once the equipment has been run, maintain lubrication in accordance with the
60 manufacturer's instructions until the work is accepted by the owner. Maintain a log of all lubricants used
61 and frequency of lubrication; include this information in the Operating and Maintenance Manuals at the
62 completion of the project.

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64 **END OF SECTION**

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SECTION 23 05 13
COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT

PART 1 - GENERAL

SCOPE

This sections includes requirements for single phase motors that are used with equipment specified in other sections.

Electrical power connections to the gas detection system, HVAC ventilation control system and ventilation equipment will be provided by Package HV-2 Contractor.

REFERENCE STANDARDS

ANSI/IEEE 112 Test Procedure for Polyphase Induction Motors and Generators
ANSI/NEMA MG-1 Motors and Generators
ANSI/NFPA 70 National Electrical Code

SHOP DRAWINGS

Include with the equipment which the motor drives the following motor information: motor manufacturer, horsepower, voltage, phase, hertz, rpm, full load efficiency. Include project wiring diagrams prepared by the contractor specifically for this work.

OPERATION AND MAINTENANCE DATA

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

PRODUCT CRITERIA

Motors to conform to all applicable requirements of NEMA, IEEE, ANSI, and NEC standards and shall be listed by U.L. for the service specified.

Select motors for conditions in which they will be required to perform; i.e., general purpose, splashproof, explosion proof, standard duty, high torque or any other special type as required by the equipment or motor manufacturer's recommendations.

Furnish motors for starting in accordance with utility requirements and compatible with starters as specified.

PART 2 - PRODUCTS

SINGLE PHASE, SINGLE SPEED MOTORS

Use NEMA rated 115 OR 230 volt, single phase, 60 hertz motors as scheduled.

Use permanent split capacitor or capacitor start, induction run motors equipped with permanently lubricated and sealed ball or sleeve bearings and Class A insulation. Service factor to be not less than 1.35.

Use open drip-proof motors unless totally enclosed fan-cooled, totally enclosed non-ventilated, explosion-proof, or encapsulated motors are specified in the equipment sections.

PART 3 - EXECUTION

COORDINATION

Pricing Package HV-2 Contractor shall coordinate Pricing Package HV-3 contractor for requirements of the power connections to and controls requirements for ventilation equipment.

INSTALLATION

When motor will be connected to the driven device by means of a belt drive, mount sheaves on the appropriate shafts in accordance with the manufacturer's instructions. Use a straight edge to check alignment of the sheaves; reposition sheaves as necessary so that the straight edge contacts both sheave faces squarely. After sheaves are aligned, loosen the adjustable motor base so that the belt(s) can be added

1 and tighten the base so that the belt tension is in accordance with the drive manufacturer's
2 recommendations. Frequently recheck belt tension and adjust if necessary during the first day of operation
3 and again after 80 hours of operation.
4 Lubricate all motors requiring lubrication. Record lubrication material used and the frequency of use.
5 Include this information in the maintenance manuals.

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**SECTION 23 05 23
VALVES AND PIPING FOR FUEL GAS**

PART 1 - GENERAL

SCOPE

LP GAS STORAGE TANK AND GAS PIPING TO THE MAKE UP AIR UNIT AND FUTURE BOILERS WILL BE PROVIDED BY THE OWNER AND THE OWNERS LP GAS STORAGE TANK SUPPLIER.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

COORDINATION

Pricing Package HV-3 Contractor shall coordinate with the Owner for LP gas capacity, required LP gas regulators and connection requirements for gas fired ventilation equipment.

END OF SECTION

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SECTION 23 05 93
TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 - GENERAL

SCOPE

The scope of Package HV-3 for this project is to engage an independent test and balance firm meeting the qualifications specified in the "QUALITY ASSURANCE" paragraph below to balance the air systems to design requirements.

Testing and balancing includes

- Air Systems:
 1. Make-up Air Units.
 2. Exhaust Fans.
 3. Exhaust Grilles.
 4. Supply Grilles.

Refer to project drawings equipment schedules for air flow requirements.

If problems are found, handle as specified in Part 3 under Deficiencies.

REFERENCE

Applicable provisions of the General Conditions, Supplementary General Conditions and General Requirements in Division 1 govern work under this section.

REFERENCE STANDARDS

AABC National Standards for Total System Balance, Sixth Edition, 2002.
ASHRAE ASHRAE Handbook, 2007 HVAC Applications, Chapter 37, Testing Adjusting and Balancing.
NEBB Procedural Standards for Testing Adjusting Balancing of Environmental Systems, Seventh Edition, 2005.

QUALITY ASSURANCE

Qualifications

An independent firm specializing in the Testing and Balancing of HVAC systems for a minimum of 3 years. A Firm not engaged in the commerce of furnishing or providing equipment or material generally related to HVAC work other than that specifically related to installing Testing and Balancing components necessary for work in this section such as, but not limited to sheaves, pulleys, and balancing dampers.

A certified member of AABC or certified by NEBB in the specific area of work performed. Maintain certification for the entire duration of the project.

SUBMITTALS

Submit testing, adjusting and balancing reports bearing the seal and signature of the NEBB or AABC Certified Test and Balance Supervisor. The reports certify that the systems have been tested, adjusted and balanced in accordance with the referenced standards; are an accurate representation of how the systems have been installed and are operating; and are an accurate record of all final quantities measured to establish normal operating values of the systems.

Summary: Provide summary sheet describing mechanical system deficiencies. Describe objectionable noise or drafts found during testing, adjusting and balancing. Provide recommendations for correcting unsatisfactory performances and indicate whether modifications required are within the scope of the contract, are design related or installation related. List instrumentation used during testing, adjusting and balancing procedures.

The remainder of the report to contain the appropriate standard NEBB or AABC forms for each respective item and system. Fill out forms completely. Where information cannot be obtained or is not applicable indicate same.

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PART 2 - PRODUCTS

INSTRUMENTATION

Provide all required instrumentation to obtain proper measurements. Application of instruments and accuracy of instruments and measurements to be in accordance with the requirements of NEBB or AABC Standards and instrument manufacturer's specifications.

All instruments used for measurements shall be accurate, and calibration histories for each instrument to be available for examination by Owner or Engineer upon request. Calibration and maintenance of all instruments to be in accordance with the requirements of NEBB or AABC Standards.

PART 3 - EXECUTION

COORDINATION

Package HV-3 Contractor shall coordinate Package HV-2 Contractor adjustment of controls for the proper adjustment of air volumes of ventilation equipment.

PERFORMING TESTING, ADJUSTING AND BALANCING

Perform testing, adjusting and balancing procedures on each system identified, in accordance with the detailed procedures outlined in the referenced standards except as may be modified below.

Cut insulation, ductwork and piping for installation of test probes to the minimum extent necessary for adequate performance of procedures. Patch using materials identical to those removed, maintaining vapor barrier integrity and pressure rating of systems.

Measure and record system measurements at the fan to determine total flow. Adjust equipment as required to yield specified total flow at terminals. Proceed taking measurements in mains and branches as required for final terminal balancing. Perform terminal balancing to specified flows balancing branch dampers, deflectors, extractors and valves prior to adjustment of terminals.

Measure and record static air pressure conditions across fans. Spot check static air pressure conditions directly ahead of terminal units.

Provide fan and motor drive sheave adjustments necessary to obtain design performance. Provide drive changes specifically noted on drawings, if any. If work of this section indicates that any drive or motor is inadequate for the application, advise the owner's project representative by giving the representative properly sized motor/drive information (in accordance with manufacturers original service factor and installed motor horsepower requirements); Confirm any change will keep the duct system within its design limitations with respect to speed of the device and pressure classification of the distribution system. Required motor/drive changes not specifically noted on drawings or in specifications will be considered an extra cost and will require an itemized cost breakdown submitted to owner's project representative. Prior authorization is needed before this work is started.

Final air system measurements to be within the following range of specified cfm:

Fans	0% to +10%
Supply grilles,	0% to +10%
Return/exhaust grilles, registers	0% to -10%

Permanently mark equipment settings, including damper and valve positions, control settings, and similar devices allowing settings to be restored. Set and lock memory stops.

Leave systems in proper working order, replacing belt guards, closing access doors and electrical boxes, and restoring controls to normal operating settings.

END OF SECTION

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SECTION 23 07 00
HVAC INSULATION

PART 1 - GENERAL

SCOPE

This section includes insulation specifications for piping and ductwork.

Ductwork insulation specified in this section shall be included in Package HV-3.

Piping insulation specified in this section shall be included in Future Work provided by the Owner.

REFERENCE STANDARDS

ASTM B209	Aluminum and Aluminum Alloy Sheet and Plate
ASTM C165	Test Method for Compressive Properties of Thermal Insulations
ASTM C177	Heat Flux and Thermal Transmission Properties
ASTM C195	Mineral Fiber Thermal Insulation Cement
ASTM C302	Density of Preformed Pipe Insulation
ASTM C355	Test Methods for Test for Water Vapor Transmission of Thick Materials
ASTM C449	Mineral Fiber Hydraulic Setting Thermal Insulation Cement
ASTM C518	Heat Flux and Thermal Transmission Properties
ASTM C534	Preformed Flexible Elastomeric Thermal Insulation
ASTM C547	Mineral Fiber Preformed Pipe Insulation
ASTM C612	Mineral Fiber Block and Board Thermal Insulation
ASTM C921	Properties of Jacketing Materials for Thermal Insulation
ASTM C1136	Flexible Low Permeance Vapor Retarders for Thermal Insulation
ASTM D412	Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension
ASTM D1000	Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications
ASTM D2240	Standard Test Method for Rubber Property—Durometer Hardness
ASTM E84	Surface Burning Characteristics of Building Materials
MICA	National Commercial & Industrial Insulation Standards
NFPA 225	Surface Burning Characteristics of Building Materials
UL 723	Surface Burning Characteristics of Building Materials

QUALITY ASSURANCE

Label all insulating products delivered to the construction site with the manufacturer's name and description of materials.

DESCRIPTION

Furnish and install all insulating materials and accessories as specified or as required for a complete installation. The following types of insulation are specified in this section:

- Duct Insulation
- Pipe Insulation

Install all insulation in accordance with the latest edition of MICA (Midwest Insulation Contractors Association) Standard and manufacturer's installation instructions. Exceptions to these standards will only be accepted where specifically modified in these specifications, or where prior written approval has been obtained from the Dane County Project Manager.

ENVIRONMENTAL REQUIREMENTS

Do not store insulation materials on grade or where they are at risk of becoming wet. Do not install insulation products that have been exposed to water.

Protect installed insulation work with plastic sheeting to prevent water damage.

1
2
3 **PART 2 - PRODUCTS**

4 **MATERIALS**

5 Manufacturers: Certainteed, Johns Manville, Knauf, Owens-Corning, VentureTape or approved equal.

6 Materials or accessories containing asbestos will not be accepted.

7
8 Use composite insulation systems (insulation, jackets, sealants, mastics, and adhesives) that have a flame
9 spread rating of 25 or less and smoke developed rating of 50 or less, with the following exceptions:

10
11 **INSULATION TYPES**

12 Insulating materials shall be fire retardant, moisture and mildew resistant, and vermin proof. Insulation
13 shall be suitable to receive jackets, adhesives and coatings as indicated.

