



CONSTRUCTION DOCUMENTS PROJECT MANUAL

**RFB NO.
320013(Rebid)**

DANE COUNTY DEPARTMENT OF ADMINISTRATION

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

**REQUEST FOR BIDS NO. 320013(REBID)
FEN OAK GREENHOUSE
LYMAN F. ANDERSON AGRICULTURE & CONSERVATION CENTER
5201 FEN OAK DRIVE
MADISON, WISCONSIN**

ISSUED FOR BIDS: 03/01/2022

Due Date / Time: **TUESDAY, APRIL 12, 2022 / 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:

RYAN SHORE, PROJECT MANAGER
TELEPHONE NO.: 608/445-0109
FAX NO.: 608/267-1533
E-MAIL: SHORE@COUNTYOFDANE.COM

SECTION 00 01 10

TABLE OF CONTENTS

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

- 00 01 01 - Project Manual Cover Page
- 00 01 10 - Table of Contents
- 00 11 16 - Invitation to Bid
- 00 21 13 - Instructions to Bidders
- 00 41 13 - Bid Form
- 00 43 36 - Subcontractor Form
- 00 52 96 - Sample Public Works Construction Contract
- 00 61 12 - Sample Bid Bond
- 00 61 13.13 - Sample Performance Bond
- 00 61 13.16 - Sample Payment Bond
- 00 72 13 - General Conditions of Contract
- 00 73 00 - Supplementary Conditions
- 00 73 11 - Fair Labor Practices Certification

DIVISION 01 - GENERAL REQUIREMENTS

- 01 00 00 - General Requirements
- 01 74 19 - Construction Waste Management, Disposal & Recycling

DIVISION 26 - ELECTRICAL

- 22 00 00 - Plumbing
- 23 11 00 - Facility Fuel Piping
- 26 05 00 - General Electrical Requirements

EQUIPMENT SPEC SHEETS

- Inlet Shutters
- Exhaust Shutter Fan
- HAF Fan
- Heater
- Thermostat

DRAWINGS

Plot drawings on 8.5" x 11" (ANSI A) paper for correct scale or size.

- Site Plan
- Cover Page
- Framing & Footing Details
- Equipment Plan
- Elevations
- Electrical Plan
- Mechanical Plan
- Typical Sections
- Exhaust Fan Installation
- Fen Oak Power Plan Sheet

END OF SECTION

SECTION 01 11 16

INVITATION TO BID

LEGAL NOTICE

Dane County Department of Administration-Public Works Engr. Division, 1919 Alliant Energy Center Way, Madison, WI 53713, will receive sealed Bids until:

2:00 P.M., TUESDAY, APRIL 12, 2022

RFB NO. 320013(REBID)

FEN OAK GREENHOUSE

LYMAN F. ANDERSON AGRICULTURE & CONSERVATION CENTER

5201 FEN OAK DRIVE, MADISON, WI

Dane County is inviting Bids for construction services to provide a greenhouse. Only firms with capabilities, experience & expertise with similar projects should obtain this Request for Bids (RFB) document & submit Bids.

RFB document may be obtained after **2:00 p.m. on March 1, 2022** by downloading it from bids-pwht.countyofdane.com. Please call Ryan Shore, Project Mgr., at 608/445-0109, or our office at 608/266-4018, for any questions or additional information.

Bidders must be qualified as Best Value Contractor before Bid Due Date / Time. Complete Application at publicworks.countyofdane.com/bvc or call 608/267-0119.

A pre-bid site tour will be held March 30, 2022 at 11:00 a.m. at the Lyman F. Anderson Agriculture & Conservation Center. Bidders are strongly encouraged to attend this tour.

PUBLISH: MARCH 1 & MARCH 8, 2022 - WISCONSIN STATE JOURNAL
MARCH 2 & MARCH 9, 2022 - THE DAILY REPORTER

END OF SECTION

SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

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

1. GENERAL

- A. Before submitting Bid, bidder shall thoroughly examine all Construction Documents. Successful Bidder shall be required to provide all the Work that is shown on Drawings, set forth in Specifications, or reasonably implied as necessary to complete Contract for this project.
- B. Bidder shall visit site to become acquainted with adjacent areas, means of approach to site, conditions of actual site and facilities for delivering, storing, placing, and handling of materials and equipment.
- C. Pre-bid meeting is scheduled on March 30, 2022 at 11:00 a.m., at the Lyman F. Anderson Agriculture & Conservation Center, 5201 Fen Oak Dr., Madison, WI. Attendance by all bidders is optional, however bidders and subcontractors are strongly encouraged to attend.
- D. Failure to visit site or failure to examine any and all Construction Documents will in no way relieve successful Bidder from necessity of furnishing any necessary materials or equipment, or performing any work, that may be required to complete the Work in accordance with Drawings and Specifications. Neglect of above requirements will not be accepted as reason for delay in the Work or additional compensation.

2. DRAWINGS AND SPECIFICATIONS

- A. Drawings and Specifications that form part of this Contract, as stated in Article 1 of General Conditions of Contract, are enumerated in Document Index of these Construction Documents.

- B. Complete sets of Drawings and Specifications for all trades will be available to all Bidders, irrespective of category of work to be bid on, in order that all Bidders may be familiar with work of other trades as they affect their bid.

3. INTERPRETATION

- A. No verbal explanation or instructions will be given in regard to meaning of Drawings or Specifications before Bid Due Date. Bidders shall bring inadequacies, omissions or conflicts to Owner or Architect / Engineer's attention at least ten (10) calendar days before Bid Due Date. Prompt clarification will be available to all bidders by Addendum.
- B. Failure to so request clarification or interpretation of Drawings and Specifications will not relieve successful Bidder of responsibility. Signing of Contract will be considered as implicitly denoting that Contractor has thorough understanding of scope of the Work and comprehension of Construction Documents.
- C. Owner 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. Contractor and subcontractors shall meet all applicable Best Value Contractor requirements.
 - 5. Has record of satisfactorily completing past projects. Criteria which will be considered in determining satisfactory completion of projects by bidder will include:
 - a. Completed contracts in accordance with drawings and specifications.
 - b. Diligently pursued execution of work and completed contracts according to established time schedule unless Owner grants extensions.
 - c. Fulfilled guarantee requirements of construction documents.
 - d. Is not presently on ineligible list maintained by County's Department of Administration for noncompliance with equal employment opportunities and affirmative action requirements.
 - e. Authorized to conduct business in Wisconsin. By submitting Bid, bidder warrants that it has: complied with all necessary requirements to do business in State of Wisconsin; that persons executing contract on its behalf are authorized to do so; and, if corporation, that name and address of bidder's registered agent are as set forth in Contract. Bidder shall notify Owner immediately, in writing, of any change in its registered agent, their address, and bidder's legal status. For partnership, term "registered agent" shall mean general partner.

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

5. BID GUARANTEE

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

6. WITHDRAWAL OF BIDS

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

7. CONTRACT FORM

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

8. CONTRACT INTERESTS BY COUNTY PUBLIC OFFICIALS

- A. In accordance with Wisconsin Statute 946.13, county official may not bid for or enter into any contract involving receipts or disbursements of more than \$15,000.00 in a year, in which they have private pecuniary interest, direct or indirect if at same time they are authorized to

take official action with respect to making of this Contract. Any contract entered into in violation of this Statute is void and County incurs no liability thereon. This subsection does not affect application and enforcement of Wisconsin Statute 946.13 by state prosecutors in criminal courts of this state.

9. EMERGING SMALL BUSINESS PROVISIONS

A. Not Used.

10. METHOD OF AWARD - RESERVATIONS

- A. Following will be basis of award of Contract, providing cost does not exceed amount of funds then estimated by County as available to finance Contract(s):
1. Lowest dollar amount submitted by qualified responsible bidder on Base Bid for all work comprising project, combined with such additive Owner accepted alternates.
 2. Owner reserves right to reject all bids or any bid, to waive any informality in any bid, and to accept any bid that will best serve interests of County.
 3. Unit Prices and Informational Bids will not be considered in establishing low bidder.

11. SECURITY FOR PERFORMANCE AND PAYMENTS

- A. Simultaneous with delivery of signed Contract, Bidder shall be required to furnish Performance and Payment Bonds as specified in Article 29 of General Conditions of Contract, "Contract Security", . Surety Company shall be licensed to do business in Wisconsin. Performance and Payment Bonds must be dated same date or subsequent to date of Contract. Performance and Payment Bonds must emulate information in Sample Performance and Payment Bonds in Construction Documents.
- B. Provide certified copy of power of attorney from Surety Company showing that agent who signs Bond has power of attorney to sign for Surety Company. Secretary or Assistant Secretary of company must sign this certification, not attorney-in-fact. Certification must bear same or later date as Bond. Power of Attorney must emulate model power of attorney information detailed in Sample Performance and Payment Bonds.
- C. If Bidder is partnership or joint venture, State certified list, providing names of individuals constituting partnership or joint venture must be furnished. Contract itself may be signed by one partner of partnership, or one partner of each firm comprising joint venture, but Performance and Payment Bonds must be signed by all partners.
- D. If Bidder is corporation, it is necessary that current certified copy of resolution or other official act of directors of corporation be submitted showing that person who signs Contract is authorized to sign contracts for corporation. It is also necessary that corporate seal be affixed to resolution, contract, and performance and payment bonds. If your corporation has no seal, it is required that above documents include statement or notation to effect that corporation has no seal.

12. TAXES

- A. Wisconsin Statute 77.54 (9m) allows building materials that become part of local unit government facilities to be exempt from sales & use tax. Vendors & materials suppliers may

not charge Bidders sales & use tax on these purchases. This does not include highways, streets or roads. Any other Sales, Consumer, Use & other similar taxes or fees required by law shall be included in Bid.

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

13. SUBMISSION OF BIDS

- A. All Bids shall be submitted on standard Bid Form bound herein and only Bids that are made on this Bid Form will be considered. Entire Bid Form and other supporting documents, if any, shall be removed or copied from Construction Documents, filled out, and submitted in manner specified hereinafter. Submit completed Bid Bond with Bid as well.
- B. No bids for any subdivision or any sub-classification of the 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. Current conditions prevent public bid openings.
- I. Bids hand delivered & dropped off at Public Works' physical address should be placed in the "Public Works Bids & Proposals" drop box placed outside or just inside the building's front vestibule.
- J. Bid will be opened on listed due date & time & results should be available within 24 hours at bids-pwht.countyofdane.com.
- K. Bid will be considered invalid and will be rejected if bidder has not signed it.

- L. Faxed or emailed Bids will not be accepted.
- M. Bidder's organization shall submit completed with Bid, Fair Labor Practices Certification form, included in these Construction Documents.

14. SUBCONTRACTOR LISTING

- A. Bidders are required to submit Section 00 43 36, Proposed Subcontractors Form listing all subcontractors for this project including committed prices for each subcontractor. Project Manager must receive Form no later than when successful Bidder submits their signed Contract. Failure to submit may delay progress payments.

15. ALTERNATE BIDS

- A. Not Applicable.

16. INFORMATIONAL BIDS

- A. Not Applicable.

17. UNIT PRICES

- A. Not Applicable.

18. COMMENCEMENT AND COMPLETION

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

19. WORK BY OWNER

- A. Not Applicable.

20. SPECIAL HAZARDS COVERAGE

- A. Not Applicable.

Name of Bidding Firm: _____

SECTION 00 41 13

BID FORM

BID NO. 320013(REBID)

PROJECT: FEN OAK GREENHOUSE

LYMAN F. ANDERSON AGRICULTURE & CONSERVATION CENTER

**TO: DANE COUNTY PUBLIC WORKS ENGINEERING DIVISION
PROJECT MANAGER
1919 ALLIANT ENERGY CENTER WAY
MADISON, WISCONSIN 53713**

NOTE: WISCONSIN STATUTE 77.54 (9M) ALLOWS FOR NO SALES & USE TAX ON THE PURCHASE OF MATERIALS FOR COUNTY PUBLIC WORKS PROJECTS. THIS DOES NOT APPLY TO HIGHWAYS, STREETS AND ROADS PROJECTS.

BASE BID - LUMP SUM:

Dane County is inviting Bids for construction services to provide a greenhouse with water supply, electrical, heating and exhaust fans as detailed in the construction documents. The undersigned, having examined the site where the Work is to be executed and having become familiar with local conditions affecting the cost of the Work and having carefully examined the Drawings and Specifications, all other Construction Documents and Addenda thereto prepared by Dane County Public Works Engineering Division hereby agrees to provide all labor, materials, equipment and services necessary for the complete and satisfactory execution of the entire Work, as specified in the Construction Documents, for the Base Bid stipulated sum of:

_____ and __/100 Dollars
Written Price

\$ _____
Numeric Price

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

Addendum No(s). _____ through _____

Dated _____

Dane County UW Extension must have this project completed by December 2, 2022. Assuming this Work can be started by June 6, 2022, 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 is qualified as a Best Value Contractor or has proven their exemption. Qualification or exemption shall be complete before Bid Due Date / Time.

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

SIGNATURE: _____
(Bid is invalid without signature)

Print Name: _____ Date: _____

Title: _____

Address: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

Contact Person: _____

END OF SECTION

THIS PAGE IS FOR BIDDERS' REFERENCE
DO NOT SUBMIT WITH BID FORM.

BID CHECK LIST:

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

Bid Form

Bid Bond

Proposed Subcontractors Form

Fair Labor Practices Certification

DANE COUNTY BEST VALUE CONTRACTING QUALIFICATION

General Contractors & all Subcontractors must be qualified as a Best Value Contractor with the Dane County Public Works Engineering Division. Qualification & listing is not permanent & must be renewed every 36 months. Complete a *Best Value Contracting Application* online at:

publicworks.countyofdane.com/bvc

DANE COUNTY VENDOR REGISTRATION PROGRAM

All bidders are strongly encouraged to be a registered vendor with Dane County. Registering allows vendors an opportunity to receive notifications for RFBs & RFPs issued by the County and provides the County with up-to-date company contact information. Complete a new form or renewal online at:

danepurchasing.com/Account/Login?

SECTION 00 43 36

PROPOSED SUBCONTRACTORS FORM

General Contractor Name: _____ Bid No: _____

Instructions:

1. Complete all information in table below.
2. Include this Form with signed Construction Contract (Section 00 52 96).
3. General contractors & subcontractors must be qualified & registered as Best Value Contractor (Dane County Ordinances, Chapter 40.07). General contractors must be qualified & registered before bids are due. Subcontractors must be qualified & registered 10 working days before performing any work related to Construction Contract. No contractor can perform work without being qualified & registered.
4. Sample Best Value Contracting Application is included in this RFB package for informational purposes; fill out form online (publicworks.countyofdane.com/bvc).

SUBCONTRACTOR NAME	ADDRESS & PHONENO.	DIVISION OF WORK	\$\$ AMOUNT OF CONTRACT

Check box if there is another form page attached to include additional subcontractors.

The undersigned, for and on behalf of the General Contractor named herein, certifies the information on this Form is accurate.

Officer or Authorized Agent Signature

Date

Printed or Typed Name and Title

COUNTY OF DANE

PUBLIC WORKS CONSTRUCTION CONTRACT

Contract No. _____ Bid No. 320013(Rebid)

Authority: 2022 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 Public Works Director, 1919 Alliant Energy Center Way, Madison, WI 53713, desires to have CONTRACTOR provide construction of the Fen Oak Greenhouse at Lyman F. Anderson Agriculture and Conservation Center, 5201 Fen Oak Drive, Madison, WI ("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 Dane County (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. The term of this Contract shall commence when fully executed by the parties. The CONTRACTOR shall commence the Work by _____. The Work's substantial completion date shall be _____. Failure to meet commence work or substantial completion dates on the Work as set forth herein is grounds for termination of the Contract and other remedies as set forth in the General Conditions of Contract incorporated herein.

3. 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.

4. 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.

5. CONTRACTOR shall file an Affirmative Action Plan with the Dane County Contract Compliance Specialist in accord with Chapter 19 of the Dane County Code of Ordinances. CONTRACTOR must file such plan within fifteen (15) business days of the effective date of this Contract. During the term of this Contract CONTRACTOR shall also provide copies of all announcements of employment opportunities to COUNTY'S Office of Equity & Inclusion, 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.

6. 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".

7. CONTRACTOR agrees to furnish all information and reports required by COUNTY'S Contract Compliance Specialist 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. The intent of this Contract is to be a Contract solely between the parties hereto and for their benefit only. Do not construe any part of this Contract 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 the parties.

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

10. CONTRACTOR must be qualified as a Best Value Contractor or have proven their exemption with Dane County Public Works Engineering Division before Bid Due Date / Time. All contractors and subcontractors must be qualified as a Best Value Contractor or have proven their exemption to perform any work under this Contract.

11. This Contract, and any amendment or addendum relating to it, may be executed and transmitted to any other party by legible facsimile reproduction or by scanned legible electronic PDF copy, and utilized in all respects as, an original, wet-inked manually executed document. Further, this Contract and any amendment or addendum thereto, may be stored and reproduced by each party electronically, photographically, by photocopy or other similar process, and each party may at its option destroy any original document so reproduced. All parties hereto stipulate that any such legible reproduction shall be admissible in evidence as the original itself in any judicial, arbitration or administrative proceeding whether or not the original is in existence and whether or

not each party made such reproduction in the regular course of business. This term does not apply to the service of notices 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:

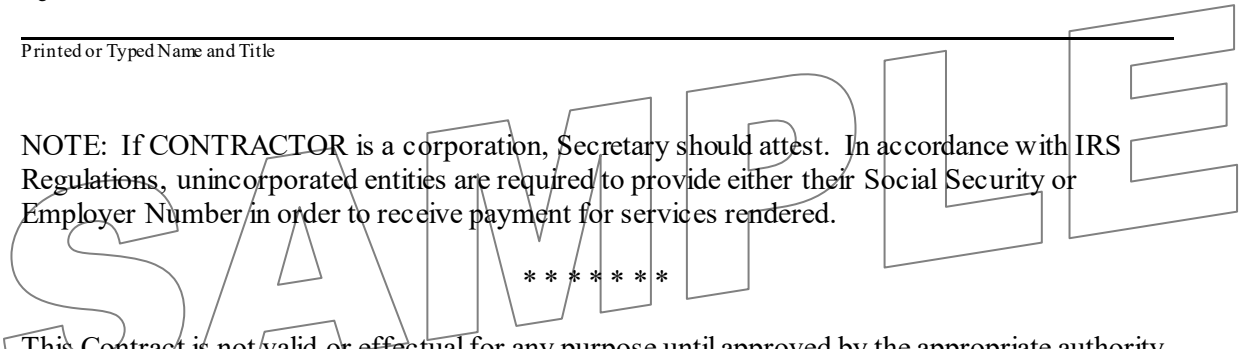
Signature Date

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 Public Works Director.

FOR COUNTY:

Joseph T. Parisi, County Executive Date

Scott McDonell, County Clerk Date

AIA[®] Document A310[™] – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

BOND AMOUNT:**PROJECT:**

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

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

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

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

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

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this _____ day of _____

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

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

AIA[®] Document A312[™] – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

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

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

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

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: None See Section 16

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

SURETY

Company: *(Corporate Seal)*

Signature: _____

Name _____
and Title: _____

Signature: _____

Name _____
and Title: _____

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

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

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

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

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

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

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

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

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

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

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

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

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

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

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

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

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

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

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

§ 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

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

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

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

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

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

§ 16 Modifications to this bond are as follows:

Sample

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

CONTRACTOR AS PRINCIPAL

SURETY

Company: _____

(Corporate Seal)

Company: _____

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.



AIA® Document A312™ – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

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

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

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

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

SURETY

Company: *(Corporate Seal)*

Signature: _____

Name _____
and Title: _____

Signature: _____

Name _____
and Title: _____

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

(FOR INFORMATION ONLY — Name, address and telephone)

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

(Architect, Engineer or other party:)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

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

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

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

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

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

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

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

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

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

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

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

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

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

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

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

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

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

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

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

§ 16 Definitions

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

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

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

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

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

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

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

§ 18 Modifications to this bond are as follows:

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

CONTRACTOR AS PRINCIPAL

Company: _____

(Corporate Seal)

SURETY

Company: _____

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

SECTION 00 72 12

GENERAL CONDITIONS OF CONTRACT

TABLE OF CONTENTS

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

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 Administration - Public Works Engineering Division, 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.

- C. Contractor & subcontractors shall follow all current *Public Health - Madison & Dane County* procedures & recommendations including the mandatory use of face masks while inside any County facility. County Project Manager shall clarify these procedures & recommendations at pre-construction meeting.

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 does not need to pay State and local sales & use taxes on building materials that become part of local unit government facilities. See Wisconsin Statute 77.54 (9m). This does not include materials for highways, streets or roads. Contractor shall pay any other Sales, Consumer, Use & other similar taxes or fees 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 when Contractor is authorized in writing by Public Works Project Manager to proceed.

19. EXTRAS

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

20. TIME FOR COMPLETION

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

21. CORRECTION OF WORK

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

22. SUBSURFACE CONDITIONS FOUND DIFFERENT

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

23. RIGHT OF DEPARTMENT TO TERMINATE CONTRACT

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

24. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

- A. Contractor shall be responsible for Construction Schedule and coordination. Immediately after execution and delivery of Contract and before making first payment, Contractor shall notify all subcontractors to furnish all required information to develop Construction Schedule. Contractor and all subcontractors associated with the Work shall furnish following information from each Division of Specifications:
1. List of construction activities;
 2. Start, finish and time required for completion of each activity;
 3. Sequential relationships between activities;
 4. Identify all long lead-time items, key events, meetings or activities such as required submittals, fabrication and delivery, procurement of materials, installation and testing;
 5. Weekly definition of extent of work and areas of activity for each trade or Subcontract; and
 6. Other information as determined by Public Works Project Manager.
- B. In addition to above requested items, Contractor shall request delivery dates for all County-furnished equipment, materials or labor. This shall include any work handled by Department under separate contracts such as asbestos abatement, air and water balancing, etc. Indicate on Construction Schedule these associated delivery and installation dates.
- C. Progress Reporting:

1. Contractor shall update and publish Construction Schedule on monthly basis. Revisions to Schedule shall be by Contractor and made in same detail as original Schedule and accompanied by explanation of reasons for revision; and shall be subject to approval by Department.
 2. Failure of Contractor to keep Schedule in updated format shall result in County hiring firm specializing in construction schedule development and deducting those costs associated with updating process from payments due Contractor.
 3. Contractor shall submit show actual percentage of each activity completed, estimated future progress, and anticipated completion time.
- D. Responsibility for timely completion requires:
1. Contractor and subcontractors understand that performance of each is interdependent upon performance of others.
 2. Whenever it becomes apparent from current schedule, that phasing or progress completion dates will not be met, Contractor must take some or all following actions at no additional cost to County:
 - a) Increase construction labor in such quantities and crafts as will eliminate backlog of work.
 - b) Increase number of working hours per shift, shifts per working day, working days per week, amount of construction equipment, or any combination of foregoing to eliminate backlog of work.
 - c) Reschedule work (yet remain in conformance with Drawings and Specifications).
 3. Prior to proceeding with any of above actions, Contractor shall notify Public Works Project Manager.
- E. Maintain current Construction Schedule at all times. Revise Construction Schedule in same detail as original and accompany with explanation of reasons for revision. Schedule shall be subject to approval by Architect / Engineer and Public Works Project Manager.

25. PAYMENTS TO CONTRACTOR

- A. Contractor shall provide:
1. Detailed estimate giving complete breakdown of contract price by Specification Division; and
 2. Periodic itemized estimates of work done for purpose of making partial payments thereon.
- B. Submit these estimates for approval first to Architect / Engineer, then to Public Works Project Manager. Costs employed in making up any of these schedules are for determining basis of partial payments and not considered as fixing basis for additions to or deductions from Contract price.
- C. County will make partial payments to Contractor for value, proportionate to amount of Contract, of all labor and material incorporated in the Work during preceding calendar month upon receipt of Application and Certificate for Payment form from Architect / Engineer and approval of Department.
- D. Contractor shall submit for approval first to Architect / Engineer, and then to Public Works Project Manager all Application and Certificate for Payment forms. If requested, Application and Certificate for Payment shall be supported by such additional evidence as may be required, showing Contractor's right to payment claimed.

- E. Application and Certificate for Payment for preparatory work and materials delivered and suitably stored at site to be incorporated into the Work at some future period, will be given due consideration. Requesting payment for materials stored off site, may be rejected, however, if deemed essential for reasons of job progress, protection, or other sufficient cause, requests will be considered, conditional upon submission by Contractor of bills of sale, photographs and such other procedures as will adequately protect County's interest such as storage in bonded warehouse with adequate coverage. If there is any error in payment, Contractor is obligated to notify Department immediately, but no longer than ten (10) business days from receipt of payment.
- F. Payments by County will be due within forty-five (45) business days after receipt by Department of Application and Certificate for Payment.
- G. County will retain five percent (5%) of each Application and Certificate for Payment until final completion and acceptance of all the Work covered by Contract. However, anytime after fifty percent (50%) of the Work has been furnished and installed at site, County will make remaining payments in full if Architect / Engineer and Public Works Project Manager find that progress of the Work corresponds with Construction Schedule. If Architect / Engineer and Public Works Project Manager find that progress of the Work does not correspond with Construction Schedule, County may retain up to ten percent (10%) of each Application and Certificate for Payment for the Work completed.
- H. All material and work covered by partial payments made shall become sole property of County, but this provision shall not be construed as relieving Contractor from sole responsibility for care and protection of materials and work upon which payments have been made, or restoration of any damaged work, or as waiver of right of County to require fulfillment of all of terms of Contract.
- I. County will make final payment within sixty (60) calendar days after final completion of the Work, and will constitute acceptance thereof.
- 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 Administration - Public Works Engineering Division 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.

26. WITHHOLDING OF PAYMENTS

- A. County, after having served written notice on said Contractor, may either pay directly any unpaid bills of which Department has written notice, or withhold from Contractor's unpaid compensation sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged; whereupon, payment to Contractor shall be resumed in accordance with terms of this Contract, but in no event shall these provisions be construed to impose any obligations upon County to either Contractor or Contractor's Surety.
- B. In paying any unpaid bills of Contractor, County shall be deemed agent of Contractor, and any payment so made by County, shall be considered as payment made under Contract by

County to Contractor and County shall not be liable to Contractor for any such payment made in good faith.

- C. Contractor shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives from all claims growing out of lawful demands of subcontractors, laborers, workers, mechanics, material men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in performance of this Contract.
- D. At Department's request, Contractor shall furnish satisfactory evidence that all obligations of nature designated above have been paid, discharged or waived.

27. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

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

28. PAYMENTS BY CONTRACTOR

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

29. CONTRACT SECURITY

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

30. ASSIGNMENTS

- A. Contractor shall not assign whole or any part of this Contract or any moneys due or to become due hereunder without written consent of Department. In case Contractor assigns all or any part of any moneys due or to become due under this Contract, instrument of assignment shall contain clause substantially to effect that it is agreed that right of assignee in and to any moneys due or to become due to Contractor shall be subject to prior claims of all

persons, firms and corporations for services rendered or materials supplied for performance of the Work called for in this Contract.

31. MUTUAL RESPONSIBILITY OF CONTRACTORS

- A. If, through acts of neglect on part of Contractor or any subcontractor shall suffer loss or damage on the Work, Contractor agrees to settle with such subcontractor by agreement or arbitration if such other subcontractor will so settle. If such subcontractor shall assert any claim against County on account of any damage alleged to have been sustained, Department shall notify Contractor, who shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives against any such claim.

32. SEPARATE CONTRACTS

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

33. SUBCONTRACTS

- A. Contractor may use services of specialty subcontractors on those parts of the Work that, under normal contracting practices, are performed by specialty subcontractors.
- B. Contractor shall not award any work to any subcontractor without prior approval of Department. Qualifications of subcontractors shall be same as qualifications of Contractor. Request for subcontractor approval shall be submitted to Department fifteen (15) business days before start of subcontractor's work. If subcontractors are changed or added, Contractor shall notify Department in writing.
- C. Contractor shall be as fully responsible to County for acts and omissions of subcontractors, and of persons either directly or indirectly employed by them, as Contractor is for acts and omissions of persons directly employed by Contractor.
- D. Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind subcontractors to Contractor by terms of General Conditions of Contract and other Construction Documents insofar as applicable to work of subcontractors and to give Contractor same power as regards terminating any subcontract that Department may exercise over Contractor under any provision of Construction Documents.
- E. Nothing contained in this Contract shall create any contractual relation between any subcontractor and County.

- F. Contractor shall insert in all subcontracts, Articles 26, 33, 43 and 45, respectively entitled: “Withholding of Payments”, “Subcontracts”, “Affirmative Action Provision and Minority / Women / Disadvantaged Business Enterprises”, and “Minimum Wages”, and shall further require all subcontractors to incorporate physically these same Articles in all subcontracts.

34. 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. CONSULTANT’S AUTHORITY

- A. Engineer, Consultant is retained by, and is responsible to Department acting for County.
- B. Engineer, Consultant shall determine amount, quality, acceptability, and fitness of several kinds of work and materials that are provided under this Contract and shall decide all questions that may arise in relation to said work and construction thereof.
- C. Engineer, Consultant shall decide meaning and intent of any portion of Specifications and of any Drawings where they may be found obscure or be in dispute.
- D. Engineer, Consultant 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. Engineer, Consultant shall be interpreter of conditions of Construction Documents and judge of its performance.
- F. Within reasonable time, Engineer, Consultant shall make decisions on all matters relating to progress of the Work or interpretation of Construction Documents.
- G. Engineer’s, Consultant’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 Engineer’s, Consultant’s 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 twenty (20) or more employees and receives \$20,000.00 or more in annual aggregate contracts with County. Contractor shall file and Affirmative Action Plan with Dane County Contract Compliance Specialist in accord with Chapter 19 of Dane County Code of Ordinances. Such plan must be filed within fifteen (15) business days of effective date of this Contract and failure to do so by said date shall constitute ground for immediate termination of Contract by County. Contractor shall also, during term of this Contract, provide copies of all announcements of employment opportunities to County's Office of Equity & Inclusion, 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 Specialist at Dane County Office of Equity & Inclusion, 210 Martin Luther King, Jr. Blvd., Room 356, Madison, WI 53703, 608/266-4192.
 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 Specialist 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 Specialist, within ten (10) business days, any allegations to, or findings by National Labor Relations Board (NLRB) or Wisconsin Employment Relations Commission (WERC) that Contractor has violated statute or regulation regarding labor standards or relations. If investigation by Contract Compliance Specialist 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 Specialist 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. 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.

46. CLAIMS

- A. No claim may be made until Department's Public Works Director has reviewed Engineer's, Consultant's decision as provided for in Article 35 of General Conditions of Contract. If any claim remains unresolved after such review by Department's 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.

47. 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.

48. 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 subcontractors' insurance policies.
- c) Obligations of Contractor under Article 50.A.2.b) shall not extend to liability of Architect / Engineer, agents or employees thereof, arising out of:
 - 1) Preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications; or
 - 2) Giving of or failure to give directions or instructions by Architect / Engineer, agents or employees thereof provided such giving or failure to give is primary cause of injury or damage.
 - d) Contractor shall procure and shall maintain during life of this Contract, Comprehensive Automobile Liability Insurance covering owned, non-owned and hired automobiles for limits of not less than \$1,000,000 each accident single limit, bodily injury and property damage combined with excess coverage over and above general liability in amount not less than \$5,000,000.
 - e) Contractor shall either:
 - 1) Require each subcontractor to procure and to maintain during life of subcontract, subcontractor's Public Liability Property Damage Insurance, and Comprehensive Automobile Liability Insurance of type and in same amount specified in preceding paragraphs; or
 - 2) Insure activities of subcontractors in Contractor's own policy.
4. Scope of Insurance and Special Hazards: Insurance required under Article 50.A.2 & 50.A.3. hereof shall provide adequate protection for Contractor and subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operation be by insured or by anyone directly or indirectly employed by insured and also against any of special hazards which may be encountered in performance of this Contract as enumerated in Supplementary Conditions.
5. Proof of Carriage of Insurance: Contractor shall furnish Risk Manager with certificates showing type, amount, class of operations covered, effective dates, dates of expiration of policies and "Dane County" listed as additional insured. Such certificates shall also contain (substantially) following statement: "Insurance covered by this certificate will not be canceled or materially altered, except after ten (10) business days written notice has been received by Risk Manager."

B. Builder's Risk:

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

C. Indemnification / Hold Harmless:

1. Contractor shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from performance of the Work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom, and is caused in whole or in part by any act or omission of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by part indemnified hereunder.

2. In any and all claims against Dane County, its boards, commissions, agencies, officers, employees and representatives or by any employee of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, indemnification obligation under this Contract shall not be limited in any way by any limitation on amount or type of damages, compensation or benefits payable by or for Contractor or any subcontractor under worker's compensation acts, disability benefits or other employee benefit acts.
3. Obligations of Contractor under this Contract shall not extend to liability of Architect / Engineer, its agents or employees arising out of:
 - a) Preparation or approval of maps, drawings, opinion, reports, surveys, change orders, designs or specifications; or
 - b) Giving of or failure to give directions or instruction by Architect / Engineer, its agents or employees provided such giving or failure to give is primary cause of injury or damage.
4. Dane County shall not be liable to Contractor for damages or delays resulting from work by third parties or by injunctions or other restraining orders obtained by third parties.

49. 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.


END OF SECTION

SECTION 00 73 00

SUPPLEMENTARY CONDITIONS

1. APPLICATION & CERTIFICATE FOR PAYMENT

- A. Every contractor engaged in performance of any contract for Public Works Engineering Division 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. AIA Document G703™, Continuation Sheet, is attached.

1. ORIGINAL CONTRACT SUM \$ _____

2. NET CHANGE BY CHANGE ORDERS \$ _____

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

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

5. RETAINAGE:

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

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

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

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

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

8. CURRENT PAYMENT DUE \$ _____

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

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

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

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

Notary Public:
My commission expires: _____

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

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

ARCHITECT:
By: _____ Date: _____

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

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

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AIA[®] Document G703™ – 1992

Continuation Sheet

AIA Document G703™-1992, Application and Certificate for Payment, or G732™-2009, Application and Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached. In tabulations below, amounts are in US dollars. Use Column I on Contracts where variable retainage for line items may apply.

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

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

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

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10-1040544

SUBMITTAL

SECTION 00 73 00

BEST VALUE CONTRACTING

1. CONTRACTORS / LICENSURE APPLICANTS

The Dane County Public Works Engineering Division requires contractors & subcontractors to be a Best Value Contractor (BVC) before being hired. Contractor & subcontractor application documents should be turned in immediately. Contractor approval or exemption must be complete prior to Bid Due Date / Time. All subcontractors must also be approved or prove their exemption ten (10) business or more days before performing any work under a County contract. Complete & properly execute this document, 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 qualification status will retain that status for a period of three (3) years from the date of qualification. Contractors shall notify the Dane County Public Works Engineering Division within fifteen (15) days of any changes to its business or operations that are relevant to the application or status. Failure to do so could result in suspension, revocation of the contractor's 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: <https://dwd.wisconsin.gov/apprenticeship/>.

Fill out the BVC Application at the Public Works Engineering Division web site (publicworks.countyofdane.com/bvc). This document is in the RFB for reference only. The following page shows what the questions are on the application.

2. EXEMPTIONS TO QUALIFICATION

Contractors performing work that does not apply to an apprenticeable trade, as outlined in Item 4. Apprenticeable Trades, is the only reason for claiming an exemption if not an active Wisconsin Trades Trainer. See Question 18A.

3. APPLICATION QUESTIONS

NO.	PROOF OF RESPONSIBILITY	CHECK IF APPLICABLE
1	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 qualified with the County or become so ten (10) or more days before beginning any work?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
2	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, qualified subcontractors?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
3	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"/>

4	Will your firm meet all bonding requirements as required by applicable law or contract specifications?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
5	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"/>
6	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"/>
7	Will your employees who will perform work on a Public Works project all be covered under a current workers compensation policy and be properly classified under such policy?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
8	Will your employees who will perform work on a Public Works project have the opportunity to enroll in minimum essential coverage and not be subject to an enrollment period of more than 60 days per the federal Affordable Care Act, Sec. 1513?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
9	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"/>
10	Has your firm been the subject of any order or judgement from any State or Federal Agency or court concerning employment practice, including but not limited to: classification of employees under state unemployment or workers compensation laws; minimum wage, overtime pay, recordkeeping, and child labor standards imposed by federal or state law; and employment discrimination or unfair labor practices prohibited by federal or state law. (Attach copies of any order or judgement)	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
11	Is your firm authorized or registered to transact business in the state by the Department of Financial Institutions in compliance with Wis. Stat. Chaps. 178, 179, 180, 181, or 183?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
12	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, attach a statement explaining the nature of the firm relationship.	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
13	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.
14	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.
15	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.
16	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.
17	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.
18	Does the Wisconsin Bureau of Apprenticeship Standards determine your firm an active Wisconsin Trade Trainer as?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.

18A	Is your firm claiming an exemption to qualification?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
19	Has Contractor been in business less than one year?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>

4. APPRENTICEABLE TRADES:

- Bricklayer
- Boilermaker
- 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

END OF SECTION

SECTION 00 73 11

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 a submitted a bid, application or proposal for a contract or agreement with the county of Dane.

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

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

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

Officer or Authorized Agent Signature

Date

Printed or Typed Name and Title

Printed or Typed Business Name

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

For reference, Dane County Ordinance 25.09 is as follows:

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

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

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

END OF SECTION

SECTION 01 00 00

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

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

40. 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 services for the construction of a greenhouse
- 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. Provide Public Works Project Manager with copies of all permits.
- D. Diggers Hotline:
 - 1. It is General Contractor's responsibility to contact Diggers Hotline to have all utility locations marked prior to excavation and planning excavation so as not to delay the Work.
 - 2. Use Diggers Hotline to obtain information on safe working clearances from overhead lines.
 - 3. Completely comply with all requirements of each affected utility company.
 - 4. It is General Contractor's responsibility to contact & hire private utility locating services if necessary.

1.3 CONTRACTOR USE OF PREMISES

- A. Limit use of premises to allow work by Contractors or Subcontractors and access by Owner.
- B. Coordinate utility outages and shutdowns with Owner.
- C. Contractors or Subcontractors shall not visit the site if they are or have recently been ill.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit each Application for Payment on AIA G702™ and G703™ forms or approved contractors invoice form. Contractor shall have these forms notarized and signed.
- 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 Public Works Project Manager for approval & processing for payment.

1.5 CHANGE PROCEDURES

- A. Contractor's costs for Products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from contingency allowance.

1.6 ALTERNATES

- A. Owner shall review and accept or reject alternates quoted on Bid Form.
- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates: there are no alternates proposed for this project.

1.7 LUMP SUM ALLOWANCES FOR WORK

- A. Not Used.

1.8 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 indicated diagrammatically on Drawings.
- D. Contractor shall provide Public Works Project Manager with work plan that ensures the Work's completion within required time & schedule.
- E. Public Works Project Manager may choose to photograph or videotape site or workers as the Work progresses.

1.9 CUTTING AND PATCHING

- A. Employ 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.

1.10 CONFERENCES

- A. Project shall have pre-bid conference; see Instructions to Bidders.
- B. Owner will schedule preconstruction conference after Award of Contract for all affected parties.
- C. Contractor shall submit Construction Schedule at pre-construction meeting.
- D. When required in individual Specification section, convene pre-installation conference at project site prior to commencing work of Section.

1.11 PROGRESS MEETINGS

- A. Day & time of progress meetings to be determined at pre-construction meeting.
- B. General Contractor shall schedule and administer meetings throughout progress of the Work at minimum of one (1) per week, at time tbd with Public Works Project Manager, involved Dane County staff & other individuals as required.
- C. General Contractor shall preside at meetings, record minutes, and distribute copies within two (2) business days to those attending & those affected by decisions made.
- D. Attendance at progress meetings by General Contractor, subcontractors, or their authorized representative, is mandatory.
- E. Contractors shall give verbal reports of progress on the Work, discuss schedule for upcoming period and present all conflicts, discrepancies or other difficulties for resolution.
- F. In-person meetings shall be limited & shall follow current *Public Health - Madison & Dane County* procedures & recommendations (see publichealthmdc.com/documents/office_space_checklist.pdf and publichealthmdc.com/coronavirus/forward-dane/current-order). Contractor or consultant shall host & hold meetings via teleconference or videoconference, whenever possible. Dane County reserves right to mandate safe physical distancing & use of facemasks by all personnel while inside any County facility or on any County grounds.

1.12 JOB SITE ADMINISTRATION

- A. Contractor shall have project superintendent on site minimum of four (4) hours per day during progress of the Work.
- B. Contractor shall not change their project superintendent or project manager for duration of the Work without written permission of Public Works Project Manager.

1.13 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.

1.14 PROPOSED PRODUCTS LIST

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

1.15 SHOP DRAWINGS

- A. Submit number of copies that Contractor & Architect / Engineer require, plus one (1) copy for Public Works Project Manager to retain.

1.16 PRODUCT DATA

- A. Submit number of copies that Contractor requires, plus one (1) copy for Public Works Project Manager to retain.
- 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.

1.17 SAMPLES

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

1.18 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.

1.19 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.

1.20 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.

1.21 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.

1.22 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.

1.23 PROTECTION OF INSTALLED WORK

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

1.24 PARKING

- A. Parking shall be available at the Work site.
- B. All Contractors and their employees shall cooperate with General Contractor and others in parking of vehicles to avoid interference with normal operations and construction activities.
- C. Do not obstruct existing service drives and parking lots with equipment or materials.

1.25 STAGING AREAS

- A. Coordinate staging areas with Public Works Project Manager prior to starting the Work.
- B. On-site space for use as staging areas and storage of materials is limited and will be apportioned among various Contractors as their needs dictate with due regard for storage requirements of each Contractor. Each Contractor shall be responsible for safety of equipment and materials that are stored on site.

1.26 OCCUPANCY DURING CONSTRUCTION AND CONDUCT OF WORK

- A. All construction material and salvage material shall be removed from facility or secured at day's end.
- B. Contractors are asked to not work at facility if they are ill with something contagious.
- C. All Contractors are expected to leave work areas in conditions; such that area can be occupied immediately upon leaving area.
- D. All Dane County property prohibits smoking.
- E. Areas of existing facility may be occupied during period when the Work is in progress. Work may be done during normal business hours (7:00 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.
- F. Contractor shall, at all times, provide approved, safe walkways and facility entrances for use by Owner, employees and public.
- G. Contractor shall provide adequate protection for all parts of facility, its contents and occupants wherever the Work under this Contract is to be performed.
- H. Each Contractor shall arrange with Owner to make necessary alterations, do new work, make connections to all utilities, etc., and at such times as will not cause interruption of utility services to facility. Contractor doing this work shall protect, cap, cut off and / or replace and relocate existing pipes, electrical work and other active utilities encountered which may interfere with new construction work.
- I. New work in extension of existing work shall correspond in all respects with that to which it connects or similar existing work unless otherwise indicated or specified.
 - 1. Existing work shall be cut, altered, removed or replaced as necessary for performance of Contract obligations.
 - 2. Work remaining in place, damaged or defaced by reason of work done under this Contract shall be restored equal to its condition at time of Award of Contract.