14
15 **FLEXIBLE FIBERGLASS INSULATION:**

16 Minimum nominal density of 0.75 lbs. per cu. ft., and thermal conductivity of not more than 0.3 at 75
17 degrees F, rated for service to 250 degrees F.

18
19 **RIGID FIBERGLASS INSULATION:**

20 Minimum nominal density of 3 lbs. per cu. ft., and thermal conductivity of not more than 0.23 at 75 degrees
21 F, minimum compressive strength of 25 PSF at 10% deformation, rated for service to 450 degrees F.

22
23 **SEMI-RIGID FIBERGLASS INSULATION:**

24 Minimum nominal density of 3 lbs. per cu. ft., thermal conductivity of not more than 0.28 at 75 degrees F,
25 minimum compressive strength of 125 PSF at 10% deformation, rated for service to 450 degrees F.
26 Insulation fibers perpendicular to jacket and scored for wrapping cylindrical surfaces.

27
28 **ELASTOMERIC INSULATION:**

29 Flexible closed cell, minimum nominal density of 5.5 lbs. per cu. ft., thermal conductivity of not more than
30 0.27 at 75 degrees F, minimum compressive strength of 4.5 psi at 25% deformation, maximum water vapor
31 permeability of 0.17 perm inch, maximum water absorption of 6% by weight, rated for service range of -20
32 degrees F to 220 degrees F on piping and 180 degrees F where adhered to equipment.

33
34 **POLYOLEFIN INSULATION:**

35 Flexible closed cell, minimum nominal density of 1.5 lbs. per cu. ft., thermal conductivity of not more than
36 0.24 at 75 degrees F, minimum compressive strength of 5 psi at 25% deformation, maximum water vapor
37 permeability of 0.0 perm inch, maximum water absorption of 0% by weight and volume, rated for service
38 range of -165 degrees F to 210 degrees F.

39
40 **POLYISOCYANURATE INSULATION:**

41 Rigid closed cell polyisocyanurate, minimum nominal density of 2.0 lbs. per cu. ft., thermal conductivity of
42 not more than 0.19 at 75 degrees F aged 180 days, minimum compressive strength of 24 psi parallel and 13
43 psi perpendicular, maximum water vapor permeability of 4 perm inch, maximum water absorption of 2%
44 by volume, rated for service range of -290 degrees F to 300 degrees F.

45
46 **EXTRUDED POLYSTYRENE INSULATION:**

47 Rigid closed cell, minimum nominal density of 1.6 lbs. per cu. ft., thermal conductivity of not more than
48 0.285 at 75 degrees F, minimum compressive strength of 20 psi, maximum water vapor permeability of 1.5
49 perm inch, maximum water absorption of .5 % by volume, rated for service range of -290 degrees F to 165
50 degrees F.

51
52 **JACKETS**

53
54 **ALL SERVICE JACKETS (ASJ):**

55 Heavy duty, fire retardant material with white kraft reinforced foil vapor barrier, factory applied to
56 insulation with a self-sealing pressure sensitive adhesive lap, maximum permeance of .02 perms and
57 minimum beach puncture resistance of 50 units.

58
59 **FOIL SCRIM ALL SERVICE JACKETS (FSJ):**

60 Glass fiber reinforced foil kraft laminate, factory applied to insulation. Maximum permeance of .02 perms
61 and minimum beach puncture resistance of 25 units.

1 PROTECTIVE METAL JACKETS (PMJ):

2 .016 inch thick aluminum or .010 inch thick stainless steel with safety edge.

3
4 SELF-ADHERING JACKETS (SAJ):

5 5-ply, self-adhering multiple laminated waterproofing material with reflective aluminum foil, high density
6 polymer films and cold weather acrylic adhesive providing zero (0.0) permeability. Minimum 6 mils
7 material thickness, 35lb puncture resistance when tested in accordance with ASTM D1000 and flame
8 spread/smoke developed rating of 10/20 when tested in accordance with UL 723.

9
10 Vapor retarding tape shall be specifically designed and manufactured for use with the self-adhering jacket
11 specified above. Tape shall be provided by the same manufacturer that provides jacketing. Vapor retarding
12 tapes used with self-adhering jackets shall have a maximum permeance of 0.0 perms.

13
14 FABRIC REINFORCED MASTIC JACKETS (FMJ):

15 Glass fiber reinforcing fabric imbedded in weather barrier mastic as per manufacturer's recommended
16 procedure for 2 coat application.

17
18 VAPOR RETARDING JACKETS (VRJ):

19 Polyvinylidene chloride (PVDC) vapor retarding jacket material with minimum 6 mils material thickness
20 and maximum permeance of 0.01 perms. Material shall not support the growth of mold or mildew. Dow
21 Saran or equivalent.

22
23 Vapor retarding tape shall be specifically designed and manufactured for use with the vapor retarding
24 jacket specified above. Tape shall be provided by the same manufacturer that provides jacketing. Vapor
25 retarding tapes used with vapor retarding jackets shall have a maximum permeance of 0.01 perms.

26
27 **ACCESSORIES**

28 All products shall be compatible with surfaces and materials on which they are applied, and be suitable for
29 use at operating temperatures of the systems to which they are applied.

30
31 Adhesives, sealants, and protective finishes shall be as recommended by insulation manufacturer for
32 applications specified.

33
34
35 **PART 3 - EXECUTION**

36
37 **EXAMINATION**

38 Verify that all piping, equipment, and ductwork are tested and approved prior to installing insulation. Do
39 not insulate systems until testing and inspection procedures are completed.

40
41 Verify that all surfaces are clean, dry and without foreign material before applying insulation materials.

42
43 **INSTALLATION**

44 All materials shall be installed in strict accordance with manufacturer's recommendations, building codes,
45 and industry standards. Do not install products when the ambient temperature or conditions are not
46 consistent with the manufacturer's recommendations. Surfaces to be insulated must be clean and dry.

47
48 Locate insulation and cover seams in the least visible location. All surface finishes shall be extended in
49 such a manner as to protect all raw edges, ends and surfaces of insulation.

50
51 Install insulation with smooth and even surfaces. Poorly fitted joints or use of filler in voids will not be
52 accepted. Provide neatly beveled and coated terminations at all nameplates, uninsulated fittings, or at other
53 locations where insulation terminates.

54
55 Install fabric reinforcing without wrinkles. Overlap seams a minimum of 2 inches.

56
57 Use full length material (as delivered from manufacturer) wherever possible. Scrap piecing of insulation or
58 pieces cut undersize and stretched to fit will not be accepted.

59
60 All pipe and duct insulation shall be continuous through walls, ceiling or floor openings and through
61 sleeves except where firestop or firesafing materials are required. Vapor barriers shall be maintained
62 continuous through all penetrations.

1 Provide a continuous unbroken moisture vapor barrier on insulation applied to systems noted below.
2 Attachments to cold surfaces shall be insulated and vapor sealed to prevent condensation.

3
4 Provide a complete vapor barrier for insulation on the following systems:

- 5 • Cold Water Make-Up
- 6 • Glycol/Brine
- 7 • Insulated Duct
- 8 • Equipment, ductwork or piping with a surface temperature below 65 degrees F

9
10 **PROTECTIVE JACKET INSTALLATION**

11 **SELF-ADHERING JACKETS (SAJ):**

12 Install according to manufacturer's recommendations. Cut allowing minimum 4" overlap on ends and 6" on
13 longitudinal joints. Align parallel to surface. Remove release paper and press flat to surface to avoid
14 wrinkles. Rub entire surface for full adhesion and sealing at joint overlaps. On exterior applications,
15 provide a bead of compatible caulk along exposed edges.

16
17 Piping with self-adhering (SAJ) jackets shall have elbows, fittings, valves and butt joints wrapped with 2
18 layers of vapor retarding tape. Piping with a PVC jacket (PFJ) installed over the self-adhering (SAJ) jacket
19 may be provided with a single, lapped layer of vapor retarding tape for elbows, fittings and valves under
20 the PVC jacket. Vapor retarding tape shall be compatible with the jacket material used.

21
22 **VAPOR RETARDING JACKETS (VRJ):**

23 Piping with vapor retarding (VRJ) jackets shall have elbows, fittings, valves and butt joints wrapped with 2
24 layers of vapor retarding tape. Piping with a PVC jacket (PFJ) installed over the vapor retarding (VRJ)
25 jackets may be provided with a single, lapped layer of vapor retarding tape for elbows, fittings and valves
26 under the PVC jacket. Vapor retarding tape shall be compatible with the jacket material used.

27
28 **PVC FITTING COVERS AND JACKETS (PFJ):**

29 Lap seams and joints a minimum of 2 inches and continuously seal PVC with welding solvent
30 recommended by jacket manufacturer. Lap slip joint ends 4" without fasteners where required to absorb
31 expansion and contraction. For sections where vapor barrier is not required and jacket requires routine
32 removal, tack fasteners may be used. Secure PVC fitting covers with tack fasteners. For systems requiring a
33 vapor barrier, apply a 1-1/2" band of mastic over ends, throat, seams and penetrations.

34
35 **PROTECTIVE METAL JACKET (PMJ):**

36 Lap seams a minimum of 2 inches. Secure with metal bands for end to end joints, and rivets or sheet metal
37 screws for longitudinal joints. Rivets, screws, and bands to be constructed of the same material as the
38 jacket. Locate seams on bottom for exterior applications.

39
40 **FABRIC REINFORCED MASTIC JACKETS (FMJ):**

41 Glass fiber fabric shall be fitted without wrinkles. Glass fiber fabric shall be sized immediately upon
42 application with lagging adhesive and shall be capable of drying within 6 hrs. Apply adhesive and coating
43 in accordance with manufacturer's recommendations. All seams shall overlap not less than 2".

44
45 **PIPING, VALVE, AND FITTING INSULATION**

46 **GENERAL:**

47 Install insulation with butt joints and longitudinal seams closed tightly. Provide minimum 2" lap on jacket
48 seams and 2" tape on butt joints, firmly cemented with lap adhesive unless otherwise noted. Additionally
49 secure with staples along seams and butt joints. Coat staples, longitudinal and transverse seams with vapor
50 barrier mastic on systems requiring vapor barrier.

51
52 Install insulation continuous through pipe hangers and supports with hangers and supports on the exterior
53 of insulation. Where a vapor barrier is not required or where roller hangers are not being used, hangers and
54 supports may be attached directly to piping with insulation completely covering hanger or support and
55 jacket sealed at support rod penetration. Where riser clamps are required to be attached directly to piping
56 requiring vapor barrier, extend insulation and vapor barrier jacketing/coating around riser clamp.

57
58 Where insulated piping is installed on hangers and supports, the insulation shall be installed continuous
59 through the hangers and supports. High density inserts shall be provided as required to prevent the weight
60 of the piping from crushing the insulation. Pipe shields are required at all support locations. The insulation
61 shall not be notched or cut to accommodate the supporting channels.

1 Fully insulate all reheat coil piping, fittings and valves (with the exception of unions) up to coil connection
2 to prevent condensation when coil is inactive during cooling season. Provide a vapor proof seal between the
3 pipe insulation and the insulated coil casing.
4

5 **INSULATION INSERTS AND PIPE SHIELDS:**

6 Provide pipe shields at all hanger and support locations. Rigid insulation inserts shall be installed between
7 the pipe and the insulation shields. Quantity and placement of inserts shall be according to the
8 manufacturer's installation instructions, however the inserts shall be no less than 12" in length. Inserts shall
9 be of equal thickness to the adjacent insulation and shall be vapor sealed as required for system.
10

11 Provide insulation inserts and pipe shields at all hanger and support locations. Inserts may be omitted on
12 3/4" and smaller copper piping provided 12" long 22 gauge pipe shields are used.
13

14 **FITTINGS AND VALVES:**

15 Fittings, valves, unions, flanges, couplings and specialties may be insulated with factory molded or built up
16 insulation of the same thickness as adjoining insulation. Where the ambient temperature exceeds 150
17 degrees F, cover insulation with fabric reinforcing and mastic. Where the ambient temperatures do not
18 exceed 150 degrees, furnish and install PVC fitting covers.
19

20 **ELASTOMERIC AND POLYOLEFIN:**

21 Where practical, slip insulation on piping during pipe installation when pipe ends are open. Miter cut
22 fittings allowing sufficient length to prevent stretching. Completely seal seams and joints for vapor tight
23 installation. For elastomeric insulation, apply full bed of adhesive to both surfaces. For polyolefin, seal
24 factory preglued seams with roller and field seams and joints with full bed of hot melt polyolefin glue to
25 both surfaces. Cover elastomeric insulation on systems operating below 40 degrees F with vapor barrier
26 mastic.
27

28 **PIPE INSULATION SCHEDULE:**

29 Provide insulation on new and existing remodeled piping as indicated in the following schedule:
30

<u>Service</u>	<u>Insulation</u>	<u>Jacket</u>	<u>Insulation Thickness by Pipe Size</u>		
Hot Water > 130°F	Rigid Fiberglass	ASJ	≤ 1-1/4" 1.5"	1-1/2" 1.5"	2" to 4" 2"
Hot Water ≤ 130°F	Elast./Polyol	None	0.5"	1"	1.5"

37 The following piping and fittings are not to be insulated:

- Piping unions for systems not requiring a vapor barrier

40 **DUCT INSULATION**

41 **GENERAL:**

42 Secure flexible duct insulation on sides and bottom of ductwork over 24" wide and all rigid duct insulation
43 with weld pins. Space fasteners 18" on center or less as required to prevent sagging.
44

45 Secure rigid board insulation to ductwork with weld pins. Apply insulation with joints firmly butted as
46 close as possible to the equipment surface. Pins shall be located a maximum of 3" from each edge and
47 spaced no greater than 12" on center.
48

49 Install weld pins without damage to the interior galvanized surface of the duct. Clip pins back to washer
50 and cover penetrations with tape of same material as jacket. Firmly butt seams and joints and cover with 4"
51 tape of same material as jacket. Seal tape with plastic applicator and secure with staples. All joints, seams,
52 edges and penetrations to be fully vapor sealed.
53

54 Stop and point insulation around access doors and damper operators to allow operation without disturbing
55 insulation or jacket material.
56

57 External supply duct insulation is not required where ductwork contains continuous 1" acoustical liner.
58 Provide 4" overlap of external insulation over ends of acoustically lined sections.
59
60

1 Where insulated ductwork is supported by trapeze hangers, the insulation shall be installed continuous
 2 through the hangers. Drop the supporting channels required to facilitate the installation of the insulation.
 3 Where rigid board or flexible insulation is specified, install high density inserts to prevent the weight of the
 4 ductwork from crushing the insulation.

5
 6 Where insulated low temperature (below 45°F) ductwork is supported by steel metal straps or wire ropes
 7 that are secured directly to the duct, the straps or ropes shall be completely covered with insulation and
 8 sealed to provide a complete vapor barrier.

9
 10 Where ductwork exposed to the weather is insulated the top surface of the insulation shall be sloped a
 11 minimum of 1/4" per foot to eliminate ponding and create positive drainage off of insulation.

12
 13 **DUCT INSULATION SCHEDULE:**

14 Provide duct insulation on new and existing remodeled ductwork in the following schedule:

15 Service	16 Insulation Type	17 Jacket	18 Insulation Thickness
19 Outside air ducts	Rigid Fiberglass	FSJ	2"
20 Exposed supply ducts*	Rigid Fiberglass	FSJ	2"
21 All Ducts located in unconditioned or unheated areas***	Flexible Fiberglass	FSJ	3"
22 Exhaust ducts downstream of motorized backdraft dampers	Rigid Fiberglass	FSJ	2"
23 Exhaust ducts upstream of motorized backdraft dampers and in cold areas**	Rigid Fiberglass	FSJ	2"
24 All ducts exposed to weather	Ext. Polystyrene	SAJ	3"

25
 26
 27 * Exposed supply branch ducts located in the space they are serving do not require insulation. Exposed
 28 supply main ducts running through spaces they serve shall be insulated as exposed supply ducts
 29 scheduled above.

30
 31 ** Ducts located in attics between backdraft damper and heated space shall be insulated as scheduled or
 32 shall be enclosed with building attic insulation with an R value equal to the scheduled insulation.

33
 34 *** Outside air ductwork between the isolation damper and the outside air intake does not require
 35 insulation where it is located in an unheated attic.

36 **EQUIPMENT INSULATION SCHEDULE:**

37 Provide equipment insulation as follows:

38 Equipment	39 Insulation	40 Jacket	41 Thickness
42 Hot Water Air Separators	Semi-Rigid Fiberglass	ASJ/FMJ	1.5"

43
 44 END OF SECTION

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SECTION 23 09 26
GAS DETECTION SYSTEM

PART 1 - GENERAL

SCOPE

The work covered by this section of the specifications includes the furnishing of all labor, equipment, materials, and performance of all operations associated with the installation of the new Gas Detection and Alarm System as shown on the drawings and as herein specified.

The materials specified in this section shall be provided and installed as part of Package HV-2.

Technical assistance for the installation of the gas detection system shall be provided to the Package HV-2 Contractor by the system manufacturer and/or the system supplier/manufacturers representative.

RELATED WORK

The work covered by this section of the specifications shall be coordinated with the related work as specified elsewhere.

DESCRIPTION OF WORK

Furnish and install a complete Multi-Zone Gas Detection System within the Dane County Parks Operations Facility as described herein and as shown on the plans; to be wired, connected, and left in first class operating condition.

- Zone 1 shall consist of Room 100; CH4 detection.
- Zone 2 shall consist of Room 103; CH4 detection.
- Zone 3 shall consist of Room 105; CH4, NO2 and CO detection.

The Gas Detection System shall be manufactured by Quatrosense Environmental, LTD. (www.QELsafety.com), or prior approved equivalent, and shall be provided for the monitoring of toxic and combustible gas concentrations, and any other 4-20mA input parameter.

The complete installation shall be done in a neat, workmanlike manner in accordance with all applicable Codes and the manufacturer's recommendations.

REGULATORY REQUIREMENTS

The complete installation shall conform to the applicable sections of the latest edition of the following Codes and Standards:

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

- NFPA-70 National Electrical Code (NEC)
- NFPA 101 Life Safety Code
- IBC International Building Code
- IFC International Fire Code
- IMC International Mechanical Code

SUBMITTALS

Supplier of the gas detection system shall submit all products for approval prior to ordering any equipment.

PRODUCT DELIVERY, STORAGE AND HANDLING

Owner shall receive equipment at job site; verify applicable components and quantity delivered.

Handle equipment to prevent internal components' damage and breakage, as well as denting and scoring of enclosure finish.

Do not install damaged equipment.

1 **SPARE PARTS**

2 Supplier shall provide the following spare parts in quantities shown:

3 Quantity : Type of Device

4 (1) Toxic Gas Transmitter/Sensor - NO2

5 (1) Toxic Gas Transmitter/Sensor - CO

6 (1) Combustible Gas Transmitter/Sensor - CH4

7

8

9

PART 2 - PRODUCTS

10

11 **ENCLOSURES**

12 All panels and peripheral devices shall be the standard product of a single manufacturer and shall display
13 the manufacturer's name on each component.

14

15 **CONTROL PANEL**

16 Provide QEL Model M-CONTROLLER with CTS-M-Series Gas Detectors or 4-20mA inputs from gas
17 detectors and/or auxiliary input devices.

18

19 Controller requirements:

20

- 21 • 4 parallel RS 485 ports for up to 32 gas sensors wired in a 'daisy chain' configuration, and a
22 total of 99 relays wired in a 'daisy chain' configuration without compromising sensor count.
- 23 • 8 analog (4-20mA) input ports for monitoring from any other measurement device.
- 24 • Three on board DPDT relays rated 5 Amp resistive 3.7 Amp inductive at 240 VAC / 30 VDC.
- 25 • Relay assignment individually set to one or all transmitter/sensors in any combination. May be
26 set for averaging, or voting.
- 27 • Time delays individually set, make, break, average, voting.
- 28 • Audio indicator with three modes of alarm.
- 29 • 24VDC Horn and strobe outputs.
- 30 • Available 8 channel scalable analog 4-20mA output from controller configurable for any
31 sensor or group of sensors to host computer, BAS, DDC or data acquisition system.
- 32 • RS-422 output to computer/PLC with Modbus Protocol.
- 33 • RS-232 programming port and interconnect cable for programming configuration of system
34 (includes non-proprietary M-View software CD for system configuration).
- 35 • 5 LED status lights.
- 36 • Digital display and keypad for manual programming.
- 37 • Test Function for microprocessor, lights, relays, audio calibration disable through front
38 keypad.
- 39 • Locking door latch.
- 40 • Non-proprietary configuration software and access password to controller. 45

41

42 Sequence of Operation:

43

44 Refer to Division 23, Section 23 09 93, Sequence of Operations for HVAC Controls for complete
45 sequence of operation.

46

47 Activate visual alarm at low warning, visual alarm at high warning, audible device fully configurable
48 for either or both.

49

50 **TRANSMITTER/SENSORS**

51

TOXIC GAS TRANSMITTER/SENSOR – NO2

Provide QEL Model CTS-M5150 Series stand-alone, analog and/or networked toxic gas
transmitter/sensors.