3. If removal of work exposes discolored or unfinished surfaces or work out of alignment, such surfaces shall be refinished or materials replaced as necessary to make continuous work uniform and harmonious.
- J. Contractor is not responsible for providing & maintaining temporary toilet facilities.
- K. Owner reserves right at any time to dismiss from premises any Contractor or construction personnel that do not uphold requirements of this Section.
- L. Owner shall not be held liable for any lost time, wages, or impacts to construction schedule by any Contractor or construction personnel dismissed for failure to uphold requirements of this Section.
- M. Contractor & Subcontractors shall follow all current *Public Health - Madison & Dane County* procedures & recommendations (see publichealthmdc.com/documents/office_space_checklist.pdf and publichealthmdc.com/coronavirus/forward-dane/current-order). Dane County reserves right to mandate safe physical distancing & use of facemasks by all personnel while inside any County facility or on any County grounds.

1.27 PROTECTION

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

1.28 PROGRESS CLEANING

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

1.29 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.

1.30 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

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

1.31 PRODUCT OPTIONS

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

1.32 SUBSTITUTIONS

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

1.33 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.

1.34 DEMONSTRATION AND INSTRUCTIONS

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

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

1.35 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.

1.36 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.

1.37 ADJUSTING

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

1.38 OPERATION AND MAINTENANCE MANUAL

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

1.39 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.

1.40 AS-BUILT AND RECORD DRAWINGS AND SPECIFICATIONS

- A. Contractor-produced Drawings and Specifications shall remain property of Contractor whether Project for which they are made is executed or not. Contractor shall furnish Public Works Project Manager with original marked up redlines of Construction Documents' drawings and specifications that shall include all Addendums, Change Orders, Construction Bulletins, Field Directives, on-site changes, field corrections, etc. These are project As-Built Drawings & Specifications.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT, DISPOSAL & RECYCLING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Summary
 - 2. Waste Management Goals
 - 3. Construction and / or Demolition Waste Management
 - 4. Waste Management Plan
 - 5. Reuse
 - 6. Recycling
 - 7. Materials Sorting and Storage On Site
 - 8. Lists of Recycling Facilities Processors and Haulers
 - 9. Waste Management Plan Form
- B. Related Sections:
 - 1. Section 01 00 00 - General Requirements

1.2 WASTE MANAGEMENT GOALS

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

1.3 CONSTRUCTION AND / OR DEMOLITION WASTE MANAGEMENT

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

1.4 WASTE MANAGEMENT PLAN

- A. Contractor shall develop Waste Management Plan (WMP) for this project. Contact the Dane County Special Projects & Materials Manager with questions. Outlined in RECYCLING section of this specification are examples of materials that can be recycled or reused as well as recommendations for waste sorting methods.
- B. Contractor shall complete WMP and include cost of recycling / reuse in Bid. Submit WMP to Public Works Project Manager [within fifteen (15) business days of Bid Due date, with Bid]. Copy of blank WMP form is in this Section. Submittal shall include cover letter and WMP form with:

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

1.5 REUSE

- A. Contractors and subcontractors are encouraged to reuse as many waste materials as possible. Investigate salvage for materials not reusable on site.

1.6 RECYCLING

- A. These materials may be recycled at Dane County Construction & Demolition Recycling Facility:
 1. Wood.
 2. Wood Pallets.
 3. PVC Plastic (pipe, siding, etc.).
 4. Asphalt & Concrete.
 5. Bricks & Masonry.
 6. Vinyl Siding.
 7. Cardboard.
 8. Metal.
 9. Unpainted Gypsum Drywall.
 10. Shingles.
- B. These materials can be recycled elsewhere in Dane County area:
 1. Fluorescent Lamps.
 2. Foam Insulation & Packaging (extruded and expanded).
 3. Carpet Padding.
 4. Barrels & Drums.
- C. All materials must be recycled at WDNR permitted waste processing facilities that adhere to all State Statutes.

1.7 MATERIALS SORTING AND STORAGE ON SITE

- A. Contractor shall provide separate containers for recyclable materials. Number of containers will be dependent upon project and site conditions.
- B. Contractor shall provide on-site locations for subcontractors supplied recycling containers to help facilitate recycling.
- C. Dane County allows mixed loads of recycled materials only per instructions at landfill.countyofdane.com/services/construction.

1.8 LISTS OF RECYCLING FACILITIES PROCESSORS AND HAULERS

- A. Refer to landfill.countyofdane.com/services/construction for information on Dane County Construction & Demolition Recycling Facility.
- B. Web site landfill.countyofdane.com/recycle-locations lists current information for Dane County Recycling Markets. Contractors can also contact Allison Rathack, 608/266-4990, or local city, village, town recycling staff listed at site landfill.countyofdane.com/resources/local-contacts. Statewide listings of recycling / reuse markets are available from UW Extension at uwgb.edu/solid-hazardous-waste-education-center/.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

WASTE MANAGEMENT PLAN FORM



Contractor Name: _____

Address: _____

Phone No.: _____ Recycling Coordinator: _____

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

WASTE MANAGEMENT PLAN FORM

Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____
Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____
Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____
Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____
Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____

SECTION 22 00 00

PLUMBING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work Included: Provide plumbing where shown on the Drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to:
1. Domestic Cold Water Piping.
 2. Plumbing Fixtures and Trim.
- B. Related Work:
1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.
- C. Work of Other Sections:
1. Openings for new Plumbing work in new construction walls, floors, roof, ceiling, etc. shall be provided by the Contractor. Location and size of these openings shall be the responsibility of the Plumbing Contractor.
 - 2.
 3. Roofing, exterior wall and related exterior openings shall be caulked, sealed and patched by the Contractor.
 - 4.

1.02 GENERAL PROVISIONS

- A. This specification Section is a general description of the work requirements. The particular descriptions are not intended to be all-inclusive. Bidders shall also refer to the Drawings.
- B. Prior to submitting a bid, the Contractor shall call the Project Manager's attention (in writing only) to any materials or items of work believed to be inadequate. Bidders are required to visit the premises, take measurements, inspect existing conditions and limitations, and obtain firsthand information necessary to submit a bid. The intent of the Contract is to obtain complete system installations, tested, ready for operation. No extras will be allowed because Contractor's misunderstanding of the scope work involved.
- C. Everything essential for the completion of the work implied to be covered by these Specifications to make the system ready for normal and proper operation must be furnished and installed by this Contractor. Accordingly, any omission from either the plans or the Specifications, or both of details necessary for the proper installation and

operation of the system shall not relieve this Contractor from furnishing such detail in full and proper manner.

- D. The Drawings show various details indicating the general arrangement of the plumbing work, sizes and locations of piping, equipment, etc. The said Drawings with figures, lettering, etc., shall be considered a part of these Specifications and no charge or alternation shall be made in any case unless ordered by the Engineer.
- E. In addition to the Plumbing work, refer to the Plumbing work shown on the general Construction Drawings of the building as being part of this Contract, unless specified to be done by other contractors.

1.03 QUALITY ASSURANCE

- A. Use adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Without additional cost to the Owner, provide such other labor and materials as required to be complete the work of the Section in accordance, with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in the Contract Documents.
- C. In acceptance or rejection of installed work, the Project Manager shall make no allowance for lack of skill on the part of the Workers.
- D. For the actual field fabrication, installation and testing of the Plumbing work, use only thoroughly trained and experienced workers complete familiar with the items required and manufacturer's current recommended methods of installation.
- E. Reference Standards:

ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society of Testing and Material
AWWA	American Waterworks Association
CISPI	Cast Iron Soil Pipe Institute
FM	Factory Mutual
MCA	Mechanical Contractors Association
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
WQA	Water Quality Association

1.04 CODES AND PERMITS

- A. This contractor must comply with building codes and other ordinances in force where the building is located as far as same apply to his work.

- B. Plumbing work shall meet all Federal, State, Local Codes, ordinances and utility regulations.
 - 1. In the event of conflict between or among specified requirements and pertinent regulations, the more stringent requirement will govern when so directed by the Engineer.
- C. Plumbing Contractor must secure permits from proper offices and pay all legal fees as may be necessary for fulfilling the requirements of these specifications.
- D. Submit one (1) copy of all permits to the Owner.

1.05 COORDINATION

- A. Cooperate and coordinate with other trades to assure that all systems pertaining to the Plumbing work shall be installed in the best feasible arrangement. Coordinate as required with all other trades to share space in common areas and to provide the maximum of access to each system.
- B. Arrange plumbing work in neat, well organized manner with piping and similar services running with primary lines of building construction, and with minimum of 8 foot overhead clearance, where possible.
- C. Locate equipment properly to provide easy access, and arrange entire plumbing work with adequate access for operation and maintenance.
- D. Give right-of-way to piping, which must slope for drainage.
- E. Where Plumbing work is to connect to existing, the Contractor must field verify all connection points before beginning any rough-in work. Verify gravity flow lines and proper invert elevations required prior to starting piping installation.

1.06 PLUMBING SYSTEM IDENTIFICATION

- A. General: Provide adequate marking of plumbing system and control equipment to allow identification and coordination of maintenance activities and maintenance manuals.
 - 1. Furnish and install adequate marking, tagging and labeling of all *accessible and exposed* Plumbing equipment, piping and control devices, per ANSI A13.1-1981. Accessible locations shall include all ceiling spaces above accessible ceilings.
- B. Equipment: Identify all major Plumbing equipment with plastic-laminate signs of 2" high painted stencils and contrasting background. Provide test of sufficient clarity and lettering to convey adequate information at each location and mount permanently. Identify control equipment by 1-1/2" x 4" plastic laminate nameplates with 1/4" high lettering.
- C. Piping: Identify piping once every 30 feet at each branch, at termination of lines, and near valve or equipment connections. Place flow directional arrows at each piping

system for identification of flow direction. Provide lettering of the appropriate size to convey information on wrap-around signage, adhesive-backed or paint stenciled labels.

- D. Valves: Identify all valves with 1-1/2" diameter polished brass tags with stamp-engraved labels or plastic laminate tags. Prefix or color-code tags for each generic piping service. Prepare and submit valve tag schedule, listing location, service and tag description, and incorporate in Instruction Operations Manual.
- E. Operational Labels: Where needed for proper or adequate information on operation and maintenance of Plumbing systems, provide tags or labels of plastic or laminated card stock, typewritten to convey the message.

1.07 FLOOR, WALL, ROOF AND CEILING OPENINGS

- A. The I Contractor will be required to leave openings in ceiling, floors, walls, roof, partitions, etc., as required to install the Plumbing work specified or shown on the Drawings. The Plumbing Contractor is responsible for correct size and location of his openings. Where penetrations through existing construction are required, they shall be the responsibility of the Plumbing Contractor.
 - 1. Pipe Sleeves: Schedule 40 black steel pipe, 1" larger than carrier pipe.
- B. The Plumbing Contractor shall set sleeves and anchors for all equipment, etc., and shall provide watertight seals on pipes through exterior walls, floors and roof and where noted on the Drawings.
- C. Pack annular space between sleeves and pipe with fiberglass insulation and seal with approved caulking materials. Where penetrations occur through fire-rated walls or floors, fill space with fire-resistive insulation similar to high-temperature mineral wool, US Gypsum Thermafiber batts or Cera-blanket FS insulation by Tremco. Seal openings with UL approved fire-resistive fire stop caulk/sealant or assembly.
 - 1. Fireproof plastic piping through fire-rated construction per approved UL listed assembly.
- D. Provisions for openings, holes and clearances through walls, floors, ceilings and partitions to be made in advance of construction of such parts of the building.
- E. If the Plumbing Contractor should neglect to inform the General Contractor of his opening requirements and that portion of the Building construction has been completed, the Plumbing Contractor shall pay the General Contractor for providing such openings.
- F. Make arrangements with various other contractors for all special framing, spacing and chases. Plumbing Contractor is responsible for correct size and location.

1.08 CUTTING AND PATCHING

- A. General: Refer to Division 1 General Requirements.

- B. Perform all cutting and patching required for complete installation of the HVAC systems, unless specifically noted otherwise. Provide all materials required for patching unless otherwise noted.
 - 1. All cutting and patching necessary of structural members to install any Plumbing work shall not be done without permission, and then only carefully done under the direction of the Architect and General Contractor.
- C. The Contractor shall not endanger any work of other trades by demolition, cutting, digging or otherwise. Any cost caused by defective or ill-timed cutting and patching work shall be borne by the contractor responsible. Each contractor requiring cutting and patching shall hire men skilled in such cutting and patching to do the work.
 - 1. All patching work in existing areas shall match existing work and restore the finish to its original condition in material, quality, texture, finish and color unless specifically noted or scheduled otherwise.

1.09 TESTS AND INSPECTIONS

- A. All plumbing tests shall be conducted in the presence of and to the satisfaction of the Governing Authorities, Architect/Engineer, and Owner or his authorized representative.
- B. The Plumbing Contractor shall be responsible for applying tests and ordering inspections as required by Federal, State and local Code and Inspection authorities.
 - 1. All work shall remain exposed until it has been tested, inspected and approved.

1.10 TEMPORARY SERVICES

- A. Provide temporary services for all plumbing services to the existing facility to maintain function of sanitary, storm, natural gas and water services during the construction period.

1.11 TRENCHING AND BACKFILLING

- A. Trench, excavate and tunnel to place all piping and other related work necessary at the elevations indicated or required, as shown on the Drawings.
 - 1. Cut bottom of trench to grade, make trench 12" wider than the widest dimension of the pipe.
 - 2. All pipes shall be laid on a compacted bed of sand 6" deep. Do not lay piping on large stones, rocks or bricks.
- B. Backfill in layers and compact sufficiently to prevent settlement. Backfill with damp sand and fine gravel mixture.
 - 1. Exterior locations shall be backfilled to 12" of grade with sand and fine gravel mixture and the remainder with native compacted topsoil.
 - 2. Do not start backfill operations until plumbing work has been properly inspected and approved.

1.12 EQUIPMENT ACCESS

- A. General: All valves, equipment and accessories shall be installed to permit access to equipment for maintenance, servicing or repairs. Relocation of piping, or equipment to accomplish equipment access shall be completed by this Contractor at no additional cost.

1.13 EQUIPMENT SUPPORTS

- A. General: Provide all supporting steel and related materials not indicated on structural drawings as required for the installation of equipment and materials, including angles, channels, beams and hangers.

1.14 GUARANTEE

- A. All material and workmanship must be new and first class in every respect; the plumbing equipment must be turned over to the owner in complete working order and free from mechanical or performance defects.
- B. The Plumbing Contractor must guarantee all labor and materials for one (1) year from the completion of the plumbing system. Maintain and repair plumbing equipment for the above period, unless such defects are clearly the result of bad management after plumbing system is turned over to the Owner.
- C. Before final acceptance of the plumbing work, the Plumbing Contractor shall have the entire apparatus and system in complete and satisfactory operation and shall maintain same in satisfactory and continuous operation for a period of ten days prior to the date of acceptance.
- D. The Plumbing Contractor shall submit to the Engineer in triplicate, at the completion of his work, a certified statement, signed by a principal of the firm, stating that the system has been fully installed and is operating within the intent of the Drawings and Specifications and that all system components have been tested and adjusted. This statement shall be submitted before the system is presented to the Owner for final inspection.

1.15 SUBMITTALS

- A. Refer to Division 1 for additional submittal requirements.
- B. The Plumbing Contractor will be held responsible for correction of work deemed necessary by the Project Manager due to proceeding with the work without shop drawings that have final approval.
- C. Shop drawings shall include data on physical dimensions, gauges, materials of construction and capacities.
 - 1. Incomplete drawings will be disapproved.
- D. This Contractor will be responsible for all figures and dimensions shown on the shop drawings. Approval of shop drawings describing equipment that cannot fit in the space

allotted does not relieve this Contractor from providing equipment that will meet the space requirements.

- E. Submit an electronic copy of shop drawings to the Project Manager for approval, with complete detail for all equipment, materials, etc., to be furnished and installed for this project as follows:

1. Valves.
2. Pipe and piping specialties.
3. Insulation systems.
4. Plumbing fixtures.
5. Instructions and O&M manuals(2 copies).
6. As-built Drawings(1 copy).

1.20 HOUSEKEEPING AND CLEANUP

- A. Periodically as work progress and/or as directed by the Architect/Engineer, the Contractor shall remove waste materials from the building and leave the area of the work room clean. Upon completion of work remove all tools, scaffolding, broken and waste materials, etc., from the site.

1.21 LUBRICATION

- A. Upon completion of the work and before turning over to the Owner, clean and lubricate all bearings except sealed and permanently lubricated bearings. Use only lubricant recommended by the manufacturer.
 1. The Contractor is responsible for maintaining lubrication of all mechanical equipment under his contract until work is accepted by the Owner.
- B. Furnish a chart with each piece of equipment listed, itemizing location for lubricant required and recommended periods of lubrication. Incorporate chart in Instruction Manual.

1.22 INSTRUCTIONS AND MANUALS

- A. Upon completion of the installation, but before final acceptance of the system, the Plumbing Contractor shall instruct the Owner on the care and operation of all parts of the Plumbing system.
- B. Assemble two (2) complete sets of manufacturer's printed operating and maintenance instructions for all mechanical equipment and installed under this contract. Prepare in bound copies complete with index tabs. Information must include parts lists, equipment warranties, and wiring diagrams. Submit bound copies to Architect for disbursement.

1.23 AS-BUILT DRAWINGS

- A. During construction maintain a set of prints showing installed as-built work for the project.

- B. Upon completion of construction before final acceptance, provide a set of as-built drawings to the Architect/Engineer.

PART 2 - PRODUCTS

2.01 DOMESTIC WATER PIPE SCHEDULE

A. Above Ground Piping:

1. Type 'L' copper water tube, H(hard drawn) temper, ASTM B88; with cast copper fittings, ANSI B16.18; wrought copper fittings, ANSI B16.22; lead-free(less than 0.2%) solder, ASTM B32; flux ASTM B813.
2. PEXa tubing approved for potable water piping: Crosslinked Polyethylene, ASTM F876 & ASTM F877. Fittings: Insert type fittings with cold flaring memory type fittings equal to Uponor. Crimp or compression ring fittings will not be allowed.
3. Copper mechanical grooved fittings and couplings on roll grooved pipe(propress) may be used in lieu of soldered fittings.

B. Below Ground: 2-1/2" and Smaller:

1. Type 'K' copper water tube, O(annealed-soft) temper, ASTM B88; with cast copper fittings, ANSI B16.18; wrought copper fittings, ANSI B16.22; lead-free(less than 0.2%) solder, ASTM B32; flux ASTM B813; or cast copper flared pressure fittings, ANSI B16.26.
2. PEXa tubing approved for potable water piping: Crosslinked Polyethylene, ASTM F876 & ASTM F877. Fittings: Insert type fittings with cold flaring memory type fittings equal to Uponor. Crimp or compression ring fittings will not be allowed.

2.02 VALVES

A. Approved Manufacturers:

1. Conbraco Apollo;
2. Milwaukee;
3. Watts;
4. Nibco.

B. Check valves:

1. 2" and smaller: Bronze, screwed, Y-pattern, 200# WOG, swing check type.

C. Ball valves:

1. 2" and smaller: Two or Three piece, bronze-body, chrome-plated bronze ball, Teflon seat and packing, 400 pig WOG, with stem extensions on insulated piping. Apollo 70-200 series.

2.03 PIPE HANGERS

A. Piping:

1. Split ring hangers with supporting rods.
 2. Adjustable clevis.
- B. Multiple or Trapeze Hangers:
1. Steel channels with welded spacers and hanger rods.
- C. Floor Support:
1. Painted steel pipe saddle, stand and bolted floor flange.
- D. Copper Pipe Supports:
1. All supports, fasteners, clamps, etc. directly connected to copper piping shall be copper-plated or polyvinylchloride(PVC)-coated.
 2. Where steel strut supports are used, provide isolation collar between supports/clamp and copper piping.
- E. Approved Manufacturers: Fee and Mason, B-line, Grinnell or approved equal.

2.04 ACCESS

- A. General: All piping, conduit and accessories shall be installed to permit access to equipment for maintenance. Any relocation of piping, equipment or accessories required to provide maintenance access shall be accomplished by the Contractor at no additional cost.
- B. Removable Access Plates: Where only hand access is sufficient for valve access, provide removable plate-type access unit of minimum size which will facilitate required access.
1. Provide units of type, style, design, material and finish appropriate for location and exposure in each instance.
 2. In exposed surfaces of occupied spaces provide round plate units, flush floor units and frameless low-profile wall units, primed-for-paint in painted surfaces and polished chrome or stainless steel finish in other surfaces.
- C. Walls:
1. Smith #4767 flush wall stainless steel cover plate with screw latch lock in finished tile walls at wet locations.
 2. Smith #4760 or #4765 with bonderized prime-coated steel face and screw latch lock in walls of other finished rooms.
- E. Floors:
1. 1. Smith #4910 with aluminum or nickel-bronze non-skid top.

2.05 PIPE INSULATION

- A. General: Provide composite piping insulation (insulation, jackets, coverings, sealers, mastics, and adhesives) with ratings not exceeding flame spread of 25 and a smoke developed of 50 in active return air plenums. Ratings in all other areas shall not exceed

a flame spread of 25 and a smoke developed of 150 (test method ASTM E-84). Comply with all codes regarding the use of foam insulation.

- B. Insulate piping located in interior space, including (but not necessarily limited to) the following services:
 - 1. Interior cold and hot domestic water piping.
- C. Insulate each piping system with one of the following types and thickness of insulation, except as otherwise indicated (Installer's option where more than one type is indicated).
 - 1. Fibrous Glass: Minimum density 3 lb./cu.ft., thermal conductivity of not more than 0.23 at 75 degrees F mean temperature, suitable for temperatures to 450 degrees F. Kraft-reinforced, foil-vapor barrier, laminate all-service jacket, factory applied to insulation with a self-sealing pressure sensitive adhesive lap, maximum permeance of 0.02 perms and minimum beach puncture resistance of 50 units.
 - 2. Elastomeric Insulation: Closed-cell type, with minimum nominal density of 5.5 lbs./cu.ft., thermal conductivity shall be not more than 0.27 at 75 degrees F mean temperature, and maximum water vapor transmission of 0.17 perm/inch. The material shall be suitable for a temperature range from 220 degrees F to minus 40 degrees F.

D. Insulation Installation Schedule:

<u>Service</u>	<u>Pipe Size</u>	<u>Insulation Thickness</u>
1. Cold Water Piping	Less than 1"	½"
	1-1/4" thru 4"	1"

2.06 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 SITE UTILITIES

- A. Advise the General Contractor of site conditions or inverts inconsistent with the plumbing layout and proposed flow line prior to proceeding.

3.03 PLUMBING SYSTEM LAYOUT

- A. Lay out the plumbing system in careful coordination with the Drawings, determining proper elevations for all components of the system and using only the minimum number of bends to produce a satisfactorily functioning system.
- B. Follow the general layout shown on the Drawings in all cases except where other work may interfere.
- C. Lay out pipes to fall within partition, wall, or roof cavities, and to not require furring other than as shown on the Drawings.
- D. Where work is to connect to existing, Plumbing contractor must field verify all connection points before beginning any rough-in work. Verify all connecting invert elevations and flow lines of new work connected to existing gravity drainage.

3.04 TRENCHING AND BACKFILLING

- A. Perform trenching and backfilling associated with the work of this Section in strict accordance with the provisions of Division 2 of these Specifications and consistent with the national, state and local plumbing codes.
- B. Cut bottom of trenches to grade. Make trenches 12" wider than the greatest dimension of the pipe.
- C. Bedding and backfilling:
 - 1. Install piping promptly after trenching. Keep trenches open as short a time as practicable.
 - 2. Under the building, install pipes on a 6" bed of damp sand. Backfill to bottom of slab with damp sand.
 - 3. Outside the building, install underground piping on a 6" bed of damp sand. Backfill to within 12" of finish grade with damp sand. Backfill remainder with native topsoil.
 - 4. Do not backfill until installation has been approved and until Project Record Documents have been properly annotated.

3.05 INSTALLATION OF PIPING AND EQUIPMENT, GENERAL

- A. General:
 - 1. Proceed as rapidly as the building construction will permit.
 - 2. Thoroughly clean items before installation. Cap pipe openings to exclude dirt until fixtures are installed and final connections have been made.
 - 3. Cut pipe accurately, and work into place without springing or forcing properly clearing window, doors, and other openings. Excessive cutting or other weakening of the building will not be permitted.
 - 4. Show no tool marks or threads on exposed plated, polished, or enameled connections from fixtures. Tape all finished surfaces to prevent damage during construction.

5. Make changes in directions with fittings; make changes in main sizes with eccentric reducing fittings. Unless otherwise noted, install water supply and return piping with straight side of eccentric fittings at top of the pipe.
6. Run horizontal water piping with an adequate pitch upwards in direction of flow to allow complete drainage.
7. Provide sufficient swing joint, ball joints, expansion loops, and devices necessary for a flexible piping system, whether or not shown on the Drawings.
8. Support piping independently at pumps, coils, tanks, and similar locations, so that weight of pipe will not be supported by the equipment.
9. Pipe the drains from pump glands, drip pans, relief valves, air vents, and similar locations, to spill an open sight drain, floor drain, or other acceptable discharge point, and terminate with a plain and unthreaded pipe 6" above the drain.
10. Securely bolt all equipment, isolators, hangers, and similar items in place.
11. Support each item independently from other pipes. Do not use wire for hanging or strapping pipes.
12. Provide complete dielectric isolation between ferrous and non-ferrous metals.
13. Provide union and shut off valves suitably located to facilitate maintenance and removal of equipment and apparatus.

B. Equipment access:

1. Install piping, equipment, and accessories to permit access for maintenance. Relocate items as necessary to provide such access, and without additional cost to the Owner.
2. Provide access doors where valves, motors, or equipment requiring access for maintenance are located in wall or chases or above ceilings. Coordinate location of access doors with other trades as required.

3.06 PIPE JOINTS

A. Copper tubing:

1. Cut square, remove burrs, and clean inside of female fitting to a bright finish.
 - a. Apply solder flux with brush to tubing.
 - b. Remove internal parts of solder-end valves prior to soldering.
2. Provide dielectric unions at points of connection of copper tubing to ferrous piping and equipment.
3. For joining copper tubing, use the following:
 - a. Water piping 3" and smaller: 95-5 solder;
 - b. Water piping larger than 3": "Sil-fos" brazing;
 - c. Underground: "Sil-fos" brazing.

B. Screwed piping:

1. Deburr cuts.
 - a. Do not ream exceeding internal diameter of the pipe.
 - b. Thread to requirements of ANSI B2.1.
2. Use Teflon tape on male thread prior to joining other services.
3. Use litharge and glycerin on joint prior to cleaning for air and oil piping.

C. PEX Tube Joints:

1. Installed per ASTM F-1807 with insert-type fittings with cold memory flaring as manufactured by Uponor are approved.
2. Brass compression type fittings with threaded nut, compression ring and insert will not be acceptable.
3. Provide copper type L manifolds, where manifold distribution is used with labeled quarter turn ball valve stops for each service line.
4. Install piping and fittings per manufacturers recommendations.

D. Leaky joints:

1. Remake with new material.
2. Remove leaking section and/or fitting as directed.
3. Do not use thread cement or sealant to tighten joint.

3.07 PIPE SUPPORTS

- A. Support suspended piping with clevis or trapeze hangers and rods.
- B. Space hangers and support for horizontal steel pipes according to the following schedule:

<u>Pipe size:</u>	<u>Maximum spacing on centers:</u>
1-1/4" and smaller:	8'-0"
1-1/2" to 3":	10'-0"
4" to 5":	14'-0"

- C. Space hangers and supports for horizontal copper tubing according to the following schedule:

<u>Tube size:</u>	<u>Maximum spacing on centers:</u>
1" and smaller:	6'-0"
1-1/2":	7'-0"
2":	8'-0"
2-1/2":	9'-0"
3" and larger:	10'-0"

- D. Provide sway bracing on hangers longer than 18".
- E. Support vertical piping with riser clamps secured to the piping and resting on the building structure. Provide at each floor unless otherwise noted.
- F. Provide insulation continuous through hangers and rollers. Protect insulation by galvanized steel shields.
- G. Arrange pipe supports to prevent excessive deflection, and to avoid excessive bending stress.
- H. Hubless piping:

1. Provide hangers on the piping at each side of, and within 6" of, hubless pipe coupling so the coupling will bear no weight.
2. Do not provide hangers on couplings.
3. Provide hangers adequate to maintain alignment and to prevent sagging of the pipe.
4. Make adequate provision to prevent shearing and twisting of the pipe and the joint.

3.08 SLEEVES AND OPENINGS

- A. Provide sleeves for each pipe passing through walls, partitions, floors, roofs, and ceilings.
 1. Set pipe sleeves in place before concrete is placed.
 2. For uninsulated pipe, provide sleeves two pipe sizes larger than the pipe passing through, or provide a minimum of 1/2" clearance between inside and outside of the pipe.
 3. For insulated pipe, provide sleeves of adequate size to accommodate the full thickness of pipe covering, with clearance for packing and caulking.
- B. Caulk the space between sleeve and pipe or pipe covering, using a noncombustible, permanently plastic, waterproof, non-staining compound which leaves a smooth finished appearance, or pack with noncombustible asbestos cotton, or fiberglass to within 1/2" of both wall faces, and provide the waterproof compound described above.
- C. Finish and escutcheons:
 1. Smooth up rough edges around sleeves with plaster or spackling compound.
 2. Provide 1" wide chrome or nickel plated escutcheons on all pipes exposed to view where passing through walls, floors, partitions, ceilings, and similar locations.
 - a. Size the escutcheons to fit pipe and covering.
 - b. Hold escutcheons in place with set screw.

3.09 VALVES

- A. Provide valves in water and gas systems. Locate and arrange so as to give complete regulation of apparatus, equipment, and fixtures.
- B. Provide valves in at least the following locations:
 1. In branches and/or headers of water piping serving a group of fixtures.
 2. On both sides of apparatus and equipment.
 3. For shutoff of risers and branch mains.
 4. For flushing and sterilizing the system.
 5. Where shown on the Drawings.
- C. Locate valves for easy accessibility and maintenance.

3.10 BACKFLOW PREVENTION

- A. Protect plumbing fixtures, faucets with hose connections, and other equipment having plumbing connection, against possible back siphonage.
- B. Arrange for testing of backflow devices as required by the governmental agencies having jurisdiction.

3.11 PLUMBING FIXTURE INSTALLATION

- A. Installation:
 - 1. Set fixtures level and in proper alignment with respect to walls and floors, and with fixtures equally spaced.
 - 2. Provide supplies in proper alignment with fixtures and with each other.
- B. Grout wall and floor mounted fixtures watertight where the fixtures are in contact with walls and floors.
- C. Caulk deck-mounted trim at the time of assembly, including fixture and casework mounted. Caulk self-rimming sinks installed in casework.

3.12 OTHER TESTING AND ADJUSTING

- A. Provide personnel and equipment, and arrange for and pay the costs of, all required tests and inspections required by governmental agencies having jurisdiction.
- B. Where test show materials or workmanship to be deficient, replace or repair as necessary, and repeat the tests until the specified standards are achieved.
- C. Adjust the system to optimum standards of operation.

END OF SECTION

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SECTION 23 11 00
FACILITY FUEL PIPING

PART 1 - GENERAL

SCOPE

This section contains specifications for fuel pipe and fuel pipe fittings for this project. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference
- Reference Standards
- Shop Drawings
- Quality Assurance
- Delivery, Storage, and Handling
- Design Criteria
- Welder Qualifications
- Natural Gas Service

PART 2 - PRODUCTS

- Natural Gas
- Vents and Relief Valves
- Unions and Flanges

PART 3 - EXECUTION

- Preparation
- Erection
- Welded Pipe Joints
- Threaded Pipe Joints
- Lube Oil Systems
- Natural Gas
- Vents and Relief Valves
- Unions and Flanges
- Gaskets
- Piping System Leak Tests
- Construction Verification Items
- Piping System Leakage Test Report

REFERENCE

Applicable provisions of Division 1 govern work under this section.

REFERENCE STANDARDS

- ANSI B16.3 Malleable Iron Threaded Fittings
- ASTM A53 Pipe, Steel, Black and Hot-Dipped, Zinc Coated Welded and Seamless
- ASTM A234 Pipe Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and Elevated Temperatures

SHOP DRAWINGS

Refer to division 1, General Conditions, Submittals.

Contractor shall submit schedule indicating the ASTM specification number of the pipe being proposed along with its type and grade and sufficient information to indicate the type and rating of fittings for each service.

TYPE E OR S STEEL PIPE:

Mill certification papers, also known as material test reports, for the pipe furnished for this project, in English.

1 Heat numbers on these papers to match the heat numbers stenciled on the pipe. Chemical analysis is indicated
2 on the mill certification papers to meet or exceed the requirements of the referenced ASTM specification.

3
4 **QUALITY ASSURANCE**

5 Order all Type E and Type S steel pipe with heat numbers rolled, stamped, or stenciled to each length or each
6 bundle, depending on the size of the pipe, and in accordance with the appropriate ASTM specification.

7
8 Any installed material not meeting the specification requirements must be replaced with material that meets
9 these specifications without additional cost to the Owner.

10
11 **DELIVERY, STORAGE, AND HANDLING**

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

13
14 Cover pipe to eliminate rust and corrosion while allowing sufficient ventilation to avoid condensation. Do
15 not store materials directly on grade. Protect pipe, tube, and fitting ends so they are not damaged. Where end
16 caps are provided or specified, take precautions so the caps remain in place.

17
18 Offsite storage agreements will not relieve the contractor from using proper storage techniques.

19
20 Storage and protection methods must allow inspection to verify products.

21
22 **DESIGN CRITERIA**

23 Use only new material, free of defects, rust and scale, and meeting the latest revision of ASTM specifications
24 as listed in this specification.

25
26 Construct all piping for the highest pressures and temperatures in the respective system in accordance with
27 ANSI B31, but not less than 125 psig unless specifically indicated otherwise.

28
29 Non-metallic piping will be acceptable only for the services indicated. It will not be acceptable in occupied
30 spaces and ventilation plenum spaces, including plenum ceilings.

31
32 Where weld fittings or mechanical grooved fittings are used, use only long radius elbows having a centerline
33 radius of 1.5 pipe diameters.

34
35 Where ASTM A53 grade A pipe is specified, ASTM A53 grade B pipe may be substituted at Contractor's
36 option. Where the grade or type is not specified, Contractor may choose from those commercially available.

37
38 **WELDER QUALIFICATIONS**

39
40 Before any metallic welding is performed, Contractor to submit his Standard Welding Procedure
41 Specification together with the Procedure Qualification Record as required by Section IX of the ASME Boiler
42 and Pressure Vessel Code and/or the National Certified Pipe Welding Bureau.

43
44 Before any polyethylene fusion welding is performed, Contractor to submit certification that the welders to
45 be used on this project have successfully demonstrated proper welding procedures in accordance with the
46 Code of Federal Regulations, Title 49, Part 192, Section 192.285.

47
48 The A/E or DFD reserves the right to test the work of any welder employed on the project, at the Contractor's
49 expense. If the work of the welder is found to be unsatisfactory, the welder shall be prevented from doing
50 further welding on the project.

51
52 **NATURAL GAS SERVICE**

53 All charges for the gas service as shown on the plans, including the connection from the main in the street or
54 other location to the gas meter, shall be paid by this Contractor, including setting of gas meter(s) and all work
55 performed by the gas company.

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PART 2 - PRODUCTS

NATURAL GAS

2" and Smaller: ASTM A53, type E or S, standard weight (schedule 40) black steel pipe with ASTM A197/ANSI B16.3 class 150 black malleable iron threaded fittings or ASTM A234 grade WPB/ANSI B16.9 standard weight, seamless, carbon steel weld fittings.

2-1/2" and Larger: ASTM A53, type E or S, standard weight black steel pipe with ASTM A234 grade WPB/ANSI B16.9 standard weight, seamless, carbon steel weld fittings.

VENTS AND RELIEF VALVES

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

UNIONS AND FLANGES

2" and Smaller: ASTM A197/ANSI B16.3 malleable iron unions with brass seats. Use black malleable iron on black steel piping and galvanized malleable iron on galvanized steel piping. Use unions of a pressure class equal to or higher than that specified for the fittings of the respective piping service but not less than 250 psi.

2-1/2" and Larger: ASTM A181 or A105, grade 1 hot forged steel flanges of threaded, welding and of a pressure class compatible with that specified for valves, piping specialties and fittings of the respective piping service. Flanges smaller than 2-1/2" may be used as needed for connecting to equipment and piping specialties. Use raised face flanges ANSI B16.5 for mating with other raised face flanges on equipment with flat ring or full face gaskets. Use ANSI B16.1 flat face flanges with full face gaskets for mating with other flat face flanges on equipment.

Provide ASTM A 193 B7 grade bolts and A 194 2H grade nuts & hardened washers for connections (Star washers for grounding.)

GASKETS

Fuel Oil and Natural Gas Systems: Branded, compressed, non-asbestos sheet gaskets. Klingersil C4401, Garlock 3000, JM Clipper 978-C or approved equal.

PART 3 - EXECUTION

PREPARATION

Remove all foreign material from interior and exterior of pipe and fittings.

ERECTION

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

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

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

"Weldolets" and "Threadolets" may be used for branch takeoffs up to one-half (1/2) the diameter of the main.

Do not route piping through transformer vaults or above transformers, panelboards, or switchboards, including the required service space for this equipment, unless the piping is serving this equipment.

1
2 Install all valves, and piping specialties, including items furnished by others, as specified and/or detailed.
3 Make connections to all equipment installed by others where that equipment requires the piping services
4 indicated in this section.

5
6 **WELDED PIPE JOINTS**

7 Make all welded joints by fusion welding in accordance with ASME Codes, ANSI B31, and State Codes
8 where applicable.

9
10 All pipe welding shall be completed by Qualified Welders in accordance with the Contractor's Procedure
11 Specifications.

12
13 Contractor will ensure that these steps are followed where pipe sections will be joined by welding:

- 14 1. Cleaning – Welding surfaces will be clean and free of defects.
- 15 2. Alignment – Inside diameter of piping components will be aligned as accurately as possible. Internal
16 misalignment shall not exceed 1/16".
- 17 3. Spacing – Pipe sections will be spaced to allow deposition of weld filler material through the entire
18 weld joint thickness.
- 19 4. Girth Butt Welds:
 - 20 a. Girth butt welds shall be complete penetration welds.
 - 21 b. Concavity will not exceed 1/32"
 - 22 c. Under cuts will not exceed 1/32"
 - 23 d. As welded surfaces are permitted however surfaces will be free from coarse ripples,
24 grooves, abrupt ridges and valleys.

25
26 Electrodes shall be Lincoln, or approved equal, with coating and diameter as recommended by the
27 manufacturer for the type and thickness of work being done.

28
29 **THREADED PIPE JOINTS**

30 Use a Teflon based thread lubricant or Teflon tape when making joints; no hard setting pipe thread cement
31 or caulking will be allowed.

32
33
34
35 **NATURAL GAS**

36 Pitch horizontal piping down 1" in 60 feet in the direction of flow. Install a 4" minimum depth dirt leg at the
37 bottom of each vertical run and at each appliance. When installing mains and branches, cap gas tight each
38 tee or pipe end which will not be immediately extended. All branch connections to the main shall be from
39 the top or side of the main.

40
41 Do not install gas pipe in a ventilation air plenum.

42
43 If an above ground vent terminates in an area subject to snow accumulation, terminate the line at least five
44 feet above grade.

45
46 Install a shut off valve at each appliance. Provide a valved connection at the main for equipment and
47 appliances furnished by others.

48
49 Piping through a roof shall be run through an approved roof penetration with flashing and counter flashing.

50
51 Each gas pressure reducing valve vent and relief valve vent shall be run separately to a point outside of the
52 building, terminated with a screened vent cap, and located according to gas utility regulations.

53
54 Clean all welded piping before all regulators and control valves. Test by placing target cloth over piping and
55 blow with compressed air. Clean piping until target cloth is clean and free of debris.
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VENTS AND RELIEF VALVES

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

UNIONS AND FLANGES

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

GASKETS

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

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

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

PIPING SYSTEM LEAK TESTS

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

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

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

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

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

Measure natural gas system test pressure with a water manometer or an equivalent device calibrated in increments not greater than 0.1 inch water column. System will not be approved until it can be demonstrated that there is no measurable loss of test pressure during the test period.

Conduct fuel oil system test so as not to impose a pressure of more than 10 psig on the tank. Instead of a pressure test, suction lines may be tested under a vacuum of not less than 20 inches of mercury maintained for at least one hour.

System	Pressure	Medium	Duration
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Natural gas	100 psig	Air	24 hr
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All pressure tests are to be documented on a Division of Facilities Development form included in this specification.

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

CONSTRUCTION VERIFICATION ITEMS

Contractor is responsible for utilizing the construction verification checklists supplied under specification Section 23 08 00 in accordance with the procedures defined for construction verification in Section 01 91 01 or 01 91 02.

END OF SECTION

PIPING SYSTEM LEAKAGE TEST REPORT

State of Wisconsin
Department of Administration
Division of Facilities Development

Date
Submitted: _____

Project Name: _____

Location: _____ DFD Project No: _____

Contractor: _____

- | | | |
|--------------------------------------|----------------------------------------|------------------------------------|
| <input type="checkbox"/> HVAC | <input type="checkbox"/> Refrigeration | <input type="checkbox"/> Controls |
| <input type="checkbox"/> Power Plant | <input type="checkbox"/> Plumbing | <input type="checkbox"/> Sprinkler |

Test Medium: Air Water Other _____

Test performed per specification section No. _____

Specified Test Duration _____ Hours Specified Test Pressure _____ PSIG

System Identification: _____

Describe Location: _____

Test Date: _____	
Start Test Time: _____	Initial Pressure: _____ PSIG
Stop Test Time: _____	Final Pressure: _____ PSIG

Tested By: _____ Witnessed By: _____

Title: _____ Title: _____

Signed: _____ Signed: _____

Date: _____ Date: _____

Comments: _____

SECTION 26 05 00

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.01 SCOPE

- A. Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

1.02 GENERAL PROVISIONS

- A. In general, the work includes: Electrical work and the kindred materials and operations as indicated on the drawings and as specified in the following articles of Section 26 05 00.
- B. Job Information: Obtain at building including:
 - 1. Conditions affecting this Section of the Work.
 - 2. Accessibility
 - 3. Storage space.