- 1 Toxic Gas Transmitter/Sensor requirements:
- 2 • Electrochemical Sensor
 - 3 • Range 0 to 10 ppm.
 - 4 • Digital display of gas concentration.
 - 5 • Scalable 4-20 mA or 2-10 VDC linearized output.
 - 6 • RS-485 digital communication.
 - 7 • 2 SPDT relay output Form C, 1 amp dry contact and buzzer (optional).
 - 8 • Time delays (make and break) on relay outputs.
 - 9 • Outputs, range, relay enable/disable, time delays, digital addressing, configuration adjustable
 - 10 through 3 switches on side of unit.
 - 11 • Input voltage 24VAC or 24VDC.
 - 12 • Non-proprietary calibration protocol.

13

14 Sequence of Operation:

15 Refer to Division 23, Section 23 09 93, Sequence of Operations for HVAC Controls for complete

16 sequence of operation.

17

18 Activate fan(s) per zone when the level of gas reaches 1.00 ppm concentration.

19

20 Activate visual alarm at low warning, audible and visual alarm at high warning.

21

22 TOXIC GAS TRANSMITTER/SENSOR - CO

23 Provide QEL Model CTS-M5160 Series stand-alone, analog and/or networked toxic gas

24 transmitter/sensors.

25

26 Toxic Gas Transmitter/Sensor requirements:

- 27 • Electrochemical Sensor
- 28 • Range 0 to 250 ppm.
- 29 • Digital display of gas concentration.
- 30 • Scalable 4-20 mA or 2-10 VDC linearized output.
- 31 • RS-485 digital communication.
- 32 • 2 SPDT relay output Form C, 1 amp dry contact and buzzer (optional).
- 33 • Time delays (make and break) on relay outputs.
- 34 • Outputs, range, relay enable/disable, time delays, digital addressing, configuration adjustable
- 35 through 3 switches on side of unit.
- 36 • Input voltage 24VAC or 24VDC.
- 37 • Non-proprietary calibration protocol.

38

39 Sequence of Operation:

40 Refer to Division 23, Section 23 09 93, Sequence of Operations for HVAC Controls for complete

41 sequence of operation.

42

43 Activate fan(s) per zone when the level of gas reaches 35.00 ppm concentration.

44

45 Activate visual alarm at low warning, audible and visual alarm at high warning.

46

47 COMBUSTIBLE GAS TRANSMITTER/SENSOR – CH4

48 Provide QEL Model CTS-M1710 Series stand-alone, analog and/or networked combustible gas

49 transmitter/sensor.

50

51 Combustible Gas Transmitter/Sensor requirements:

- 52 • Catalytic Bead Sensor.
- 53 • Range 0 to 100 % LEL
- 54 • Digital display of gas concentration

- 1 • Scalable 4-20 mA or 2-10 VDC linearized output
- 2 • RS-485 digital communication
- 3 • 2 SPDT relay output Form C, 1 amp dry contact and buzzer (optional)
- 4 • Time delays (make and break) on relay outputs
- 5 • Outputs, range, relay enable/disable, time delays, digital addressing, configuration adjustable
- 6 through 3 switches on side of unit
- 7 • Input voltage 24VAC or 24VDC
- 8 • Non-proprietary calibration protocol

9
10 **Sequence of Operation:**

11 Refer to Division 23, Section 23 09 93, Sequence of Operations for HVAC Controls for complete
12 sequence of operation.

13 Activate fan(s) per zone when the level of gas reaches 2.5% concentration.

14 Activate visual alarm at low warning, audible and visual alarm at high warning.

15
16
17 **PART 3 - EXECUTION**

18
19 **GENERAL**

20 The complete installation shall be done in a neat, workmanlike manner in accordance with the applicable
21 requirements of NFPA 70 and the manufacturer's recommendations.

22 Commissioning shall be performed by authorized technician and be provided by the system manufacturer
23 and/or the system supplier.

24
25 **TESTING**

26 Before proceeding with any testing, all persons, facilities and building occupants whom receive alarms or
27 trouble signals shall be notified by the contractor to prevent unnecessary response or building occupant
28 distress. At the conclusion of testing, those previously notified shall be notified that testing has been
29 concluded.

30 The manufacturer's authorized representative shall provide on-site supervision of the complete system
31 installation, perform a complete functional test of the system, and submit a written report to the Owner
32 attesting to the proper operation of the completed system prior to final inspection.

33
34 **WARRANTY**

35 The Contractor shall warrant the completed system wiring and equipment to be free from inherent
36 mechanical and electrical defects for a period of two (2) years from the date of substantial completion of
37 the project.

38
39 **TESTING**

40 Manufacturers representative shall provide a qualified technician to test system after installation and before
41 final inspection, training and fire and building inspection department inspections.

42
43 **FIRE DEPARTMENT - INSPECTION DEPARTMENT DEMONSTRATION**

44 Manufacturers representative shall provide a qualified technician to demonstrate the system operation if
45 required by the respective departments.

46
47 **TRAINING**

48 The supplier of the gas detection system shall provide up to 1 hour training on the operation of the gas
49 detection operation integration with ventilation control system to owner personnel and the Engineer.

50
51 **WIRING**

52 Wiring shall be in conduit as specified in the "electrical outline specifications" on drawing PME-102 of the
53 previous bid package. All applicable provisions of these specifications shall apply.

54
55 **END OF SECTION**

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SECTION 23 09 93
SEQUENCE OF OPERATION FOR HVAC CONTROLS

PART 1 - GENERAL

SCOPE

This section includes control sequences for HVAC equipment provided by this project.

Material and equipment required to complete the control sequences will be provided by the Package HV-2.

All work required to execute the control sequences specified in this section will be performed by Package HV-2.

RELATED WORK

Section 23 05 93 - Testing, Adjusting, and Balancing for HVAC – Coordination

DESCRIPTION OF WORK

Control sequences are hereby defined as the manner and method by which automatic controls function.

Operation equipment, devices and system components required for control systems are specified in other Division 23 control sections of these specifications.

SUBMITTALS

The HV-2 Contractor will develop the control equipment diagrams and narrative of the sequence of operation for equipment that is controlled by the electric control system. The narrative of the sequence of operation shall not be a verbatim copy of the sequences contained herein, but shall reflect the actual operation as applied by the contractor.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

CONTROL SEQUENCES

MAKEUP AIR UNIT MUA-1

Unit is provided with remote control panel, discharge temperature control with room override and an outside air inlet damper.

The unit is 100 percent outside air.

The unit shall operation shall be controlled by:

- A 24 hour, 7 day time clock to provide programmed operation time to provide makeup air for exhaust ventilation. The occupied operating schedule shall be determined by the Owner.
- The system shall operate a minimum of 5 hours per 24 hour period.
- A manual switch to provide operation to provide supply air for space ventilation and exhaust makeup when manually switched on.
- Interlocked with the lighting switches in rooms 100 and 103 to operate to provide supply air for space ventilation and exhaust makeup when the space is occupied as determined by the lighting being on.
- Interlocked with gas detection system. Refer to gas detection control sequences.

EXHAUST FANS

The exhaust fans shall be controlled with the following sequences:

EF-1:

- Manual switched with space lighting with time delay operation.

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EF-2:

- Fan is interlocked to operate whenever makeup air unit MUA-1 is operating.
- Interlocked with the lighting switches in rooms 100 and 103 to provide exhaust for space exhaust ventilation when the space is occupied as determined by the lighting being on even if the normal programmed operation is off.
- Fan is interlocked with gas detection system.
- Refer to gas detection control sequences.

EF-3:

- Interlocked with CH₄ gas detection system in Rooms 100 and 103.
- Refer to gas detection control sequences.

EF-4:

- NOT USED

EF-5 and EF-7:

- Fan EF-5, fan discharge damper actuator and intake louver damper actuator shall be controlled by a 24 hour, 7 day time clock to provide programmed operation of the fan and open the fan discharge damper and intake damper.
- Fan EF-5 shall operate for a minimum of 5 hours in each 24 hour period.
- Fan EF-5 and associated dampers shall be interlocked with the lighting switches in rooms 105 to provide exhaust for space exhaust ventilation when the space is occupied as determined by the lighting being on even if the normal programmed operation is off.
- Fan EF-5 and associated dampers shall also be interlocked with the CO and NO₂ gas detection system to operate on detection of CO or NO₂ above the detection activation levels.
- Fan EF-7 shall operate whenever fan EF-5 and EF-6 are not operating.
- Refer to gas detection control sequences.
- When EF-6 is activated based on detection of CH₄, fans EF-5 and EF-7 shall not operate.

EF-6:

- Fan is interlocked with CH₄ gas detection system in Room 105.
- Refer to gas detection control sequences.

IN-FLOOR HEATING SYSTEM (Control is not included in Package HV-2)

The in-floor heating system control sequences will be developed when the boilers and associated hot water heating system equipment is installed. The boilers and associated hot water heating system equipment will be installed in a future phase.

Room 105 is designed to be unheated at this time. In-floor heating tubing is installed in the event that the space is to be heated in the future. If in the future the space is heated tempered make up air shall be installed equal to EF-5 exhaust volume.

GAS DETECTION CONTROL SEQUENCES

The scope of this project is the control of make-up air units and exhaust fans for various modes of operation based on normal occupied-unoccupied cycles and on detection of Carbon Monoxide (CO), Nitrogen Dioxide (NO₂, diesel exhaust) or Methane (CH₄, natural gas aka CNG) as specified in this specification section.

The building is divided into 3 detection zones for gas detections. There is also other ventilation/exhaust equipment controlled as part of this project.

In the sequence descriptions the following are the designated gases detected:

- CO is Carbon Monoxide
- NO₂ is Nitrogen Dioxide
- CH₄ is Methane, Natural Gas (CNG)

This section shall receive the specific gas detection zone signal from the detection system to activate the ventilation sequence of operation starting or stopping specific equipment required to execute the ventilation sequence.

1 An audio and visual alarm shall be provided in all three zones upon detection of Methane (CH₄, Natural
2 Gas) in any of the zones.

3
4 Signs shall be provided by the Owner and will be posted in all building areas indicating:

5
6 **UPON ACTIVATION OF THE CH₄ (NATURAL GAS) DETECTION ALARMS**
7 **ALL AREAS OF THE BUILDING SHALL BE EVACUATED**
8 **THE BUILDING SHALL NOT BE OCCUPIED WHILE THE ALARMS ARE ACTIVE**
9 **ONCE THE ALARMS ARE CLEARED THE BUILDING CAN BE REOCCUPIED**

10
11 This specification has the following detections zone designations:

12
13 Detection Zone 1 - Room 100
14 Normal occupied
15 Normal unoccupied
16 Detection Zone 1 detection of CH₄

17
18 Detection Zone 2 - Room 103
19 Normal occupied
20 Normal unoccupied
21 Detection Zone 2 detection of CH₄

22
23 Detection Zone 3 - Room 105
24 Normal occupied
25 Normal unoccupied
26 Detection Zone 3 detection of CH₄
27 Detection Zone 3 detection of CO
28 Detection Zone 3 detection of NO₂

29
30 **SEQUENCES FOR DETECTION ZONE ONE - ROOM 100**

31
32 NORMAL OCCUPIED OPERATION

33 Make up air unit MUA-1 and EF-2 shall operate as specified above.

34
35 NORMAL UNOCCUPIED OPERATION

36 All fans and the makeup air shall be off.

37
38 DETECTION OF CH₄ - ZONE 1

39 Exhaust fan EF-3 shall be energized.

40
41 Designated garage doors at rooms 100 and 103 shall open to the indicated level. Coordinate the garage
42 door operation with the door supplier to provide the required control.