1.03 GENERAL REQUIREMENTS

- A. This Section of the Specifications applies to all electrical work. Section 01 00 00 form a part of these specifications and the Contractor shall consult them in detail. Electrical work indicated in other Sections of the Specifications to be done by the Electrical Contractor shall be included in the Work of this Section.

1.04 DEFINITIONS

- A. Certain terms used herein; on the drawings; and in the contract documents, shall be defined as follows:
- B. Provide: Furnish and install complete and ready for service.
- C. Exposed: Exposed to view in any room, hallway, passageway, or outside.
- D. Approval: The approval of the Engineer in writing or by signed rubber stamp applied to drawings, illustrations, etc.

1.05 INTENT OF DRAWINGS AND SPECIFICATIONS

- A. These specifications and attendant drawings are intended to cover a complete installation of systems. The omission of expressed reference to any item of labor or material necessary for the proper execution of the work in accordance with present practice of the trade shall not relieve the Contractor from providing such additional labor and materials.

1.06 DRAWINGS

- A. The Electrical drawings do not attempt to show the complete details of building construction which affect the electrical installation. The Contractor shall refer to the architectural, civil, structural and mechanical drawings for additional details which affect the proper installation of this work. The Contractor is cautioned that diagrams showing electrical connections and/or circuiting are diagrammatic only and must not be used for obtaining lineal runs of wire to conduit. Wiring diagrams do not necessarily show the exact physical arrangement of the equipment.

1 1.07 MATERIAL AND EQUIPMENT

2 A. All material and equipment shall be new and of the quality used for the purpose in good commercial
3 practice, and shall be standard product of reputable manufacturers. Each major component of
4 equipment shall have the manufacturer's name, catalog number, and capacity or rating on a nameplate,
5 securely affixed on the equipment in a conspicuous place.

6 1.08 SUBSTITUTION AND APPROVAL OF MATERIAL

7 A. See Section 01 00 00.

8 B. Such requests shall be accompanied by three copies of all necessary illustrations, cuts, drawings and
9 descriptions of material proposed for substitution and shall fully describe all points in which it differs
10 from the articles specified. Two copies will be retained by the Engineer and one copy returned to the
11 Contractor with approval or revisions indicated thereon.

12 1.09 DAMAGE TO OTHER WORK

13 A. The Electrical Contractor will be held rigidly responsible for all damages to the work of his own or
14 any other trade resulting from the execution of his work. It shall be the Contractor's responsibility to
15 adequately protect his work at all times. All damages resulting from his operations shall be repaired
16 or the damaged portions replaced by the party originally performing the work, (to the entire
17 satisfaction of the Engineer), and all cost thereof shall be borne by the Contractor responsible for the
18 damage.

19 1.10 COOPERATION WITH OTHER TRADES

20 A. This Contractor shall completely cooperate with all other trades in the matter of planning and
21 executing of the work. Every reasonable effort shall be made to prevent conflict and interferences as
22 to space requirements, dimensions, locations, openings, sleeving or other matters which tend to delay
23 or obstruct the work of any trade.

24 1.11 NEGLIGENCE

25 A. Should the Contractor fail to provide materials, templates, etc., or other necessary information causing
26 delay or expense to another party, he shall pay the actual amount of the damages to the party who
27 sustained the loss.

28 1.12 FIELD CHANGES

29 A. Should any change in drawings or specifications be required to comply with local regulations and/or
30 field conditions, the Contractor shall refer same to Engineer for approval before any work which
31 deviates from the original requirements of the drawings and specifications is started. In the event of
32 disagreements as to the necessity of such changes, the decision of the Engineer shall be final.

33 1.13 CUTTING AND PATCHING IN NEW CONSTRUCTION

34 A. As necessary and with approval to permit the installation of conduit or any part of the work under this
35 branch. Any cost caused by defective or ill-timed work shall be by the party responsible therefor.
36 Patching of holes, openings, etc. resulting from the work of this branch shall be furnished by this
37 contractor.

38 B. See Section 01 00 00 for additional requirements.

39 1.14 COMPLETION DATES

40 A. This Contractor shall be in a position to meet all completion dates established by the Engineer and
41 shall furnish all labor of all classes required to meet such schedules and completion dates.
42

1 1.15 STANDARDS, CODES AND PERMITS

- 2 A. All work shall be installed in accordance with National, State and Local electrical codes, laws,
3 ordinances and regulations. Comply with all applicable OSHA regulations.
- 4 B. All materials shall have a U.L. label where a U.L. standards and/or test exists.
- 5 C. Prepare and submit to all authorities having jurisdiction, for their approval, all applications and
6 working drawings required by them.
- 7 D. Secure and pay for all permits and licenses required.

8 1.16 CLEAN-UP

- 9 A. This Contractor shall at all times keep the premises free from excessive accumulation of waste
10 material or rubbish resulting from his work, including tools, scaffolding and surplus materials, and he
11 shall leave his work broom clean or its equivalent.
- 12 B. In case of dispute, Engineer may order the removal of such rubbish and charge the cost to the
13 responsible contractor as determined by the Engineer. At the time of final clean-up all fixtures and
14 equipment shall be thoroughly cleaned and left in proper condition for their intended use.

15 1.17 SHOP DRAWINGS

- 16 A. Submit to Engineer for review, copies of manufacturer's shop drawings and/or equipment brochure
17 depicting:
- 18 1. Lighting Fixtures
- 19 2. Photovoltaic System
- 20 3. Other materials at the request of the Engineer
- 21 B. Shop drawings shall bear the Contractor's stamp indicating approval.
- 22 C. Any equipment fabrication prior to shop drawing review shall be at the Contractor's risk.

23 1.18 WORKMANSHIP

- 24 A. The installation of all work shall be made so that its several component parts will function as a
25 workable system complete with all accessories necessary for its operation, and shall be left with all
26 equipment properly adjusted and in working order. The work shall be executed in conformity with
27 the best accepted standard practice of the trade so as to contribute to efficiency and appearance. It
28 shall also be executed so that the installation will conform and adjust itself to the building structure,
29 its equipment and its usage.

30 1.19 DRAWINGS OF OTHER TRADES

- 31 A. The Contractor shall consult the drawings of the work for the various other trades; field layouts of the
32 parties performing the work of the other trades; their shop drawings, and he shall be governed
33 accordingly in laying out his work.
- 34 B. Specifically examine shop drawings to confirm voltage, current characteristics, and other wiring
35 requirements for utilization equipment. Bring any discrepancies to the attention of the A/E.

36 1.20 FIELD MEASUREMENTS

- 37 A. The Contractor shall take all field measurements necessary for his work and shall assume the full
38 responsibility for their accuracy.
- 39

1 1.20 STRUCTURAL INTERFERENCES

2 A. Should any structural interferences prevent the installation of the outlets, running of conduits, etc., at
3 points shown on drawings, the necessary minor deviation therefrom, as determined by the Engineer,
4 may be permitted. Minor changes in the position of the outlets or equipment if decided upon before
5 any work has been done by the Contractor shall be made without additional charge.

6 1.21 EXAMINATION OF PLANS, SPECIFICATIONS AND SITE

7 A. Before submitting a bid, the Contractor shall visit the site and familiarize himself with all features of
8 the building and site which may affect the execution of his work. No extra payment will be allowed
9 for the failure to obtain this information. If in the opinion of the Contractor there are omissions or
10 errors in the plans or specifications, the Contractor shall clarify these points with the Engineer before
11 submitting his bid. In lieu of written clarification by addendum, resolve all conflicts in favor of the
12 greater quantity or better quality.

13 1.22 GUARANTEE

14 A. The Contractor shall unconditionally guarantee his work and all components thereof, excluding
15 lamps, for a period of one year from the date of his final payment. He shall remedy any defects in
16 workmanship and repair or replace any faulty equipment which shall appear within the guarantee
17 period to the entire satisfaction of the Engineer at no additional charge.

18 1.23 TEMPORARY WIRING AND SERVICE

19 A. None required.

20 1.24 ELECTRICAL SERVICE

21 A. The electrical service is existing.

22 1.25 BRANCH CIRCUIT WIRING

23 A. See plans for general arrangement of circuits, conduit runs, and ratings of branch circuits and special
24 circuits.

25 B. Provide everything necessary to comply with the general scheme shown, including all types of
26 control.

27 C. Circuit numbers as shown on plans are for contractor to plan his wiring and for estimating purposes.
28 These numbers are not necessarily consecutive numbers of the panelboard breakers. Balanced load on
29 bus is to be the determining factor in arrangement of circuits. Balance loading to within 7 1/2%.

30 D. Minimum size of lighting system branch circuit conductors to be #12 AWG.

31 E. Conductors terminating at wired outlets shall extend at least eight (8) inches beyond outlet box
32 conduit fitting.

33 F. 120 volt circuit home runs greater than 50 feet in length shall have #10 AWG minimum size between
34 panel and first receptacle or fixture outlet.

35 G. The use of single-phase, multi-wire branch circuits with a common neutral is not permitted. All
36 branch circuits shall be furnished and installed with an individual accompanying neutral, sized the
37 same as the phase conductors.

38 1.26 MOTOR WIRING

39 A. Unless otherwise indicated on the drawings or elsewhere in these specifications, all motors shall be
40 furnished by others.

41 B. Motors shall be set in place by others and the associated motor starters and controllers shall be turned
42 over to this Contractor for erection and line voltage power wiring.

43 C. Any contractor supplying starters and controllers that are not part of this contract shall index same and

- 1 provide this Contractor with instructions as to proper location in sufficient time to permit the
2 installation of a concealed raceway system.
- 3 D. Where this Contractor is required to provide control wiring, the Contractor supplying the controllers
4 shall provide all necessary and required wiring diagrams for proper installation.
- 5 E. Low voltage (less than 115 volts) control wiring shall be by others, unless noted elsewhere in the
6 specifications except that this Contractor shall extend circuit to associated transformers, wire and
7 connect to same.
- 8 F. This Contractor shall examine the plans and specifications of other sections and shall include in his
9 bid all control wiring, as referenced to be performed by Section 26 05 00.
- 10 G. Required disconnect switches furnished by other sections shall be installed by Section 26 05 00.
11 Furthermore, this Contractor shall provide all disconnect switches required by code that are not
12 furnished by other sections.

13 1.27 SPECIAL OUTLETS

- 14 A. General: Furnish and install outlets, wiring and receptacles accordingly, at locations required by
15 equipment serviced or otherwise as directed. Extend wiring to outlets on equipment and make final
16 connection.

17 1.28 IDENTIFICATION

- 18 A. General:
- 19 1. Materials and equipment installed under this Section shall be clearly identified as listed below.
 - 20 2. Locate identification conspicuously.
 - 21 3. Terminology to be approved by Engineer.
 - 22 4. See plans for any additional items to be identified.
 - 23 5. Loads such as motors shall be described by function rather than by the system of arbitrary
24 number as shown on electrical plans.
 - 25 6. Use abbreviations sparingly.
- 26 B. Laminated Bakelite Plates: Engraved plastic nameplate shall be securely screwed or riveted to the
27 following equipment. Size 1" x 4" with 3/8" high letters; unless space available dictates differently.
- 28 1. Each panelboard, contactor, time switch, starter or disconnect switch. Locate on inside cover
29 of panels.
 - 30 2. Each feeder at all accessible locations.
 - 31 3. Each end of empty conduit runs to indicate the intended use of the conduit and the location of
32 opposite end. Use room numbers that are permanently assigned.
- 33 C. Typewritten Directory: Each panelboard both new and existing shall be provided with a typewritten
34 directory attached to the inside of panel door and covered with clear plastic indicating load served and
35 rooms served by each protective device in the respective panel. Spares and spaces shall be clearly
36 identified.
- 37
- 38 D. Switch Station:
- 39 1. All key switches shall be engraved indicating controlled item.
 - 40 2. All remote switches shall be engraved indicating controlled item.
- 41 E. Conductor Identification:
- 42 1. Identify each conductor at each wiring device, connector or splice point with permanently
43 attached wrap-around adhesive markers as manufactured by Brady Co. or 3M.
 - 44 2. This identification shall include branch circuit number, control circuit, or any other appropriate
45 number or lettering that will expedite future tracing and trouble shooting.

1 1.29 LOCATIONS OF OUTLETS AND WIRING DEVICES

2 A. Outlets:

- 3 1. Locations of outlets and electrical equipment on the drawings are approximate only. Unless
4 otherwise indicated on the drawings or established in the specifications, the exact locations of
5 electrical outlets shall be established in the field by directive from the Engineer. Generally,
6 outlets shall be located as required for proper installation of equipment served and otherwise
7 locations shall be established by construction or code requirements and such as to be
8 coordinated with equipment of other trades.
- 9 2. This Section shall consult with the Engineer and refer to all details, sections, elevations and
10 equipment plans and the plans of other trades for exact location.
- 11 3. The Engineer reserves the right to make reasonable changes in the location of outlets,
12 apparatus or equipment up to the time of roughing in. Such changes as directed shall be made
13 by the Contractor without additional compensation.
- 14 4. Dimensions taken by scale shall not be used to establish rough-in locations.

15 B. Wiring Devices:

- 16 1. The approximate location of wiring devices are indicated on the drawings; the specific location
17 shall be determined in accordance with "Location of Outlets" of these specifications and as
18 follows.
- 19 2. This Section is referred to equipment plans, equipment shop drawings, elevation drawings and
20 other detail or dimensional drawings, and he shall consult with the Engineer before installation
21 of proceeding with any work dependent upon this information.
- 22 3. Generally, wiring devices shall be located as follows:
- 23 a. Wall receptacles shall generally be centered 15" above the finished floor and 6" above
24 surface of built-in counters and tables where same abuts wall and 4" above
25 backsplashes if counters are so equipped.
- 26 b. Special purpose receptacles shall be located as required by equipment served.
- 27 c. Switches shall be centered 48" above finished floor on latch side of door opening with
28 edge of plate not more than 12" from door frame, except as noted on the drawings.
- 29 d. In hazardous areas, the location of wiring devices shall be established by Code
30 requirements which shall take precedence over conflicting information on the drawings
31 or included herein.

32 1.30 TELEPHONE SYSTEM

- 33 A. No work required.

34 1.31 SEALING AND FIREPROOFING

- 35 A. Sealing and fireproofing of openings between conduit, cable tray, wireway, trough, cablebus, busduct,
36 etc. and fire rated surfaces shall be the responsibility of the contractor whose work penetrates the
37 opening.
38 Sealing and fireproofing shall use materials and methods complying with ASTM E814 requirements
39 requirements appropriate to the rating of the material penetrated.

- 40 C. Materials by Dow-Corning, 3M, Specified Technologies, Inc., and Chase-Foam are acceptable if in
41 accordance with (B) above.

- 42 D. Submit manufacturer's penetration details to authority having jurisdiction. Details shall confirm
43 method's compliance with ASTM E814.

- 44 E. Include copies of penetration details in Project Operation and Maintenance Manuals.

45 1.32 ALTERNATE BIDS

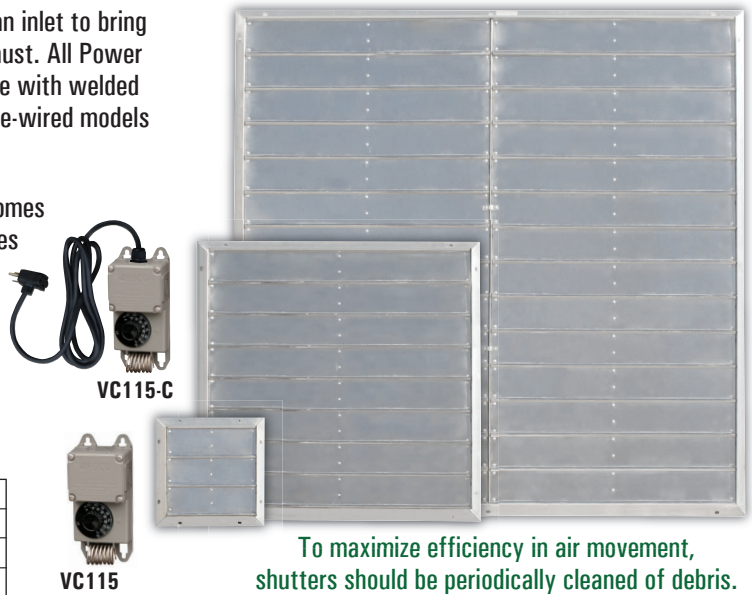
- 46 A. See Section 01 00 00 for descriptions of alternates required.

Aluminum Intake Power Shutter

Aluminum Power Shutters from J&D are designed to be used as an inlet to bring fresh air into your building, and may also be used for free-air exhaust. All Power Shutters include a shutter motor kit and aluminum extrusion frame with welded corners for extra strength. Order without a cord, or choose our pre-wired models for a "No Electrician Required" installation.

Features

- Includes shutter motor kit and hardware
- Efficient shutter with tie bar to reduce shutter flapping
- Nylon bushings and solid shafts for smooth performance
- Aluminum extrusion frame comes with pre-drilled mounting holes to save installation time
- Corners are precision milled and welded for durability
- Interlocking louvers for maximum weather seal



To maximize efficiency in air movement, shutters should be periodically cleaned of debris.

Power Shutter Pre-wired With 10' Cord

Part#	Size*	Panel	Rough Opening	Pre-wired for
VRSG12A-PSC	12" x 12"	Single	12.5" x 12.5"	115 Volts
VRSG16A-PSC	16" x 16"	Single	16.5" x 16.5"	115 Volts
VRSG18A-PSC	18" x 18"	Single	18.5" x 18.5"	115 Volts
VRSG20A-PSC	20" x 20"	Single	20.5" x 20.5"	115 Volts
VRSG24A-PSC	24" x 24"	Single	24.5" x 24.5"	115 Volts
VRSG30A-PSC	30" x 30"	Single	30.5" x 30.5"	115 Volts
VRSG36A-PSC	36" x 36"	Double	36.5" x 36.5"	115 Volts
VRSG40A-PSC	40" x 40"	Double	40.5" x 40.5"	115 Volts
VRSG42A-PSC	42" x 42"	Double	42.5" x 42.5"	115 Volts
VRSG48A-PSC	48" x 48"	Double	48.5" x 48.5"	115 Volts
VRSG54A-PSC	54" x 54"	Double	54.5" x 54.5"	115 Volts
VRSG60A-PSC	60" x 60"	Double	60.5" x 60.5"	115 Volts
VRSG75A-PSC	75" x 75"	Triple	75.5" x 75.5"	115 Volts

Optional Temperature Control

VC115-C	Single Stage Thermostat with 8' Piggyback Cord
---------	------------------------------------------------

*Actual inlet size excluding mounting flange

Power Shutter Without Cord

Part#	Size*	Panel	Rough Opening	Shutter Motor
VRSG12A-PS	12" x 12"	Single	12.5" x 12.5"	115/230 Volts
VRSG16A-PS	16" x 16"	Single	16.5" x 16.5"	115/230 Volts
VRSG18A-PS	18" x 18"	Single	18.5" x 18.5"	115/230 Volts
VRSG20A-PS	20" x 20"	Single	20.5" x 20.5"	115/230 Volts
VRSG24A-PS	24" x 24"	Single	24.5" x 24.5"	115/230 Volts
VRSG30A-PS	30" x 30"	Single	30.5" x 30.5"	115/230 Volts
VRSG36A-PS	36" x 36"	Double	36.5" x 36.5"	115/230 Volts
VRSG40A-PS	40" x 40"	Double	40.5" x 40.5"	115/230 Volts
VRSG42A-PS	42" x 42"	Double	42.5" x 42.5"	115/230 Volts
VRSG48A-PS	48" x 48"	Double	48.5" x 48.5"	115/230 Volts
VRSG54A-PS	54" x 54"	Double	54.5" x 54.5"	115/230 Volts
VRSG60A-PS	60" x 60"	Double	60.5" x 60.5"	115/230 Volts
VRSG75A-PS	75" x 75"	Triple	75.5" x 75.5"	115/230 Volts

Optional Temperature Control

VC115	Single Stage Thermostat without Cord
-------	--------------------------------------

*Actual inlet size excluding mounting flange

Power Shutter Pre-wired With 10' Cord

For "No Electrician Required" operation, choose our Aluminum Power Shutters pre-wired for 115 volts with a 10' cord. Combine with our VC115-C single stage thermostat with 8' cord to automatically open and close your shutter at the temperature set point. Simply plug the thermostat into your wall outlet, then plug your Power Shutter into the Piggyback on the thermostat for instant installation.

Shutter Motors and Shutter Motor Kits

Part#	Description
Shutter Motors	
VRSM10	Motor, 115/230V
VRSM10-C	Motor, Wired for 115V, with 10' Cord
Shutter Motor Kits (Motor & Hardware)	
VRS1260	Motor Kit, 12"-60" 1-2 Panel Shutter
VRS1260-C	Motor Kit, 12"-60" 1-2 Panel Shutter, with 10' Cord
VRS75	Motor Kit, 75" 3 Panel Shutter
VRS75-C	Motor Kit, 75" 3 Panel Shutter, with 10' Cord

Shutter Motor Kits Include:

- Motor
- Lever arm
- Mounting bracket with assembly hardware
- Chain
- S-Hooks
- Tension springs
- *VRS75 Series also includes Chain Tie Bar Assembly (not shown)



1 Year Warranty on Shutter Motor

⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.