43
44 Make up air unit MUA-1 shall be de-energized.

45
46 Exhaust fan EF-2 shall de-energized.

47
48 **Building shall be evacuated.**

49
50 CLEARING OF DETECTION ALARMS

51 When the alarm of a detected gas, CH₄ returns to normal and the alarm is cleared the mode of operation
52 shall return to normal programmed occupied or unoccupied mode **and the building can be reoccupied.**

53
54 **SEQUENCES FOR DETECTION ZONE TWO - ROOM 103**

55
56 NORMAL OCCUPIED OPERATION

57 Make up air unit MUA-1 and EF-2 shall operate as specified above.

58
59 NORMAL UNOCCUPIED OPERATION

60 All fans and the makeup air shall be off.

1 DETECTION OF CH₄ - ZONE 2
2 Exhaust fan EF-3 shall be energized.
3
4 Designated garage doors at rooms 100 and 103 shall open to the indicated level. Coordinate the garage
5 door operation with the door supplier to provide the required control.
6
7 Make up air unit MUA-1 shall be de-energized.
8
9 Exhaust fan EF-2 shall de-energized.
10
11 **Building shall be evacuated.**
12
13 CLEARING OF DETECTION ALARMS
14 When the alarm of a detected gas, CH₄ returns to normal and the alarm is cleared the mode of operation
15 shall return to normal programmed occupied or unoccupied mode **and the building can be reoccupied.**
16
17 **SEQUENCES FOR DETECTION ZONE THREE - ROOM 105**
18
19 NORMAL ON - MINIMUM PERIOD OF OPERATION
20 EF-5 shall operate as specified above.
21
22 NORMAL OFF - OPERATION
23 EF-7 shall operate as specified above. EF-5 shall operate as specified above.
24
25 DETECTION OF CH₄ - ZONE 3
26 Exhaust fan EF-6 shall be energized.
27
28 The outside air intake louver/damper shall be open.
29
30 Exhaust fan EF-5 and EF-7 shall de-energized.
31
32 **Building shall be evacuated.**
33
34 CLEARING OF DETECTION ALARMS
35 When the alarm of a detected gas, CH₄ returns to normal and the alarm is cleared the mode of operation
36 shall return to normal programmed occupied or unoccupied mode **and the building can be reoccupied.**
37
38 DETECTION OF CO - ZONE 3
39 The system shall remain in the NORMAL ON - MINIMUM PERIOD OF OPERATION mode, or if in the
40 NORMAL OFF - OPERATION mode switch to the NORMAL ON mode.
41
42 DETECTION OF NO₂ - ZONE 3
43 The system shall remain in the NORMAL ON - MINIMUM PERIOD OF OPERATION mode, or if in the
44 NORMAL OFF - OPERATION mode switch to the NORMAL ON mode.
45
46 CLEARING OF DETECTION ALARMS
47 When the alarm of a detected gas, CO, NO₂ or CH₄ returns to normal and the alarm is cleared the mode of
48 operation shall return to normal programmed occupied or unoccupied mode.
49
50 **WIRING**
51 Wiring shall be in conduit as specified in the "electrical outline specifications" on drawing PME-102 of the
52 previous bid package. All applicable provisions of these specifications shall apply.
53
54 **TRAINING**
55
56 The installing contractor of the control system shall provide up to 2 hours training on the operation of the
57 ventilation control system to designate Owner personnel.
58
59

END OF SECTION

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**SECTION 23 21 13
HYDRONIC PIPING**

PART 1 - GENERAL

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SCOPE

This section includes information common to two or more technical specification sections or items that are of a general nature, not conveniently fitting into other technical sections.

Package HV-1 includes providing and installing PEX in-floor piping as specified in this section and indicated on the drawings.

Other products specified in this section will be provided in future phases.

REFERENCE STANDARDS

ANSI B16.4	Cast Iron Threaded Fittings
ANSI B16.5	Pipe Flanges and Flanged Fittings
ANSI B16.22	Wrought Copper and Wrought Copper Alloy Solder Joint Pressure Fittings
ASTM A53	Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless
ASTM A105	Forgings, Carbon Steel, for Piping Components
ASTM A126	Gray Cast Iron Castings for Valves, Flanges, and Pipe Fittings
ASTM A181	Forgings, Carbon Steel for General Purpose Piping
ASTM A234	Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures
ASTM B75	Seamless Copper Tube
ASTM B88	Seamless Copper Water Tube

PART 2 - PRODUCTS

IN-FLOOR HOT WATER RADIANT PEX PIPING

Radiant floor heating using cross-linked polyethylene (PEX) tubing and appropriate fittings specification.

Certified to:

- ASTM F876 Standard Specification for Cross-linked Polyethylene (PEX) Tubing.
- ASTM E84, Standard Test Method for Surface Burning Characteristics of Test Materials.
- ASTM E119
- STM F877
- UL 263
- NFPA 251 Fire Tests of Building Construction and Materials.
- International Mechanical Code (IMC)
- International Building Code (IBC)

Design Requirements

- Cross-linked Polyethylene Tubing (PEX): Standard Grade hydrostatic pressure ratings from Plastics Pipe Institute in accordance with TR-3 as listed in TR-4.
- Performance requirements: Provide Hydronic system that is manufactured, fabricated and installed to comply with regulatory agencies and authorities with jurisdiction, and maintain performance criteria stated by the tubing manufacturer.
- Cross-linked Polyethylene Tubing (PEX):
 - 1 Show compliance with ASTM F877
 - 2 Show compliance with DIN 4726 regarding oxygen diffusion concerns where applicable.

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Submittals

- Provide engineering analysis using manufacturer’s proprietary software.
- Provide installation drawings indicating tubing layout, manifold locations, zoning requirements.
- Provide manufacturer’s heat output delivered to the structure.

Warranty

- Submit, for Owner’s acceptance, manufacturer’s standard warranty document executed by authorized company official.
- Manufacturer’s warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.
- Warranty covers the repair or replacement of any tubing or fittings proven defective.
- Warranty Period for Tubing is 25-year, non-prorated warranty against failure due to defect in material or workmanship, beginning with date of substantial completion.

Layout Drawings

- Provide Owner with copies of any detailed layout drawings before installation.

Manufacturers:

- REHAU, Watts Radiant, Inc., Uponor/Wirsbo, or approved equivalent.

Temperature/Pressure Ratings: shall be capable of withstanding temperatures of:

- 73.4°F (23°C) at 160 psi
- 180°F (82.2°C) at 100 psi

Minimum Bend Radius (Cold Bending):

- No less than six times the outside diameter.
- Use the tubing manufacturer’s bend supports if radius is less than stated.

Barrier Tubing Type:

- Oxygen Diffusion Barrier: Tubing has an oxygen diffusion barrier that shall not exceed an oxygen diffusion rate of 0.10 g/cubic meter (.000062 lb/cu. ft.) per day at 104 degrees F (40 degrees C) water temperature.

Nominal Inside Diameter: Provide tubing with nominal inside diameter in accordance with ASTM F876, as indicated:

- 3/8 inch (9.53 mm)
- 1/2 inch (12.7 mm)
- 5/8 inch (15.88 mm)
- 3/4 inch (19.05 mm)
- 1 inch (25.4 mm)
- 1 1/4 inch (31.75 mm)
- 1 1/2 inch (38.1 mm)

1 **IN-FLOOR HOT WATER RADIANT SYSTEM ACCESSORIES AND CONTROLS**

2
3 Fittings

- 4
- 5 • Fittings shall be third-party certified to applicable standards ASTM F877, ASTM F2080 and CSA
 - 6 B137.5 as part of the manufacturer's PEX piping system, with independent listings from NSF, CSA
 - 7 and ICC, as applicable.
 - 8 • Compression nut manifold fittings shall be manufactured of brass with a barbed insert and a
 - 9 reusable split compression ring.
 - 10 • Compression-sleeve fittings shall be manufactured of brass and shall be approved by the piping
 - 11 manufacturer to be part of a proven cataloged system.
 - 12 • Fittings embedded within the thermal mass or encased behind walls or ceilings shall be cold-
 - 13 expansion compression-sleeve fittings certified to ASTM F2080. Where required by the
 - 14 manufacturer, fittings shall be protected from external environmental conditions.

15
16 Manifolds

- 17 • Material: Distribution manifolds shall be manufactured of brass or copper and be supplied by the
- 18 piping manufacturer as a proven cataloged part of the manufacturer's system.
- 19 • Brass manifolds shall be produced from extruded brass round pipe with tapped holes for
- 20 connections, and be pre-assembled by the manufacturer. 100% of manifolds used shall have been
- 21 air tested by the manufacturer with no indication of leaks.

22
23
24 Balancing Manifolds

- 25 • Where required, brass balancing manifolds shall be equipped with integral visual flow gauges,
- 26 circuit balancing and flow control valves, isolation valves with integral thermometer housings, and
- 27 air vent/fill ports.
- 28 • Each circuit valve shall be supplied with a manual actuating handle for filling/purging operation.

29
30
31 **HEATING HOT WATER**

32 2" and Smaller:

33 ASTM A53, type F, standard weight (schedule 40) black steel pipe with ASTM A126/ANSI B16.4, class

34 125, standard weight cast iron threaded fittings.

35
36 ASTM B88 seamless, type L, hard temper copper tube with ANSI B16.22 wrought copper solder-joint

37 fittings in lieu of steel pipe for all sizes. Mechanically formed tee fittings may be used in lieu of wrought

38 copper solder-joint tee fittings for branch takeoff up to one-half (1/2) the diameter of the main.

39
40 **MAKEUP WATER**

41 Extend from where left by the Plumbing Contractor with the same materials.

42
43 **VENTS AND RELIEF VALVES**

44 Use pipe and pipe fittings as specified for the system to which the relief valve or vent is connected.

45
46 **UNIONS AND FLANGES**

47 2" and Smaller: ASTM A197/ANSI B16.3 malleable iron unions with brass seats. Use black malleable iron

48 on black steel piping and galvanized malleable iron on galvanized steel piping. Use ANSI B16.18 cast

49 copper alloy unions on copper piping. Use unions of a pressure class equal to or higher than that specified

50 for the fittings of the respective piping service but not less than 250 psi.

51
52 **GASKETS**

53 Water and Glycol Systems: Branded, compressed, non-asbestos sheet gaskets. Klingsil C4401, Garlock

54 3000, JM Clipper 978 or approved equal.

1
2
3 **PART 3 - EXECUTION**

4 Carefully inspect all pipe, fittings, valves, equipment and accessories before installation. Any items that
5 are unsuitable, cracked or otherwise defective shall be rejected and removed from the job site immediately.
6 Excluding minor surface rust, piping that exhibits significant oxidation or corrosion will be rejected.
7 Exercise care at every stage of storage, handling, laying and erecting to prevent entry of foreign matter into
piping, fittings, valves, equipment and accessories. Do not erect or install any item that is not clean.