Due to our continual effort to provide the best products available and adhere to market conditions; literature, products, prices and availability are subject to change without notice.

ES Shutter Fan

J&D Manufacturing's ES Shutter Fan is a durable agriculture grade exhaust fan perfect for barn and building peaks, greenhouses, warehouses and more. ES Shutter Fans are available without a cord, or pre-wired with a cord and plug for "No Electrician Required" installation. Fans ship fully assembled out of the box so you're up and running in no time!

Features

- Smooth and quiet operation
- Ships fully assembled and ready for installation
- Models with cord have 3-prong plug and are pre-wired for 115 Volts. No electrician required!
- Balanced 3 bladed prop with a corrosion resistant coated steel hub
- Coated steel guard allows for easy cleaning and meets OSHA 1910.212(a)(5) requirements to mount at any height on inlet side of fan. (When mounted, shutter side should be 7' above ground.)
- High efficiency aluminum shutters with tie bar to reduce shutter flapping and opening on windy days
- Fully enclosed, maintenance-free, direct drive high-efficiency motors feature sealed ball bearings and a **Two Year Warranty**



**No
Electrician
Required
for Corded Models**

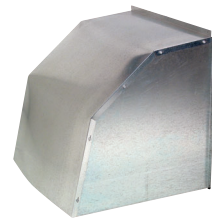
Part#	Size	Ph	Spd	@0.10" SP		Prop	Rough Opening
				CFM	CFM/Watt		
With Cord							
Single Phase							
VES10C	10"	1	3	480	6.4	3-Alm	12½" x 12½"
VES12C	12"	1	1/Var^	800	8.7	3-Alm	12½" x 12½"
VES161C	16"	1	1/Var^	1,220	11.9	3-Alm	16½" x 16½"
VES201C	20"	1	1/Var^	780	7.4	3-Alm	20½" x 20½"
VES20C	20"	1	1/Var^	2,760	9.2	3-Alm	20½" x 20½"
VES24C	24"	1	1/Var^	4,080	9.0	3-Alm	24½" x 24½"
VES30C	30"	1	1	5,840	10.3	3-Alm	30½" x 30½"
No Cord							
Single Phase							
VES12	12"	1	1/Var^	800	8.7	3-Alm	12½" x 12½"
VES161	16"	1	1/Var^	1,220	11.9	3-Alm	16½" x 16½"
VES201	20"	1	1/Var^	780	7.4	3-Alm	20½" x 20½"
VES20	20"	1	1/Var^	2,760	9.2	3-Alm	20½" x 20½"
VES24	24"	1	1/Var^	4,080	9.0	3-Alm	24½" x 24½"
VES30	30"	1	1	5,840	10.3	3-Alm	30½" x 30½"
Three Phase							
VES243	24"	3	1	4,080	9.0	3-Glv	24½" x 24½"
VES303	30"	3	1	5,940	12.1	3-Alm	30½" x 30½"

^ Variable speed fans require separate variable speed control to adjust fan speed.

Bold red text is data based on testing performed by an accredited lab using ANSI/AMCA Standard 230-12.

Optional Weather Hood

Shutter Fan Size	Weather Hood
10"	VFT140855
12"	VFT140855
16"	VFT140856
20"	VFT140857
24"	VFT140858
30"	VFT140859



Weather hood for exterior shutter side of fan

⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.

Due to our continual effort to provide the best products available and adhere to market conditions; literature, products, prices and availability are subject to change without notice.

Green Breeze HAF Fan

Greenhouses require a specialized HAF (Horizontal Air Flow) fan, and J&D Manufacturing's Green Breeze is the most versatile, energy efficient, best-valued HAF fan on the market today.

J&D's Green Breeze assists in reducing winter heating costs by efficiently moving air throughout the greenhouse creating a more uniform temperature. Then for overall improved plant health and to harden plants before shipping them to market, reduce the fan speed and adjust the air pattern towards the plants to stimulate hardiness and growth.

No electrician needed!
**Hang it up
Plug it in**

Features

- Available in 12", 20" and 24"
- Includes hot dip galvanized mounting bracket with u-bolts and hardware
- **Patented Open Front Guard** cuts maintenance time and costs
- Variable speed motors for year-round air circulation (requires separate variable speed control to adjust fan speed)
- Attached 10' cord with 3-prong plug pre-wired for 115 Volts
- Direct drive - no belts or bearings to maintain
- Corrosion resistant, white powder coated guards
- Mounting bracket mounts directly to the yoke of motor to reduce vibration for smooth fan operation
- Fan ships completely assembled and ready for installation
- The tapered side guard creates a tight air pattern that throws air much farther than conventional basket fans
- Provides airflow that helps eliminate hot and cold spots throughout the greenhouse
- Totally enclosed, maintenance-free, high-efficiency motors have completely sealed ball bearings, UL and CUL recognized, and are covered by a **Two Year Warranty**
- Can be used with our misting/fogging product lines to reduce temperature and/or increase humidity for plants



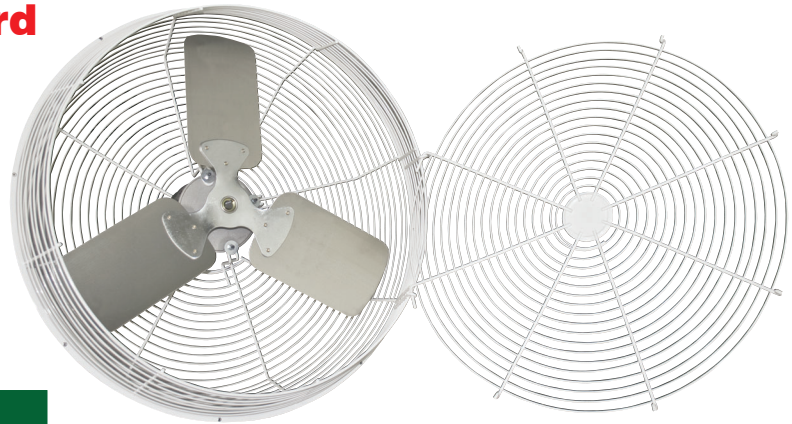
⚠ WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.

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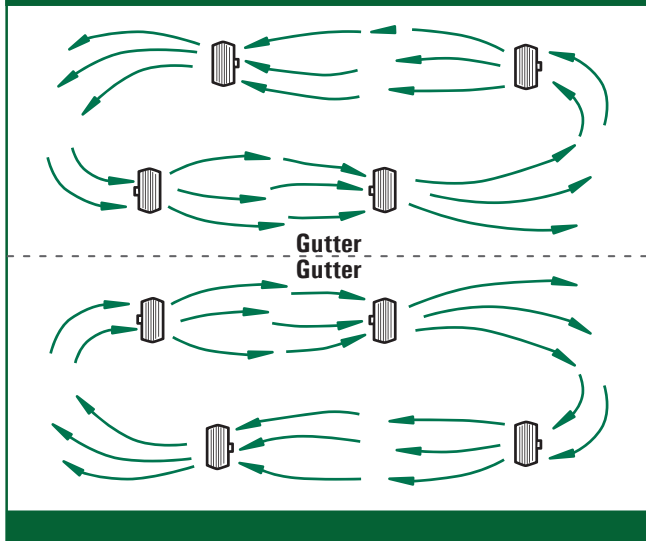
Green Breeze HAF Fan

Patented Open Front Guard

The Green Breeze is the only HAF fan on the market with the patented open front feature. The unique design helps cut cleaning time and maintenance costs so you are back to full energy efficient, high-output operation in no time. U.S. patent No. 5,348,447



Structure air-flow pattern for gutter connected greenhouses



J&D Manufacturing's design allows for more air flow and a consistent air pattern. This maximizes heat distribution and humidity control by mixing the air, from ceiling to floor – under, over and around your plants.

The Green Breeze HAF fan has precise guard spacing to greatly reduce air restriction when compared to conventional basket fans. Wider gaps also minimizes dirt bridging on the guards ensuring a more uniform performance between cleaning and longer motor life.

Part#	Size	Ph	Spd	Thrust CFM	Thrust CFM/Watt	Drive	Prop	Included Bracket
Single Phase								
VBG12	12"	1	1/Var^	1,020	8.8	Direct	3-Alm	VRSBR736-U
VBG20	20"	1	1/Var^	3,050	11.8	Direct	3-Alm	VRSBR8-U
VBG24	24"	1	1/Var^	5,250	12.1	Direct	3-Alm	VRSBR5-U

~ These units come pre-wired for 115 Volts (electrician may rewire for 230 Volts)

^ Variable speed fans require separate variable speed control to adjust fan speed

Bold red text is data based on testing performed by an accredited lab using ANSI/AMCA Standard 230-12

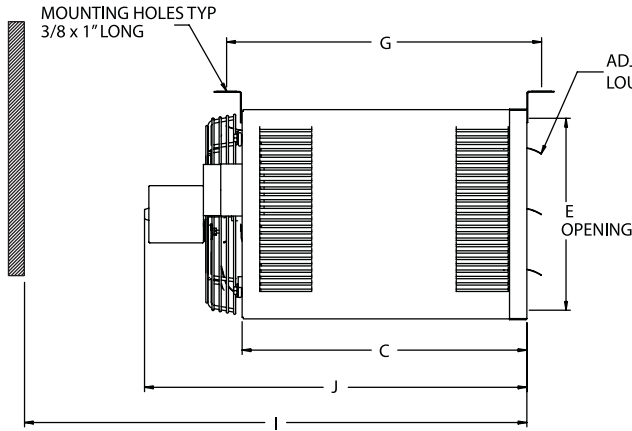
OSHA requires this fan to be mounted a minimum of 7' above the floor

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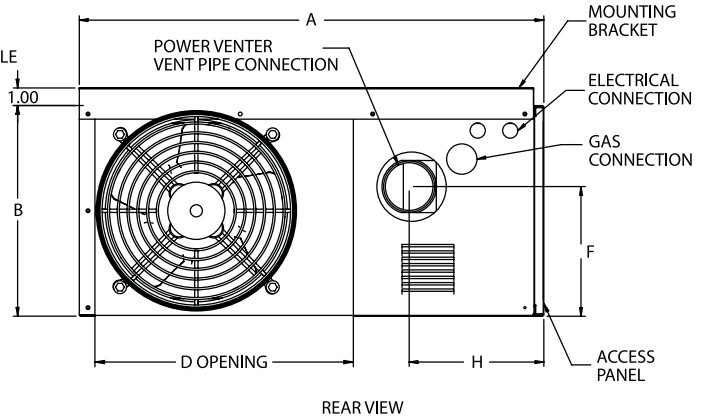
Due to our continual effort to provide the best products available and adhere to market conditions; literature, products, prices and availability are subject to change without notice.



Power-Exhausted, Gas-Fired Unit Heater Specifications



ACCESS VIEW



REAR VIEW

Performance

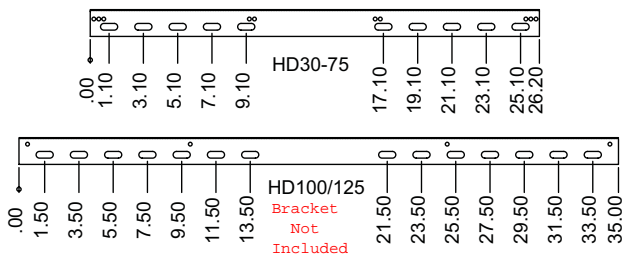
Models	HD30	HD45	HD60	HD75	HD100	HD125
Btu/Hr Input	30,000	45,000	60,000	75,000	100,000	125,000
Btu/Hr Output	24,000	36,000	48,000	60,000	80,000	100,000
Entering Airflow (CFM)	505	720	990	1,160	1,490	1,980
Outlet Velocity	523	749	653	769	565	747
Air Temp. Rise (°F)	44	46	45	48	50	47
Mounting Height (Max ft.)	10	10	12	14	12	16
Heat Throw (ft.)	25	27	36	38	42	56
Motor Data	Horsepower	1/15	1/15	1/12	1/12	1/8
	RPM	1,550	1,550	1,625	1,625	1,050
	Type	S.P.	S.P.	P.S.C.	P.S.C.	S.P.
	Amps	2.4	2.4	1.2	1.2	2.7
Unit Total Amps	3.7	3.7	2.5	2.5	4.7	4.2
Vent Connector Size (in.)	3	3	3	3	4	4

Dimensions (inches)

Models	HD30	HD45	HD60	HD75	HD100/125
A	26.8	26.8	26.8	26.8	35.5
B	12.2	12.2	18.0	18.0	20.5
C	16.5	16.5	16.5	16.5	22.0
D	14.9	14.9	14.9	14.9	22.5
E	10.1	10.1	15.9	15.9	18.4
F	7.5	7.5	10.7	10.7	14.0
G	18.5	18.5	18.5	18.5	24.0
H	7.6	7.6	7.8	7.8	8.4
Gas Connection	1/2	1/2	1/2	1/2	1/2
I	34.5	34.5	34.5	34.5	43.0
J	22	22	25	25	31.0
Fan Diameter	10	10	14	14	18.0
Approx. Shipping Weight (lbs.)	55	60	80	85	125

Mounting

1" - angle, mounting brackets are slotted to accommodate joists on 16" or 24" centerlines.



Clearances

Unit Side	Clearance To Combustible Materials	Recommended Service Clearance
Top and Bottom	1"	1"
Access Side	18"	18"
Non-Access Side	1"	1"
Rear	18"	18"
Vent Connector	4"	4"

Control Options

Control Description	Control Code No.	Service Voltage	Thermostat Voltage	Type of Gas	Model Size
Single-Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry - Utilizes a single-stage combination gas control with ignition control. Gas is lit with a direct spark igniter on call for heat.	11	115V	24V	natural	30-125
	21	115V	24V	propane	30-125
Two-Stage, Direct Spark Ignition, 100% Shut-Off with Continuous Retry - Utilizes a two-stage combination gas control with built-in ignition control. Firing rate is 100% and 50% of full rated input. Gas is lit with a direct spark igniter on call for heat. ③	12	115V	24V	natural	75-125
	22	115V	24V	propane	75-125

VC012 & VC012-C

Simple Single Stage Dependable Thermostat

J&D Manufacturing's rugged VC012 thermostat is perfect for applications that require a simple control. It may be wired for heating or cooling to control your exhaust fan, circulation fan, power shutter, heater or heat lamp. For plug-and-go operation, the VC012-C is pre-wired with a 115 Volt 8' piggyback cord. Simply plug the thermostat into a grounded outlet, then plug your exhaust fan, circulation fan, or power shutter into the back of the thermostat plug for instant operation. No electrician required!

Features

- Rugged UL50 Type 2 enclosure
- Use for heating or cooling
- Large visible dial
- 2.4°F (1.3°C) differential
- Coiled stainless steel sensor provides rapid response to temperature change
- Recalibratable
- UL listed (File# E357053)



Part#	Description	Dial Set Points	Size	Volts	Hz	Amps	Stages
VC012	Single Stage Thermostat	40° to 100°F (5°to 38°C)	4½" x 6¾" x 2½"	120-240	50/60	12/10	1
VC012-C	Single Stage Thermostat with 8' Cord	40° to 100°F (5°to 38°C)	4½" x 6¾" x 2½"	120-240	60	12/10	1

HEATING

COOLING

VC115, VC115-C & VC109

Single Stage & 2 Stage Moisture Proof Thermostat

J&D Manufacturing's rugged VC115 thermostat is perfect for applications that require a simple weather resistant control. It may be wired for heating or cooling to control your exhaust fan, circulation fan, power shutter, heater or heat lamp. For plug-and-go operation, the VC115-C is pre-wired with a 115 Volt 8' piggyback cord. Simply plug the thermostat into a grounded outlet, then plug your exhaust fan, circulation fan, or power shutter into the back of the thermostat plug for instant operation. No electrician required!

The VC109 is a durable, dual stage thermostat that is ideal for greenhouses, animal confinement buildings, walk-in coolers, freezers, garages, warehouses and any other application requiring a weatherproof mechanical thermostat.

Features

- Rugged, weather resistant NEMA 4x enclosure
- Use for heating or cooling
- Large visible dial
- 3°F (1.3°C) differential
- Coiled stainless steel sensor provides rapid response to temperature change
- UL listed (File# E50023)
- CSA certified (#030247 0 000)



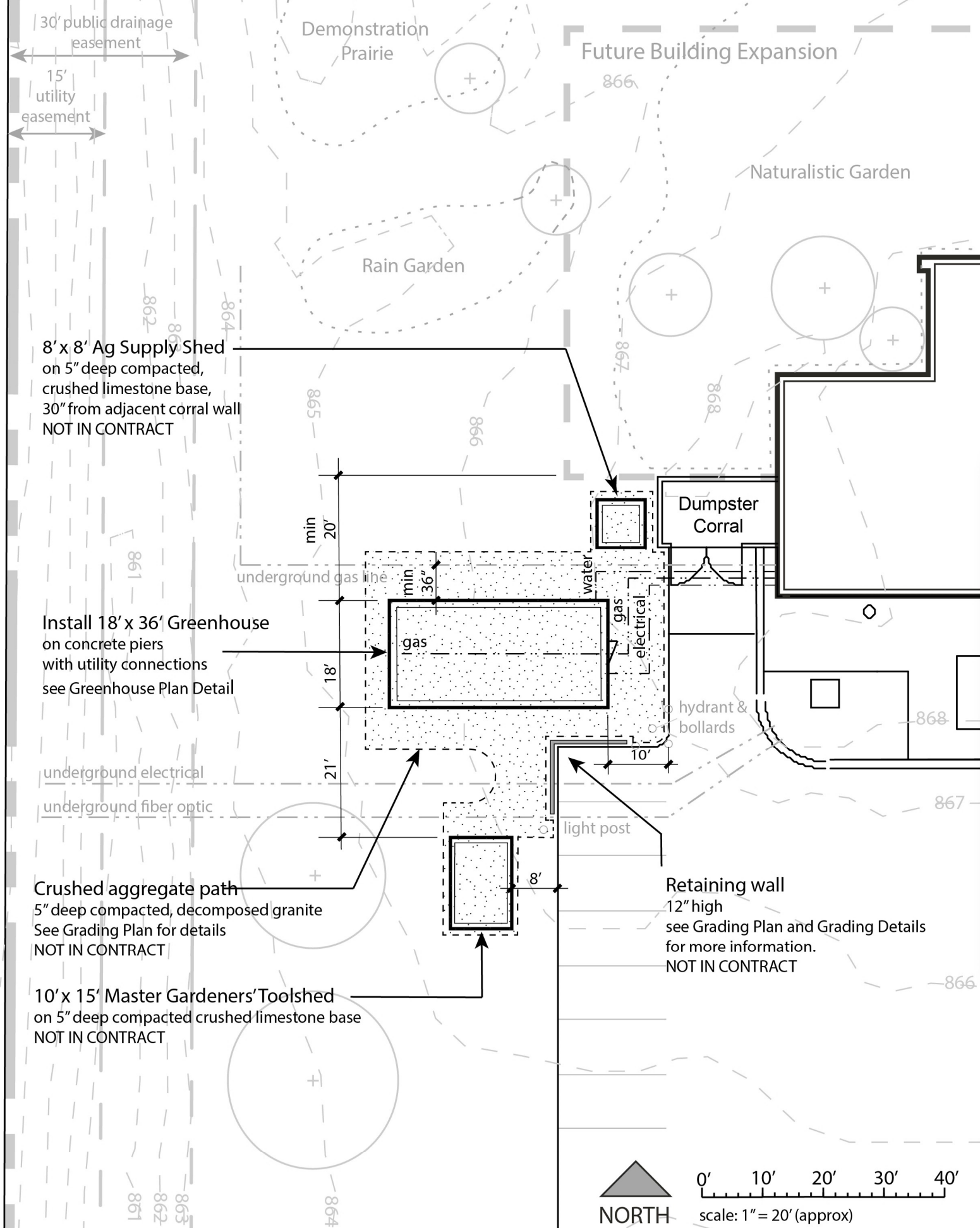
Part#	Description	Dial Set Points	Size	Volts	Hz	Amps	Stages
VC115	Single Stage Thermostat	40° to 110°F (5°to 43°C)	3" x 6½" x 2½"	115/230/277	50/60	16/12/10	1
VC115-C	Single Stage Thermostat with 8' Cord	40° to 110°F (5°to 43°C)	3" x 6½" x 2½"	115	60	16/12/10	1
VC109	Two Stage Moisture Proof Thermostat	40° to 100°F (5°to 38°C)	3½" x 7" x 5"	115/230/277	50/60	16/12/10	2

⚠ WARNING: This product can expose you to chemicals including chromium, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov/product.