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

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

14 Furnish and install all flanges, caps, bypasses, drains, valves, etc. required to facilitate flushing and
15 draining all heating and cooling system piping.

16
17 Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a
18 window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute
19 piping as required to clear such interferences. In all cases, consult drawings for exact location of pipe
20 spaces, ceiling heights, door and window openings, or other architectural details before installing piping.
21

22 Mitered ells, notched tees, and orange peel reducers are not acceptable. On threaded piping, bushings are
23 not acceptable.
24

25 Install drains throughout the systems to permit complete drainage.
26

27 Install all valves, control valves, and piping specialties, including items furnished by others, as specified
28 and/or detailed. Make connections to all equipment installed by others where that equipment requires the
29 piping services indicated in this section.
30

31 **INSTALLATION OF IN-FLOOR HEATING SYSTEMS**

32
33 Comply with manufacturer's product data, including product technical bulletins, installation instructions
34 and design drawings, including the following:
35

- 36
- 37 • Installation manuals
 - 38 • Design software engineering and analysis
 - 39 • Staple the tubing to the subflooring for above grade installations and to insulation board for slab
40 on grade installations in accordance with the tubing manufacturer's installation recommendations.
 - 41 • Use closer tubing on-center distances along exterior walls. Increase tubing on-center
42 distances as the installation moves away from the exterior wall as determined by
43 manufacturer analysis.
 - 44 • In slab on grade installations Install tubing at a consistent depth below the surface elevation.
45 Ensure sufficient clearance to avoid control joint saw cutting.
 - 46 • Where tubing crosses expansion joints in the concrete, interior concrete floors, exterior concrete
47 ensure the tubing passes below the joints or is sleeved through the joint

48 **Site Tests**

- 49
- 50 • To ensure system integrity, pressure test the system before covering tubing in concrete or when
51 other trades are working in the vicinity of the tubing. Maintain tests until all flooring is installed.
52
53
54
55

- 1 Tube identification
2
3 • Identify each zone tubing riser above the floor at the future manifold location with the zone
4 number for future coordination.
5
6 Protection
7
8 • Protect installed work from damage caused by subsequent construction activity on the site.
9 • Repair or replace damaged installed products.

10
11 **THREADED PIPE JOINTS**

12 Use a Teflon based thread lubricant or Teflon tape when making joints; no hard setting pipe thread cement
13 or caulking will be allowed.
14
15

16 **COPPER PIPE JOINTS**

17 Remove all slivers and burrs remaining from the cutting operation by reaming and filing both pipe surfaces.
18 Clean fitting and tube with emery cloth or sandpaper. Remove residue from the cleaning operation, apply
19 flux, and assemble joint. Use 95-5 solder or brazing to secure joint as specified for the specific piping
20 service.
21

22 **MAKEUP WATER**

23 Install where indicated and/or specified, including all valves, piping specialties and dielectric unions
24 required for a functional system.
25

26 **VENTS AND RELIEF VALVES**

27 Install vent and relief valve discharge lines as indicated on the drawings, as detailed, and as specified for
28 each specific valve or piping specialty item. In no event is a termination to occur less than six feet above a
29 roof line.
30

31 **UNIONS AND FLANGES**

32 Install a union or flange, as required, at each automatic control valve and at each piping specialty or piece
33 of equipment which may require removal for maintenance, repair, or replacement. Where a valve is located
34 at a piece of equipment, locate the flange or union connection on the equipment side of the valve.
35 Concealed unions or flanges are not acceptable.
36

37 **GASKETS**

38 Store horizontally in cool, dry location and protect from sunlight, water and chemicals. Inspect flange
39 surfaces for warping, radial scoring or heavy tool marks. Inspect fasteners, nuts and washers for burrs or
40 cracks. Replace defective materials.
41

42 Align flanges parallel and perpendicular with bolt holes centered without using excessive force. Center
43 gasket in opening. Lubricate fastener threads, nuts and washers with lubricant formulated for application.
44

45 Draw flanges together evenly to avoid pinching gasket. Tighten fasteners in cross pattern sequence (12 – 6
46 o'clock, 3 – 9 o'clock, etc.), one pass by hand and four passes by torque wrench at 30% full torque, 60%
47 full torque and two passes at full torque per ASME B16.5.
48

49 **PIPING SYSTEM LEAK TESTS**

50 Verify that the piping system being tested is fully connected to all components and that all equipment is
51 properly installed, wired, and ready for operation. If required for the additional pressure load under test,
52 provide temporary restraints at expansion joints or isolate them during the test. Verify that hangers can
53 withstand any additional weight load that may be imposed by the test.
54

55 Provide all piping, fittings, blind flanges, and equipment to perform the testing.
56

57 Conduct pressure test with test medium of air or water unless specifically indicated. Minimum test time is
58 indicated in the table below; additional time may be necessary to conduct an examination for leakage.
59 Each test must be witnessed by the Division's representative. If leaks are found, repair the area with new
60 materials and repeat the test; caulking will not be acceptable.
61

1 Do not insulate pipe until it has been successfully tested.

2
3 For hydrostatic tests, use clean water and remove all air from the piping being tested by means of air vents
4 or loosening of flanges/unions. Measure and record test pressure at the high point in the system.

5
6 For air tests, gradually increase the pressure to not more than one half of the test pressure; then increase the
7 pressure in steps of approximately one-tenth of the test pressure until the required test pressure is reached.
8 Examine all joints and connections with a soap bubble solution or equivalent method. The piping system
9 exclusive of possible localized instances at pump or valve packing shall show no evidence of leaking.
10 After testing is complete, slowly release the pressure in a safe manner.

11

<i>System</i>	<i>Pressure</i>	<i>Medium</i>	<i>Duration</i>
12 Heating hot water	100 psig	Water	8 hr

13
14
15

16 On piping that can not be tested because of connection to an active line, provide temporary blind flanges
17 and hydrostatically test new section of piping. After completion of test, remove temporary flanges and
18 make final connections to piping. Die penetrate test pass weld or x-ray the piping that was not
19 hydrostatically tested up to the active system.

20
21 **HYDRONIC PIPING SYSTEM FLUSHING**

22 All new heating hot water system piping shall be flushed thoroughly before the systems are put in to
23 operation. Discharge shall be from drains provided at all low points in the piping, ends of headers and as
24 otherwise necessary to flush and drain the entire system.

25
26 A clean water source shall be tapped into the system downstream of the main circulation pump(s). Flush
27 piping systems using the following procedure:

28
29 Flushing sequence for hot water systems is as follows:

- 30
- 31 1. Flush piping by turning on flushing water source and sequentially opening drains on mains on
32 each floor until the discharge is clean. This will flush the mains without forcing water/debris into
33 the branches and run out pipes.
 - 34 2. Open individual drain valves until the discharge is clean.
 - 35 3. Open the individual isolation valves located downstream of the coils/wall fin. This will flush the
36 return branch and run out lines located between the coils/wall fin and the mains back into the
37 mains and out the drains on the return mains. The water going through the coil/wall fin should be
38 already be clean since this section was flushed previously.
 - 39 4. Repeat steps 1-3 to clean debris from the mains.

40 After flushing operations are complete, drain and/or blow out any residual water, clean and replace all
41 strainers, and add scale and corrosion inhibitors. Leave flushing connections/valves in place and cap.

42
43 **END OF SECTION**
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SECTION 23 25 25
HEAT TRANSFER FLUIDS

PART ONE - GENERAL

SCOPE

This section includes information on the heat transfer fluids to be installed in the in-floor heating system in the future.

The materials specified in this section shall be provided and installed by the Owner in the future and is included for information only.

RELATED WORK

Section 23 21 13 - Hydronic Piping

DESCRIPTION

Fill the closed loop in-floor hydronic heating system with a 35 % by volume solution of a fully formulated propylene glycol based heat transfer fluid. The final concentration shall be no less than 30 % by volume. (System shall be filled with 5% higher concentration than desired final concentration due to dilution effects of flush water entrapped in low spots of piping system and factory hydrostatic test water.)

The system shall have a metal system nameplate and shall contain the following information:

- Date of original HTF charge
- Description of Heat Transfer Fluid
- Manufacture's Name, Address and Telephone
- Percent Propylene Glycol
- Freeze Point & Burst Point
- Total System Gallons
- Reference to Material Safety Sheet
- Instructions for Sampling of Fluid
- Month for Annual Sampling
- Mailing Instructions

SUBMITTALS

Refer to division 1, General Conditions, Submittals.

Required for all items in this section. Include manufacture and specific product ratings/capacities/ranges.

PART TWO - PRODUCTS

ACCEPTABLE HEAT TRANSFER FLUIDS

Choose one of the following: Dow, DowFrost HD, Interstate Chemical, Intercool P-300, Houghton Chemical, Safe-T-Therm, or approved equivalent

PROPYLENE GLYCOL-BASED PRODUCTS

The heat transfer fluid shall be an inhibited propylene glycol-based industrial heat transfer fluid specifically formulated for use in HVAC and geothermal systems. The fluid must contain corrosion inhibitors and buffers and an antifoam agent, necessary for long fluid and system life.

Provide the following concentrations:

The 35% solution (final solution not less than 30%) of heat transfer fluid and de-ionized water, pre-mixed by the chemical manufacturer, shall have a freezing point of 15.6 degrees F, a burst point of 5 degrees F, a pH between 9.5 and 10.5, a reserve alkalinity of 15.0ml HCl/10ml, a specific gravity of 1.053-1.063 at 15/15 degrees C, no flash point, no silicates and an orange or yellow color.

1 The de-ionized water used to dilute the concentrate and the pre-mixed solutions shall contain less than: 100
2 ppm calcium carbonate hardness 40 ppm calcium plus magnesium ions 50 ppm chloride plus sulfate ions.

3
4 Field or distributor mixed fluid, automotive antifreeze, uninhibited glycol or field or distributor inhibited
5 glycol is not acceptable.

6
7
8 **PART THREE - EXECUTION**
9

10 **PREPARATION FOR FILL**

11 The piping system shall be hydro-statically tested to the required test conditions to assure no leaks.
12 Piping system shall be cleaned prior to system fill of heat transfer fluid. Dirt, filings, oil, etc. shall be
13 removed and flushed from the system prior to final fill.

14
15 **GLYCOL-BASED PRODUCTS**

16 For the initial flush fill system with high quality water and system cleaner recommended by the glycol
17 manufacturer. Water shall contain less than 100ppm CaCO₃ hardness and less than 50ppm chloride plus
18 sulfate ions. Blended solution shall have a concentration of cleaner recommended by the glycol
19 manufacturer.

20
21 Drain the system of cleaning solution. Open the isolation valves to all heat transfer equipment. Using a
22 meter refill, fill the system with high quality water.