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Agriculture Drive

Lyman F. Anderson Agriculture and Conservation Center
5201 Fen Oak Drive



8' x 8' Ag Supply Shed
on 5" deep compacted,
crushed limestone base,
30" from adjacent corral wall
NOT IN CONTRACT

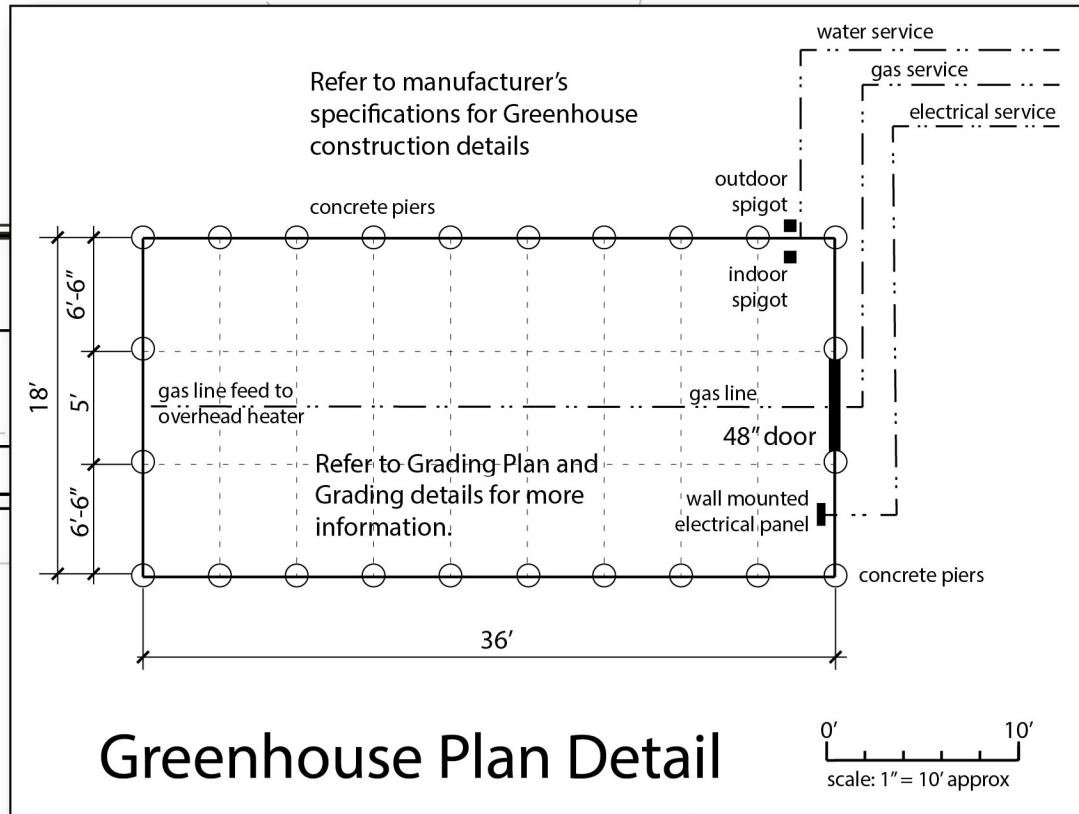
Install 18' x 36' Greenhouse
on concrete piers
with utility connections
see Greenhouse Plan Detail

Crushed aggregate path
5" deep compacted, decomposed granite
See Grading Plan for details
NOT IN CONTRACT

10' x 15' Master Gardeners' Toolshed
on 5" deep compacted crushed limestone base
NOT IN CONTRACT

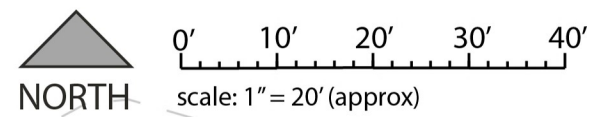
Dumpster Corral

Retaining wall
12" high
see Grading Plan and Grading Details
for more information.
NOT IN CONTRACT



Greenhouse Plan Detail

0' 10'
scale: 1" = 10' approx



Site Plan - Greenhouse & Shed Additions
Extension Dane County Teaching Garden
December 16, 2020

Fen Oak Greenhouse

5201 Fen Oak Dr., Madison, WI 53718

Division of International Greenhouse Company

Submitted For:	Submitted On:	Rev. Desc.
Distribution		

**GREENHOUSE SITE LOCATION
SITE PREP:**

*IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE SITE PREP HAS BEEN COMPLETED BEFORE INSTALLATION OF THE GREENHOUSE.

**18'-0" X 36'-0"
JUNIOR TEACHING PACKAGE**

BASIS OF DESIGN

NOTE
Greenhouse equipment drawings are for equipment layout only. Please refer to the manufactures installation instructions and prints for the installation of the greenhouse frame and covering.



Greenhouse
Megastore
70 Eastgate Drive
Danville, IL 61834
Phone: 217-709-1832
greenhousemegastore.com

CONTACT INFORMATION
PROJECT MANAGER: RYAN SHORE
PHONE: 608-445-0109
EMAIL: shore@countyofdane.com

Product: **Junior Package**

THE FOLLOWING ITEMS ARE TO BE FURNISHED BY THE CONTRACTOR :

1. CONCRETE FOOTINGS
2. ALL ELECTRICAL WIRING, CONDUIT, SUB-PANEL AND WIRE CONNECTIONS.
3. ALL MECHANICAL HOOK-UPS, WHICH INCLUDES ALL GAS, WATER AD VENT PIPE ROUGH-IN AND FINAL CONNECTIONS
4. ALL NECESSARY PERMITS AND RELATED FEES

TABLE OF CONTENTS

- 001 COVER PAGE
- 002 CONSTRUCTION DETAILS
- 003 EQUIPMENT PLAN
- 004 ELEVATIONS
- 005 ELECTRICAL PLAN
- 006 MECHANICAL PLAN
- 007 TYPICAL SECTIONS

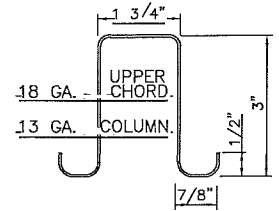
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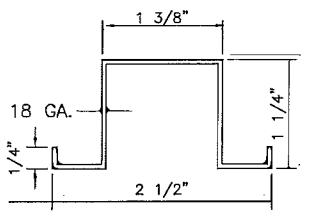
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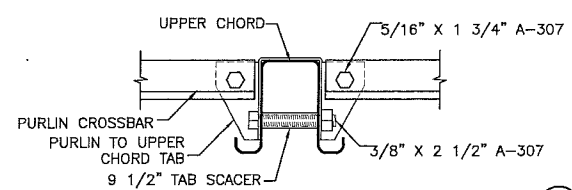
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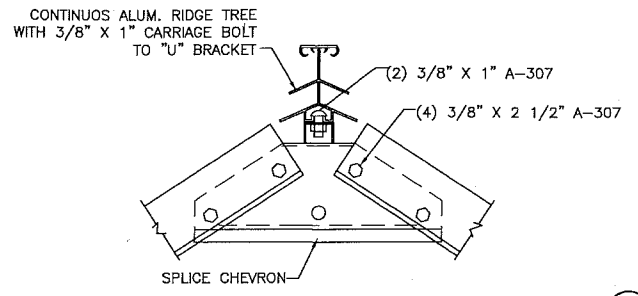
UPPER CHORD / COLUMN ①
SCALE: NTS



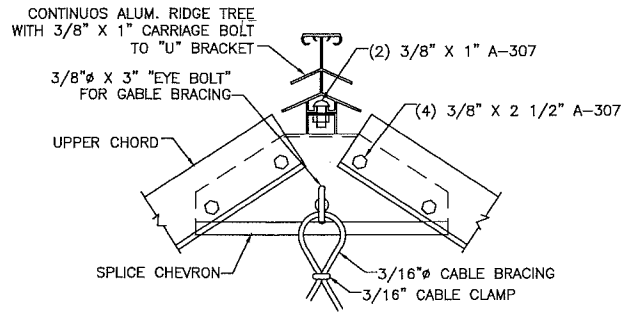
PURLIN / GIRT ②
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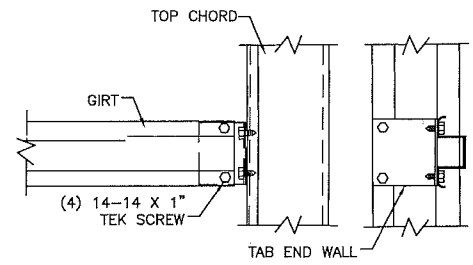
PURLIN / GIRT TO UPPER CHORD ③
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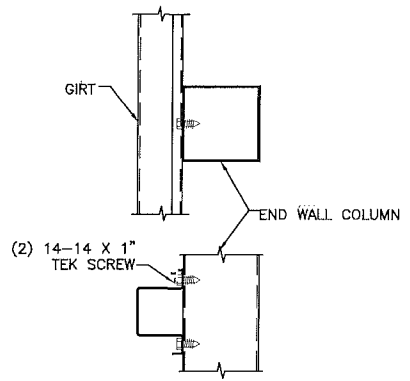
CHEVRON CONN. TO UPPER CHORD ④
SCALE: NTS



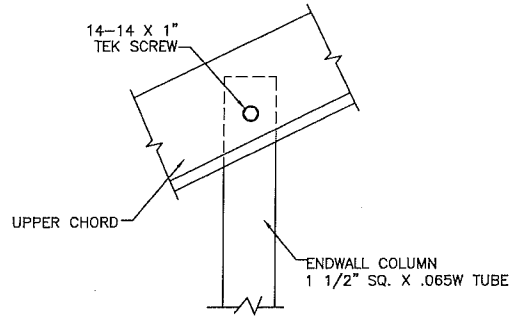
CHEVRON CONN. TO UPPER CHORD ⑤
SCALE: NTS



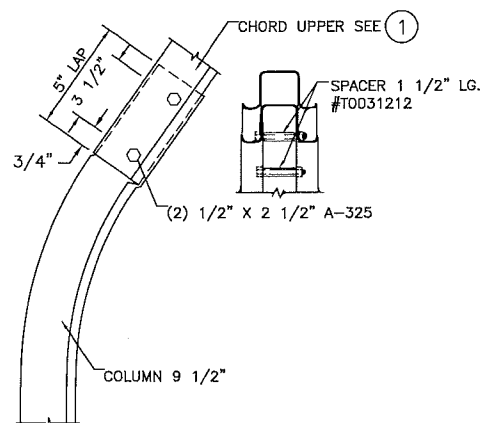
SIDEWALL AND ENDWALL UPRIGHT CONN. ⑥
SCALE: NTS



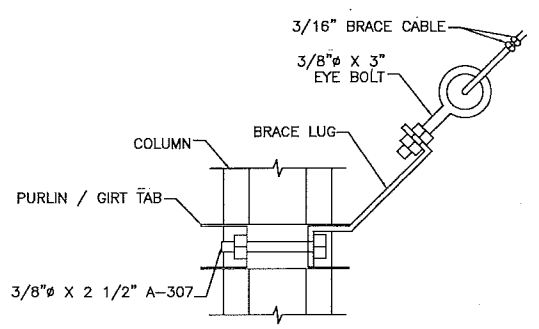
GIRT CONN. AT ENDWALL COLUMN ⑦
SCALE: NTS



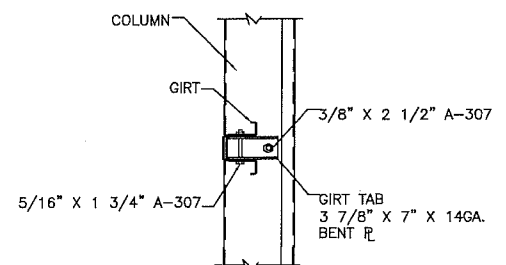
END WALL UPRIGHT AT CHORD ⑧
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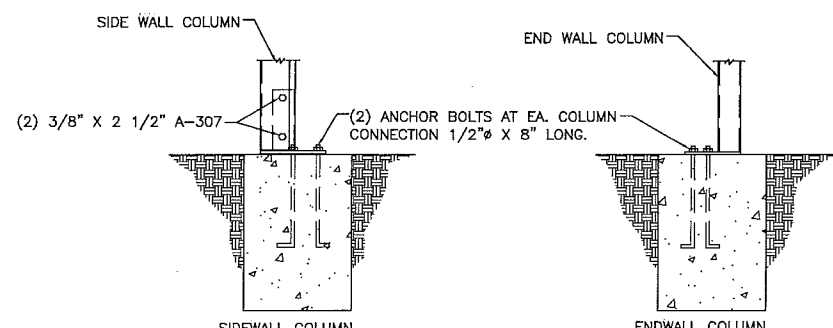
COLUMN CONN. TO UPPER CHORD ⑨
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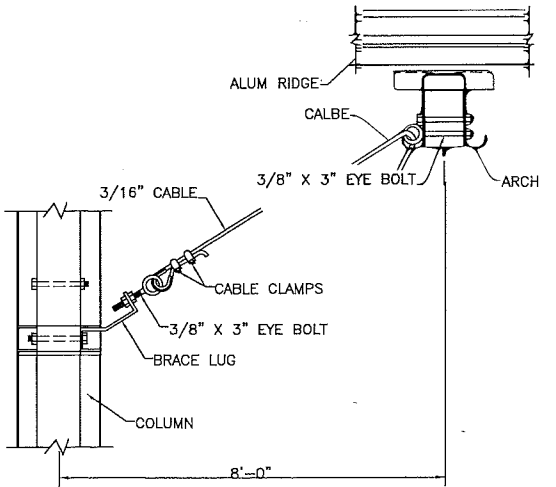
BRACE CABLE CONNECTION ⑩
SCALE: NTS



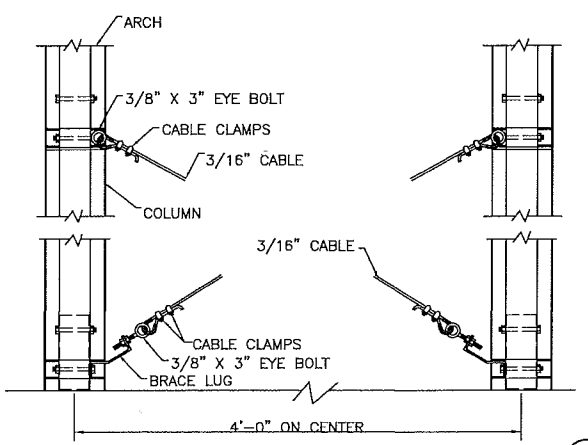
GIRT AT COLUMN CONNECTION ⑪
SCALE: NTS



SIDEWALL AND ENDWALL UPRIGHT CONN. ⑫
SCALE: NTS



CABLE BRACING AT RIDGE ⑬
SCALE: NTS



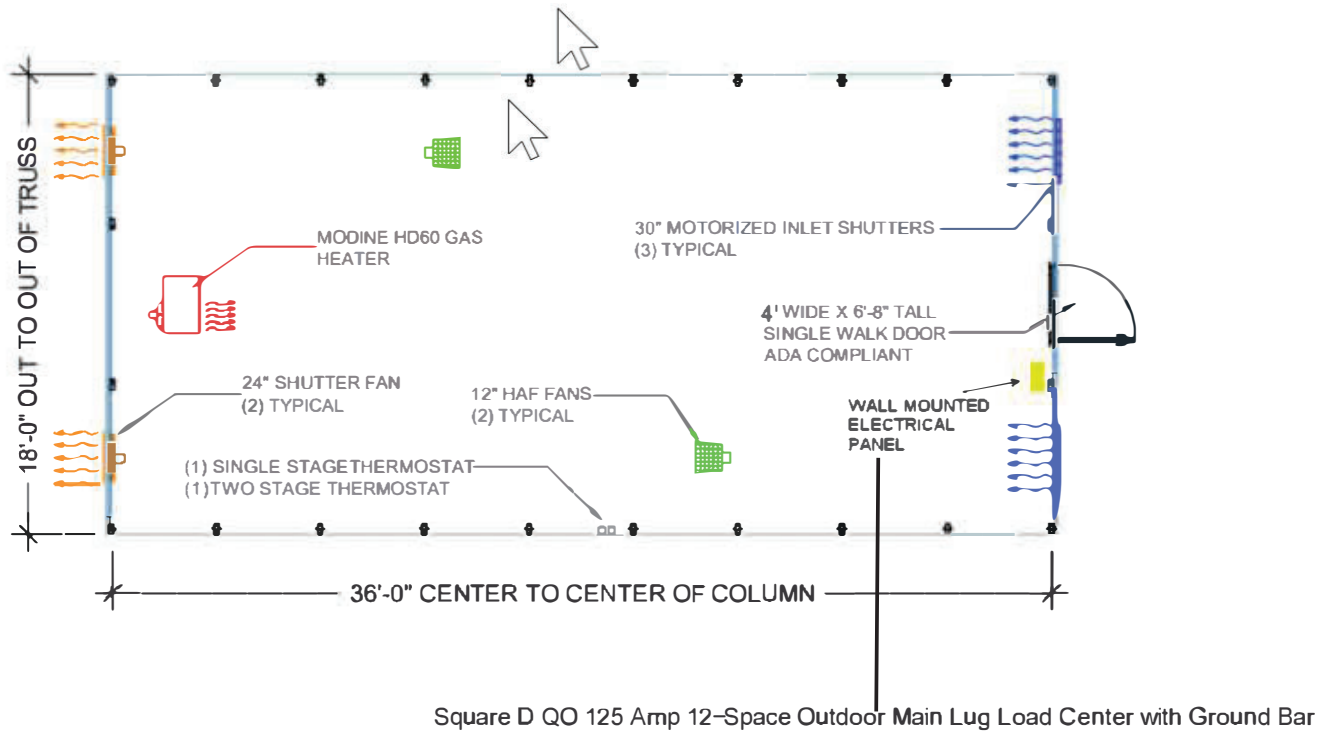
COLUMN \"X\" BRACING ⑭
SCALE: NTS

REVISIONS	
Δ	AGM 07/22/19
Δ	
Δ	
Δ	
Δ	

DATE	07/08/2019
SCALE	N.T.S.
JOB NO	71645
DRAWN BY	AGM
APPROVED	

TITLE	FRAMING & FOOTING DETAILS
JOB NAME	FEN OAK GREENHOUSE
ENGINEER	
LOADING	20GS-105-C
DRAWING NO.	
DRAWING SET	
SHEET	2 OF 2
CERTIFICATION	

I:\0708\19\07\ENGINEER\HOBBY-HOUSE EX.DWG 14599.DWG



Submitted For:	Submitted On:	Rev. Description
Distribution		

NOTE
Greenhouse equipment drawings are for equipment layout only. Please refer to the manufactures installation instructions and prints for the installation of the greenhouse frame and covering.



Greenhouse Megastore
70 Eastgate Drive
Danville, IL 61834
Phone: 217-709-1832
greenhousemegastore.com

Product: **Junior Package**

Customer:

Drawn By: **JBB**

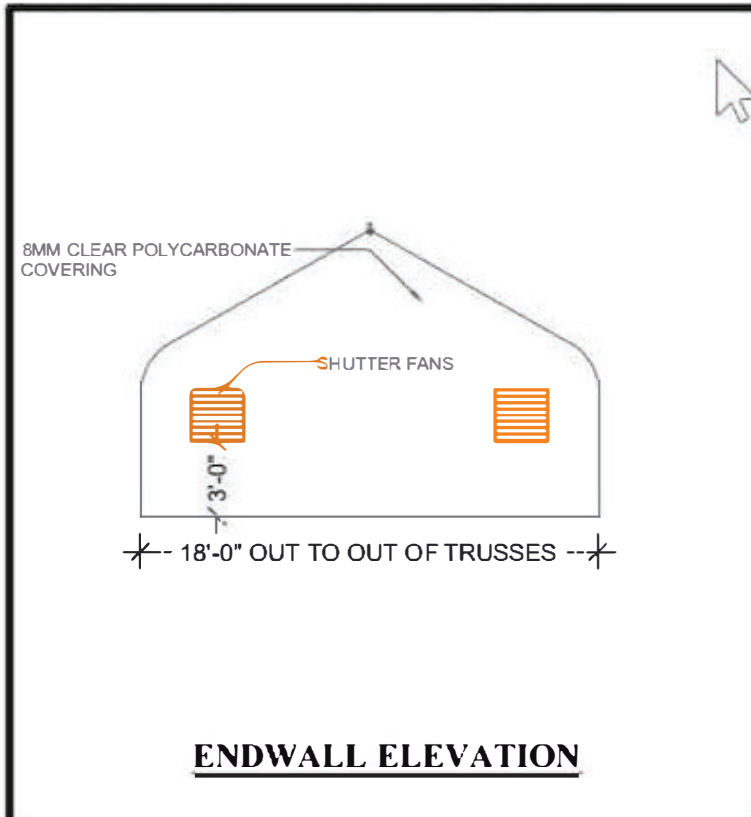
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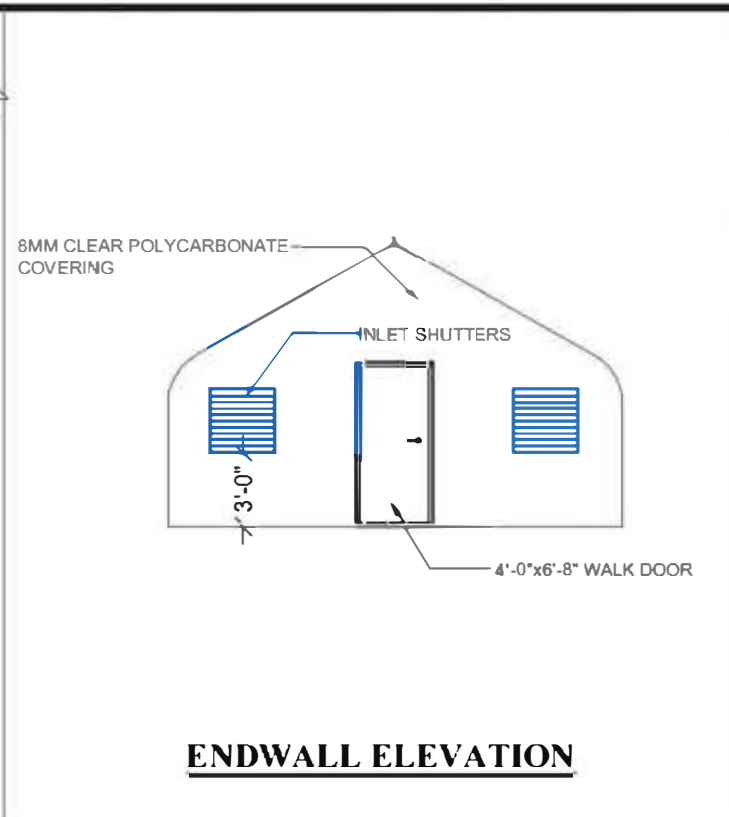
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EQUIPMENT PLAN