23
24 The premixed formulated heat transfer fluid solution shall be pumped into the fill connection on the suction
25 side of the pump. Before starting the filling pump, high points of the system should have vents open.
26 (Note: Unlike filling with water, these vent locations must be manned at all times during the filling process
27 so that the formulated heat transfer fluid solution is not inadvertently spilled.)

28
29 When the brine reaches the vent, the vent shall be manually closed and the fill pump shall be stopped. Care
30 must be taken not to over pressurize the system. The systems air eliminator shall be used to remove the
31 final amounts of air.

32
33 The formulated heat transfer fluid shall be kept circulating through the system at the design pressure. The
34 contractor shall monitor the system pressure to make sure the pressure does not drop. If the pressure does
35 drop, there is a leak in the system.

36
37 **FILLING THE SYSTEM**

38 Fill the system with the specified solution concentration of 35%. The manufacturer's pre-mixed solution
39 shall be complete with all inhibitors, buffers, and anti-foam agent as specified.

40
41 Vent system during fill. After the system is filled and the air is properly purged, allow the fluid to circulate
42 for 24 hours. Then, pull a sample using the sample kit provided by the manufacturer. Pull a second sample
43 six months after the initial fill, and on the anniversary of the fill. It is recommended these samples are to be
44 sent to the manufacturer for analysis.

45
46 The analysis from the manufacturer should list the following:

- 47 - Concentration, vol %
- 48 - Freeze Point, Degrees F
- 49 - pH, Color, Clarity
- 50 - Reserve Alkalinity, ml
- 51 - Inhibitors: Ferrous, Copper & Brass Corrosion Products
- 52 - Degradation Products
- 53 - Corrosives
- 54 - Scale Promoters
- 55 - Contaminants

56 **END OF SECTION**

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SECTION 23 31 00
HVAC DUCTS

PART 1 - GENERAL

SCOPE

This section includes specifications for all duct systems used on this project.

The materials specified in this section shall be provided and installed as part of Package HV-3.

RELATED WORK

Section 23 05 93 - Testing, Adjusting, and Balancing for HVAC
Section 23 33 00 – Air Duct Accessories

REFERENCE

Applicable provisions of Division 1 govern work under this Section.

REFERENCE STANDARDS

ASTM A90	Test Method for Weight of Coating on Zinc-Coated (Galvanized) Iron or Steel Articles
ASTM A623	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process
ASTM A527	Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Lock-Forming Quality
NFPA 90A	Standard for the Installation of Air Conditioning and Ventilating Systems
UL 181	Standard for Safety for Factory Made Air Ducts and Air Connectors.

DESIGN CRITERIA

Construct all ductwork to be free from vibration, chatter, objectionable pulsations and leakage under specified operating conditions.

Use material, weight, thickness, gauge, construction and installation methods as outlined in the following SMACNA publications, unless noted otherwise:

- HVAC Duct Construction Standards, Metal and Flexible, 3rd Edition, 2005
- HVAC Air Duct Leakage Test Manual, 2nd Edition, 2012
- HVAC Systems - Duct Design, 4th Edition, 2006

Use products which conform to NFPA 90A, possessing a flame spread rating of not over 25 and a smoke developed rating no higher than 50.

DELIVERY, STORAGE AND HANDLING

Promptly inspect shipments to ensure that Ductwork is undamaged and complies with the specification.

Protect Ductwork against damage.

Storage and protection methods must allow inspection to verify products.

PART 2 - PRODUCTS

GENERAL

All sheet metal used for construction of duct shall be 24 gauge or heavier except for round 12" and below may be 26 gauge where allowed in SMACNA HVAC Duct Construction Standards.

MATERIALS

GALVANIZED STEEL SHEET:

Use ASTM A 653 galvanized steel sheet of lock forming quality. Galvanized coating to be 1.25 ounces per square foot, both sides of sheet, G90 in accordance with ASTM A90.

LOW PRESSURE DUCTWORK (Maximum 2 inch pressure class)

Fabricate and install ductwork in sizes indicated on the drawings and in accordance with SMACNA recommendations, except as modified below.

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Construct so that all interior surfaces are smooth. Use slip and drive or flanged and bolted construction when fabricating rectangular ductwork. Use spiral lock seam construction when fabricating round spiral ductwork. Sheet metal screws may be used on duct hangers, transverse joints and other SMACNA approved locations if the screw does not extend more than 1/2 inch into the duct.

Provide expanded take-offs or 45 degree entry fittings for branch duct connections with branch ductwork airflow velocities greater than 700 fpm. Square edge 90-degree take-off fittings or straight taps will not be accepted.

DUCT SEALANT

Manufacturer: 3M 800, 3M 900, H.B. Fuller/Foster, Hardcast, Hardcast Peal & Seal, Lockformer cold sealant, Mon-Eco Industries, United Sheet Metal, or approved equal. Silicone sealants are not allowed in any type of ductwork installation.

Install sealants in strict accordance with manufacturer's recommendations, paying special attention to temperature limitations. Allow sealant to fully cure before pressure testing of ductwork, or before startup of air handling systems.

PART 3 - EXECUTION

INSTALLATION

Verify dimensions at the site, making field measurements and drawings necessary for fabrication and erection. Check plans showing work of other trades and consult with Architect in the event of any interference.

Install duct to pitch toward outside air intakes and drain to outside of building. Solder or seal seams to form watertight joints.

Install all motor operated dampers. Do not install ductwork through dedicated electrical rooms or spaces unless the ductwork is serving this room or space.

Protect diffusers, registers and grilles with plastic wrap or some other approved form of protection to maintain dirt and dust free and to prevent entry of dirt, dust and foreign material into the Ductwork.

DUCTWORK SUPPORT

Support ductwork in accordance with SMACNA HVAC Duct Construction Standards.

LOW PRESSURE DUCT (Maximum 2 inch pressure class)

Seal all duct, with the exception of transfer ducts, in accordance with SMACNA seal class "A"; all seams, joints, and penetrations shall be sealed.

Install a manual balancing damper in each branch duct and for each diffuser or grille.

END OF SECTION

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SECTION 23 33 00
AIR DUCT ACCESSORIES

PART 1 - GENERAL

SCOPE

This sections includes accessories used in the installation of duct systems.

The materials specified in this section shall be provided and installed as part of Package HV-3.

REFERENCE STANDARDS

NFPA 90A Standard for Installation of Air Conditioning and Ventilating Systems
SMACNA HVAC Duct Construction Standards - Metal and Flexible, 2nd Edition, 1995
UL 214
UL 555 (6th edition) Standard for Fire Dampers and Ceiling Dampers
UL 555S (4th edition) Leakage Rated Dampers for Use in Smoke Control Systems

SHOP DRAWINGS

Submit for all accessories and include dimensions, capacities, ratings, installation instructions, and appropriate identification.

PART 2 - PRODUCTS

MANUAL VOLUME DAMPERS

Manufacturers: Ruskin, Vent Products, Air Balance, or approved equal.

Dampers must be constructed in accordance with SMACNA Fig. 2-12, Fig. 2-13, and notes relating to these figures, except as modified below.

TURNING VANES

Manufacturers: Aero Dyne, Anemostat, Barber-Colman, Hart & Cooley, or approved equal.

Construct turning vanes and runners for square elbows in accordance with SMACNA Fig. 2-3 and Fig. 2-4 except use only airfoil type vanes. Construct turning vanes for short radius elbows and elbows where one dimension changes in the turn in accordance with SMACNA Fig. 2-5 and Fig. 2-6.

ACCESS DOORS

Access door to be designed and constructed for the pressure class of the duct in which the door is to be installed. Doors in exposed areas shall be hinged type with cam sash lock. Hinges shall be aluminum or steel full length continuous piano type. Doors in concealed spaces may be secured in place with cam sash latches. For both hinged and non hinged doors provide sufficient number of cam sash latches to provide air tight seal when door is closed. Do not use hinged doors in concealed spaces if this will restrict access. Use minimum 1" deep 24 gauge galvanized steel double wall access doors with minimum 24 gauge galvanized steel frames. For non-galvanized ductwork, use minimum 1" deep double wall access door with frame that shall use materials of construction identical to adjacent ductwork. Provide double neoprene gasket that shall provide seals from the frame to the door and frame to the duct. When access doors are installed in insulated ductwork or equipment provide insulated doors with insulation equivalent to what is provided for adjacent ductwork or equipment. Access doors constructed with sheet metal screw fasteners will not be accepted.

LOUVERS

Manufacturers: Greenheck, or approved equivalent by Airolite, Industrial Louvers, American Warming and Ventilating, Construction Specialties, Ruskin.

Extruded aluminum alloy as and accessories and construction as scheduled. Provide with bird screen of 1/2" x 1/2" mesh aluminum in 12 gauge aluminum.

Louver to bear the AMCA certified ratings seal for both air performance and water penetration, having a free area not less than scheduled based on a 48" x 48" section

1
2
3 **PART 3 - EXECUTION**

4 **MANUAL VOLUME DAMPERS**

5 Install manual volume dampers in each branch duct and for each grille, register, or diffuser as far away
6 from the outlet as possible while still maintaining accessibility to the damper. Install so there is no flutter
7 or vibration of the damper blade(s).

8 **TURNING VANES**

9 Install turning vanes in all rectangular, mitered elbows in accordance with SMACNA standards and/or
10 manufacturer's recommendations.

11
12 If duct size changes in a mitered elbow, use single wall type vanes with a trailing edge extension. If duct
13 size changes in a radius elbow or if short radius elbows must be used, install sheetmetal turning vanes in
14 accordance with SMACNA Figure 2-5 and Figure 2-6.

15
16 **ACCESS DOORS**

17 Install access doors where specified, indicated on the drawings, and in locations where maintenance,
18 service, cleaning or inspection is required. Examples include, but are not limited to motorized dampers,
19 fire and smoke dampers, smoke detectors, fan bearings, heating and cooling coils, filters, valves, and
20 control devices needing periodic maintenance.

21 Size and numbers of duct access doors to be sufficient to perform the intended service. Minimum access
22 door size shall be 8 x 8 inch size for hand access, 18 x 18 inch size for shoulder access, or other size as
23 indicated.
24

25
26 **LOUVERS**

27 Louvers are furnished and installed by the this section contractor. The installation of the louvers shall be
28 coordinated with the Building General Contractor
29

30 **FLASHINGS**

31 Flashing for wall penetrations with ductwork or the installation of louvers and wall mounted fans, shall be
32 sealed water tight to the building wall.
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35 **END OF SECTION**

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SECTION 23 34 00
HVAC FANS

PART 1 - GENERAL

SCOPE

This section includes specifications for fans that are not an integral part of a manufactured device.

The materials specified in this section shall be provided and installed as part of Package HV-3.

RELATED WORK

Section 23 05 13 - Common Motor Requirements for HVAC Equipment

Section 23 05 31 - HVAC Ducts

Section 23 05 33 - Air Duct Accessories

REFERENCE STANDARDS

AMCA 203 AMCA Fan Application Manual - Troubleshooting

AMCA 210 Laboratory Method of Testing Fans for Rating

NFPA 90A Standard for the Installation of Air Conditioning and Ventilating Systems

NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations

QUALITY ASSURANCE

Refer to division 1, Basic Requirements, Equals and Substitutions.

SHOP DRAWINGS

Include dimensions, capacities, fan curves, materials of construction, ratings, weights, motors and drives, sound power levels, appropriate identification and vibration isolation for all equipment. Sound power levels to be based on tests performed in accordance with AMCA Standard 300.

Fan curves shall indicate the relationship of CFM to static or total pressure for various fan speeds. Brake horsepower, recommended selection range, and limits of operation are to also be indicated on the curves. Indicate operating point on the fan curves at design air quantity and indicate the manufacturer's recommended drive loss factor for the specific application. Tabular fan performance data is not acceptable.

OPERATION AND MAINTENANCE DATA

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

DESIGN CRITERIA

Tested and certify all fans in accordance with the applicable AMCA test code.

Each fan and motor combination shall be capable of delivering 110% of air quantity scheduled at scheduled static pressure. The motor furnished with the fan shall not operate into the motor service factor when operating under these conditions. Consider drive efficiency in motor selection according to manufacturer's published recommendation or according to AMCA Publication 203, Appendix L.

Where inlet and outlet ductwork at any fan is changed from that shown on the drawings, provide any motor, drive and/or wiring changes required due to increased static.

All roof mounted equipment to be provided with curbs as an accessory to the fan and be compatible with the roof on which the equipment is to be installed .

PART 2 - PRODUCTS

GENERAL

Use fan size, class, type, arrangement, and capacity as scheduled.

Furnish complete with motors, wheels, drive assemblies, bearings, vibration isolation devices, and accessories required for specified performance and proper operation. All single phase motors to have

1 inherent thermal overload protection. Provide variable pitch sheaves for drives 3 hp and smaller, fixed pitch
2 sheaves for drives 5 hp and larger. Design all drives for 150% of motor rating.
3
4 Use OSHA approved belt guards that totally enclose the entire drive. Construct guards of expanded metal
5 to allow for ventilation; provide tachometer openings at shaft locations.
6
7 Statically and dynamically balance all fans so they operate without objectionable noise or vibration.
8
9 Use AMCA Type A spark resistant construction for all fans handling flammable or explosive vapors.

10
11 **SIDEWALL CENTRIFUGAL FANS**

12 Manufacturers: Carnes, Greenheck, Cook, Jenn-Air, ACME, Penn, or approved equal.
13
14 Dome type with spun aluminum housing, non-overloading centrifugal wheel, factory mounted and wired
15 motor and disconnect switch housed in a separate ventilated compartment, belt or drive drive as scheduled,
16 120 volt electrically operated control damper with blade edge and jamb seals, damper operator, and
17 birdscreen.
18
19 Provide accessories as scheduled.

20
21 **SIDEWALL PROPELLER FANS**

22 Manufacturers: Greenheck, Penn, ACME, Cook, S&P or approved equal.
23
24 Constructed of steel with angle iron reinforcing and motor support frame, die formed propeller blades of
25 aluminum construction or drive drive as scheduled, electric operated control damper with blade edge and
26 jamb seals, damper operator, birdscreen, and screened inlet/fan guard. Unless a special coating is
27 scheduled, paint fans with a prime coat after metal cleaning and surface preparation; apply a second coat of
28 paint to all exterior surfaces.
29
30 Provide accessories as scheduled and factory fabricated wall sleeves.

31
32 **CEILING EXHAUST FANS**

33 Carnes, Greenheck, Penn, Jenn-Air, Cook, ACME, S&P, or approved equal.
34
35 Centrifugal blower wheel, steel housing with acoustical lining, integral exhaust grille, adjustable mounting
36 brackets to allow for any ceiling thickness, permanently lubricated motor, integral junction box with
37 permanently lubricated and thermally protected motor factory wired, and backdraft damper. Provide wall,
38 eave, or roof discharge assembly, as indicated on the drawings.
39

40
41 **PART 3 - EXECUTION**

42
43 **INSTALLATION**

44 Install as shown on the drawings, as detailed, and according to manufacturer's installation instructions.
45
46 Provide all additional structural support to mount the fans to the to the building roof or wall structure,
47 coordinating with the Building Construction Contractor.
48

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50 **END OF SECTION**

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SECTION 23 37 13
DIFFUSERS, REGISTERS & GRILLES

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PART 1 - GENERAL

45

SCOPE

46 This section includes specifications for air terminal equipment.

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The materials specified in this section shall be provided and installed as part of Package HV-3.

RELATED WORK

Section 23 31 00 - HVAC Ducts

Section 23 33 00 - Air Duct Accessories

Section 23 05 93 - Testing, Adjusting and Balancing for HVAC

REFERENCE STANDARDS

NFPA 90A - Installation of Air Conditioning and Ventilation Systems.

UL 181 - Factory-Made Air Ducts and Connectors.

ARI-ADC Standard 880

SUBMITTALS

Refer to division 1, Basic Requirements, Submittals.

Furnish submittal information including, but not limited to, the following:

Manufacturer's name and model number

Identification as referenced in the documents

Capacities/ratings

Materials of construction

Sound ratings

Dimensions

Finish

Color selection charts where applicable

Manufacturer's installation instructions

All other appropriate data

DESIGN CRITERIA

All performance data shall be based on tests conducted in accordance with Air Diffusion Council (ADC)

Test Code 1062 GRD 84.

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PART 2 - PRODUCTS

MANUFACTURERS

Manufacturers: Carnes, Krueger, Titus, Metal-Aire, and E.H. Price.

SIDE-WALL REGISTERS AND GRILLES

Carnes model as scheduled. Titus, Metal Aire, Krueger,,Price or prior approved equivalent.

Steel unless otherwise indicated, with frame type appropriate to installation.

Double deflection type blade supply registers and supply grilles allow deflection adjustment in all direction.

Fixed blade (0 degree, 30 degree or 45 degree) core return and exhaust registers and grilles.

- 1
- 2 Register and grille sizes as shown on drawings and/or as scheduled.
- 3
- 4 White, baked enamel finish or powder coat finish, unless otherwise indicated.
- 5
- 6 Screw holes on surface counter sunk to accept recessed type screws.
- 7

8

9 **PART 3 - EXECUTION**

10

11 **INSTALLATION**

- 12 Install grilles, registers and diffusers as shown on drawings and according to manufacturer's instructions.
- 13
- 14 Coordinate the final locations with the ceiling layout.
- 15
- 16 Seal connections between ductwork drops and diffusers/grilles airtight.
- 17

18 **END OF SECTION**

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SECTION 23 55 00
FUEL-FIRED HEATERS

PART 1 - GENERAL

SCOPE

This section includes specifications for fuel-fired heaters.

The materials specified in this section shall be provided and installed as part of Package HV-3.

REFERENCE STANDARDS

AGA American Gas Association
ANSI Z83.4 Direct Gas Fired Makeup Air Heaters
GAMA Gas Appliance Manufacturers Association
NEC National Electrical Code

WARRANTY

Direct fired make-up air units warranted for 12 months from date of startup.

PART 2 - PRODUCTS

DIRECT FIRED MAKE-UP AIR UNITS

Manufacturers: Greenheck, Hastings, Reznor, Rupp, Sterling, Trane or Weather-Rite.

AGA certified for use with propane gas.

Entire unit shall be ETL Certified per ANSI Z83.4 or ANSI Z83.18 and bear an ETL mark.

Outdoor units cabinet constructed of 18 gauge aluminized steel with enamel finish or 18 gauge galvanized steel. Gasketed access panels and doors for access to all components including blower, burner and electrical components. All seams to be foam taped or caulked to prevent moisture from entering the unit. Provide a weather hood constructed of 16 gauge galvanized steel with galvanized bird screen.

Insulate cabinet with 1" thick foil faced fiberglass. Comply with NFPA 90A and NFPA 90B and erosion requirements of UL 181

Service receptacle: 120 VAC GFCI service outlet shall be factory-provided for field installation.

Provide centrifugal forward curved fan with statically and dynamically balanced wheels and one piece through shaft and heavy duty sealed ball bearings with extended grease fittings. Ratings are to be established in accordance with AMCA 210, "Laboratory Methods of Testing Fans for Rating".

Fan shall be isolated from unit with vibration isolators and flexible connectors to prevent vibration from transmitting to the building.

Motors shall be open drip proof with adjustable belt drives.

Shall be equipped for operation on LP gas with a maximum rated inlet gas pressure of 1/2 PSI. A gas pressure regulator shall be supplied by the manufacturer to reduce the gas pressure to the pressure required for the make-up air unit.

Verify inlet pressure requirement and available inlet LP gas pressure from the owner provided LP gas supply.

Modulating type direct fired burner shall be constructed of cast iron gas manifold connected to stainless steel mixing plates, turndown ratio of 25:1.

Furnace shall be assembled, piped, and wired direct gas-fired system of 92% efficiency with a draw through design and field adjustable burner baffles with a direct spark ignition system.

- 1 AGA certified gas controls, meeting FM requirements and meeting IRI requirements including flame
2 safeguard relay with flame sensor, high & low gas pressure switches, intermittent spark or hot surface
3 ignition system, manual main shut-off valve, electronic modulating gas valve, pilot controls, electric safety
4 shut-off valve, main and pilot gas regulators suitable for inlet pressure indicated on the drawings.
5
- 6 Control panel / connections: Unit shall have an electrical control center where all high and low voltage
7 connections are made. Control center shall be constructed to permit single-point high voltage power supply
8 connections.
9
- 10 Provide complete with the following electric controls as noted in the schedule on the drawings. Factory
11 installed motor starter with auxiliary contacts, control transformer, high temperature limit switch, low
12 outlet temperature shut-off, high and low flow proving switches, automatic mild weather burner lockout.
13 Contain all electrical in a NEMA 1 control box with fused disconnect.
14
- 15 Refer to Sections 23 09 93 for temperature control sequence.
16
- 17 Provide filter section with 2" thick, MERV 8 throwaway filters. Provide dirty filter switch with indicating
18 light. Filter section to be low velocity V-bank type.
19
- 20 Provide units complete with the following accessories:
21 Intake shut-off damper with motor and end switch.
22 Outside air inlet hood with screened inlet.
23
24
25

26 **PART 3 - EXECUTION**

27 **INSTALLATION**

- 28 Install units as shown on plans, as detailed and according to the manufacturer's installation instructions.
29
30 manufacturer's instructions.
31
32
- 33 **MAKE -UP AIR UNITS**
- 34 Install on concrete pad provided by the HV contractor under this section, elevated on a steel stand as
35 indicated on the drawings. Exterior slab on grade concrete pad shall comply with Division 3, Cast-In-Place
36 Concrete.
37
- 38 Install per the manufacturer's written instructions and in compliance with applicable codes.
39
40
- 41 Make supply duct connection and run duct to inside building
42
43

44 **END OF SECTION**
45