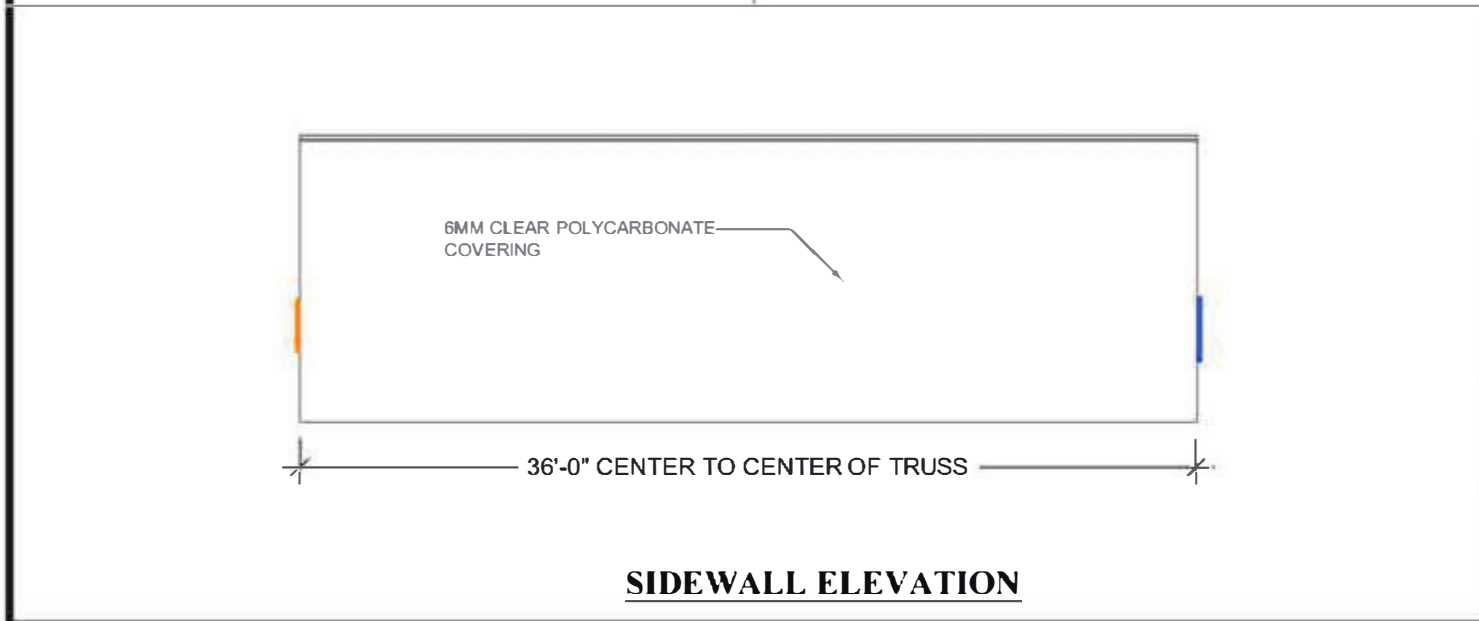
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ENDWALL ELEVATION



ENDWALL ELEVATION



SIDEWALL ELEVATION

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greenhousemegastore.com

Product: **Junior Package**

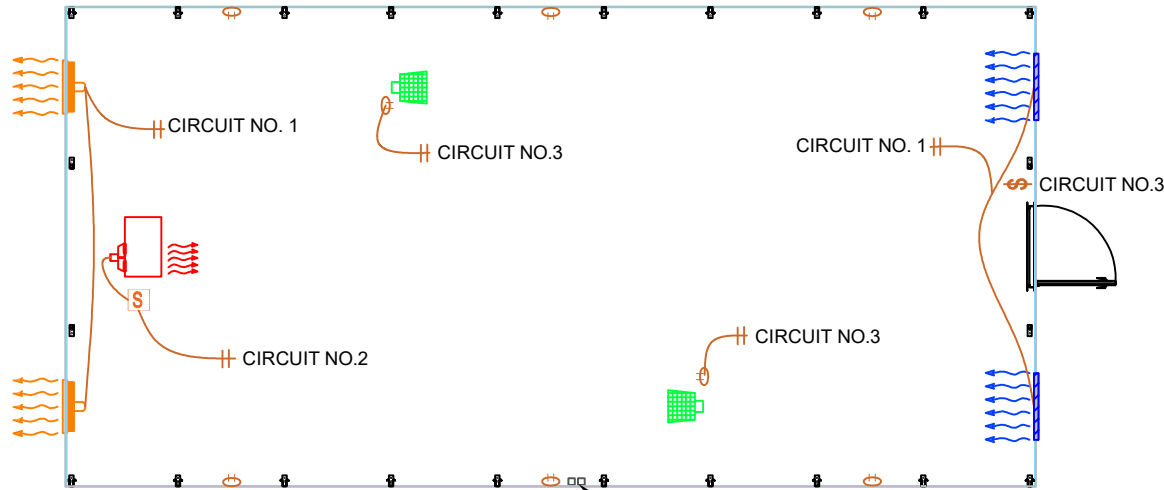
Customer:

Drawn By: **JBB**

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Page No.: **004**

of: **007**



(1) SINGLE STAGE THERMOSTAT (HEATER) CIRCUIT 2
 (1) TWO STAGE THERMOSTAT (COOLING) CIRCUIT 1

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TAG	QTY	DESCRIPTION	IGC MODEL #	MANUFACTURE MODEL #	AMPS	HP	VOLTS	FUEL SOURCE
A	2	24" SHUTTER FAN	VES-24	J&D MANUFACTURING: VES 24	4.8 AMPS	1/2	115/230	ELECTRIC
B	1	MODINE GAS HEATER 60,000 BTU	HD60A-01	MODINE: HD60	2.5 AMP	1/12	115	NATURAL/PROPANE
C	2	12" HORIZONTAL AIR FLOW FAN	FA-VBG 12	J&D MANUFACTURING: VBG12	1.12/0.56 AMPS	1/10	115	ELECTRIC
D	3	30" MOTORIZED INLET SHUTTERS	FA-VRSG30A	J&D MANUFACTURING: VRSG30A	.56 AMP		115	ELECTRIC
E	1	COOLING THERMOSTAT	CT-1005	J&D MANUFACTURING: VC109			115	ELECTRIC
F	1	HEATING THERMOSTAT	CT-VC115	J&D MANUFACTURING: VC115			115	ELECTRIC
G								
H								

Product: **Junior Package**

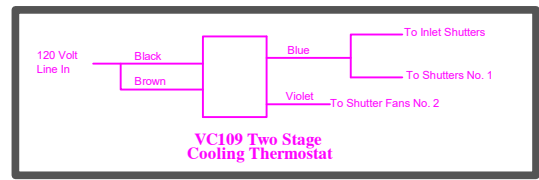
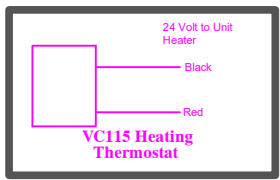
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Drawn By: **JBB**

Checked By:

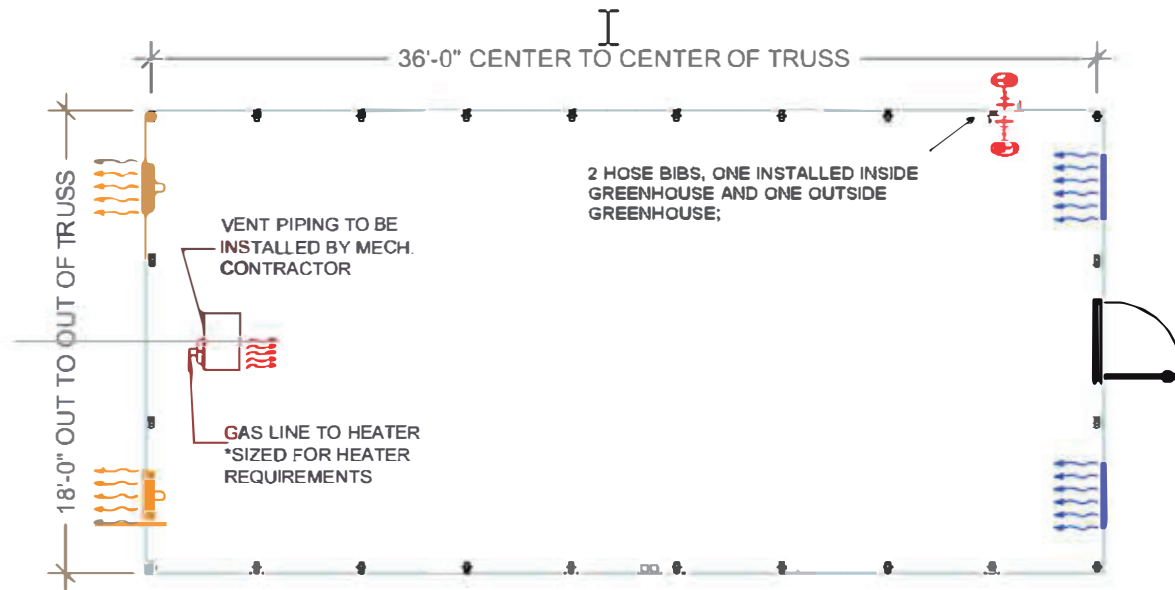
Page No.: **005**

of: **007**



- ⏏ 15 AMP 1 POLE SWITCH
 - Ⓜ MOTOR RATED DISCONNECT
 - Ⓜ 15 AMP GFCI RECEPTACLE
- NOTES:**
- ALL WIRING WILL BE INSTALLED IN EMT CONDUIT WITH COMPRESSION COUPLINGS.
 - ALL JUNCTION AND PULL BOXES WILL BE NEMA 3R
 - ALL FLEXIBLE CONDUIT WILL BE SEALTIGHT WITH BOND UNDER GROUND.
 - ALL CONDUCTORS WILL BE COPPER THHN OR THWN
 - ALL CIRCUITS ARE 120V, 20AMP
 - ALL WIRING TO BE DONE IN ACCORDANCE WITH NATIONAL ELECTRIC CODE
 - ALL WORK TO BE DONE BY COMPETENT ELECTRICIAN.
 - ALL WORK TO CONFORM TO LOCAL BUILDING AND ELECTRICAL CODES.

ELECTRICAL PLAN
 Scale: 3/8" = 1' - 0"



- INTERIOR HOSE BIB-SERVED WITH 3/4" WATER LINE F B O
- EXTERIOR FROST PROOF HOSE BIB-SERVED WITH 3/4" WATER LINE F B O

NOTES:
 1. HB-2 HOSE BIB IS TO A FROST PROOF HOSE BIB.

1. PLUMBING PLAN IS DESIGNED TO SHOW A GENERAL LAYOUT OF HOSE BIB LOCATIONS. ALL HOSE BIBS AND CONNECTIONS ARE TO BE FURNISHED BY CONTRACTOR
2. HOSE BIB QUANTITY AND LOCATIONS CAN BE ALTERED TO OWNERS RECOMMENDATIONS.
3. GAS PRESSURE NEEDS TO BE SIZED TO MEET HEATER DEMANDS.



MECHANICAL PLAN

Scale: 1/8" = 1' - 0"

Submitted For:	Submitted On:	Rev. Description
Distribution		

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 Danville, IL 61834
 Phone: 217-709-1832
 greenhousemegastore.com

Product: **Junior Package**

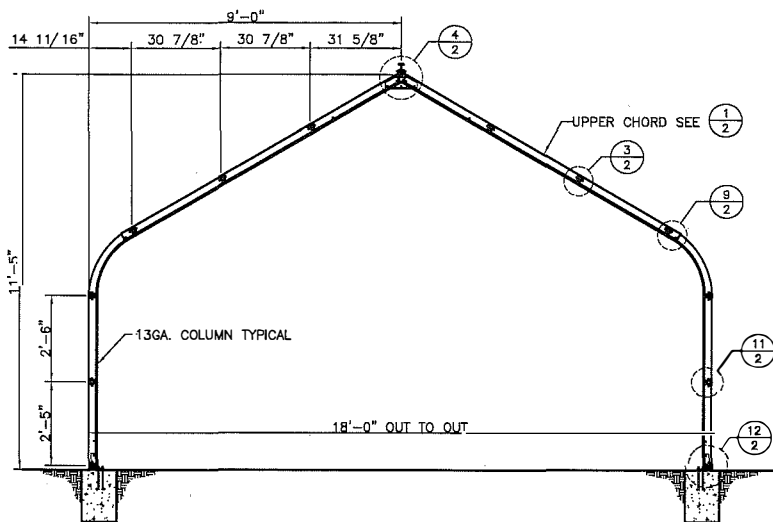
Customer:

Drawn By:

Checked By:

Page No.: **006**

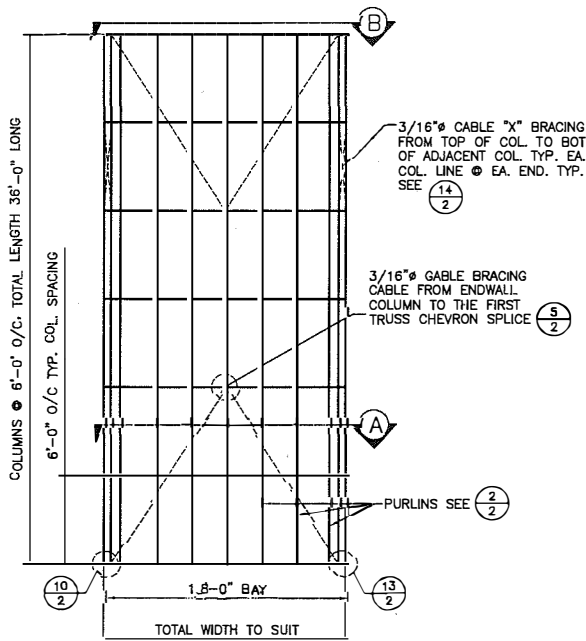
of: **007**



TYPICAL SECTION

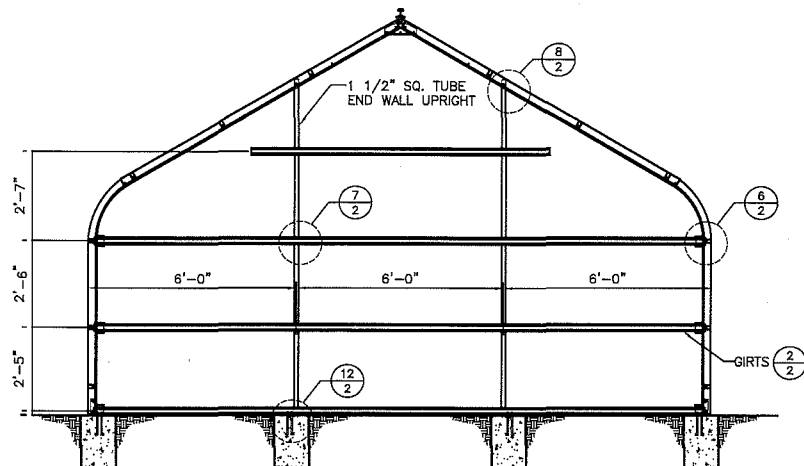
SCALE: 3/8" = 1'

(A)



TYPICAL PLAN VIEW

SCALE: NTS



TYPICAL ENDWALL

SCALE: 3/8" = 1'

(B)

BUILDING SPECIFICATIONS

THIS STRUCTURE HAS BEEN DESIGNED AND DETAILED FOR THE LOADS AND CONDITIONS SHOWN ON THESE DRAWINGS. ANY ALTERATIONS TO THE STRUCTURAL SYSTEM OR REMOVAL OF ANY COMPONENT PARTS OR THE ADDITION OF OTHER CONSTRUCTION MATERIALS OR LOADS MUST BE DONE UNDER THE ADVICE AND DIRECTION OF A REGISTERED ARCHITECT, CIVIL OR STRUCTURAL ENGINEER. CONLEY'S MANUFACTURING & SALES WILL ASSUME NO RESPONSIBILITY FOR ANY LOADS NOT INDICATED.

THIS METAL BUILDING IS DESIGNED WITH CONLEY'S MANUFACTURING & SALES DESIGN PRACTICES WHICH ARE BASED ON PERTINENT PROCEDURES AND RECOMMENDATIONS OF THE FOLLOWING ORGANIZATIONS AND CODES, AND ARE ACCEPTED PRACTICES IN THE LOW RISE METAL AND AGRICULTURAL BUILDING INDUSTRY.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION:
"SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" 9TH EDITION

AMERICAN IRON AND STEEL INSTITUTE:
"SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" 1986 WITH 1989 ADDENDUM

INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS:
"UNIFORM BUILDING CODE" 1997 EDITION

AMERICAN WELDING SOCIETY:
"STRUCTURAL WELDING CODE" A.W.S. D1.1-84

METAL BUILDING MANUFACTURER'S ASSOCIATION:
"METAL BUILDING SYSTEMS MANUAL" 1996

CONCRETE NOTES

1. ALL CONCRETE SHALL WITHSTAND 2500 LBS. PER SQUARE INCH ULTIMATE COMPRESSIVE STRESS AT 28 DAYS.
2. CONTRACTOR SHALL INFORM CONLEY'S MANUFACTURING & SALES OF ANY DISCREPANCIES, OMISSIONS, OR ERRORS ON THE PLANS BEFORE BEGINNING CONSTRUCTION, OTHERWISE, IT SHALL BE DONE AS INTENDED BY THE ENGINEER.
3. THE ENGINEER AND/OR CONLEY'S MANUFACTURING & SALES ASSUMES NO RESPONSIBILITY FOR CONSTRUCTION SUPERVISION OR DEVIATION FROM THESE PLANS WITHOUT PRIOR WRITTEN APPROVAL.
4. ALL CONSTRUCTION SHALL COMPLY WITH THE U.B.C. LATEST EDITION AS AMENDED BY THE LOCAL AGENCY HAVING JURISDICTION.
5. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS ON DRAWINGS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
6. ANY ENGINEERING DESIGN PROVIDED BY OTHERS MUST BE SUBMITTED FOR REVIEW AND SHALL BEAR THE STAMP AND SIGNATURE OF A REGISTERED ENGINEER.
7. ALL PLUMBING, ELECTRICAL OR MISCELLANEOUS STUB OUT SHALL BE A MINIMUM OF NINE (9) INCHES CLEAR OF THE OUTSIDE CONCRETE IN ORDER TO CLEAR THE WALLS.
8. FOOTINGS SHALL BE CENTERED ON THE CENTERLINE OF THE COLUMN ABOVE UNLESS OTHERWISE NOTED.
9. ALL FOOTINGS SHALL BEAR AGAINST FIRM NATURAL UNDISTURBED SOIL OR CERTIFIED COMPACTED FILL SOIL BEARING PRESSURE TO EQUAL 1000 PSF.
10. THE MINIMUM REQUIREMENTS AND LOCAL FROST LINE REQUIREMENTS MAY SUPERSEDE THE DESIGN CALL OUTS. CONTACT THE LOCAL BUILDING DEPARTMENT FOR MINIMUM DEPTH REQUIREMENTS.

* BUILDINGS WITH SNOW LOADS ARE DESIGNED AS HEATED BUILDINGS

STEEL NOTES

1. ALL CONSTRUCTION TO COMPLY WITH THE LATEST EDITION OF THE U.B.C. AND A.I.S.C.
2. ALL MACHINE BOLTS TO COMPLY WITH A.S.T.M. A-307*. HOLES SHALL BE BOLT DIAMETER PLUS 1/16". (* UNLESS OTHERWISE NOTED)
3. ALL HOT ROLLED OR COLD ROLLED SHEETS AND STRIPS USED IN THE FABRICATION OF COLD FORMED STRUCTURAL MEMBERS SHALL HAVE A MINIMUM YIELD STRENGTH OF 55 K.S.I.
4. LIGHT GAGE - COLD FORMED STRUCTURAL STEEL MEMBERS SHALL CONFORM TO A.S.T.M. SPEC. A-500 GRADE "C" (Fy=50 K.S.I.), UNLESS OTHERWISE NOTED.
5. ALL STRUCTURAL STEEL MEMBERS SHALL BE GALVANIZED.
6. ROUND TUBES SHALL CONFORM TO A.S.T.M. SPEC. A-500 GRADE "C" (Fy=48K.S.I.).
7. CABLES SHALL BE OF AIRCRAFT TYPE CABLE WITH THE FOLLOWING BREAKING STRENGTHS: 1/8" = 1,700 LBS., 3/16" = 4,200 LBS., 1/4" = 7,000 LBS.

NO.	REVISIONS
1	
2	
3	
4	
5	

DATE	SCALE	NOTED	NO.	BY	APPROVED

18' X 36'

ENGINEER

LOADING
DRAWING NO.
10-70-B

DRAWING SET

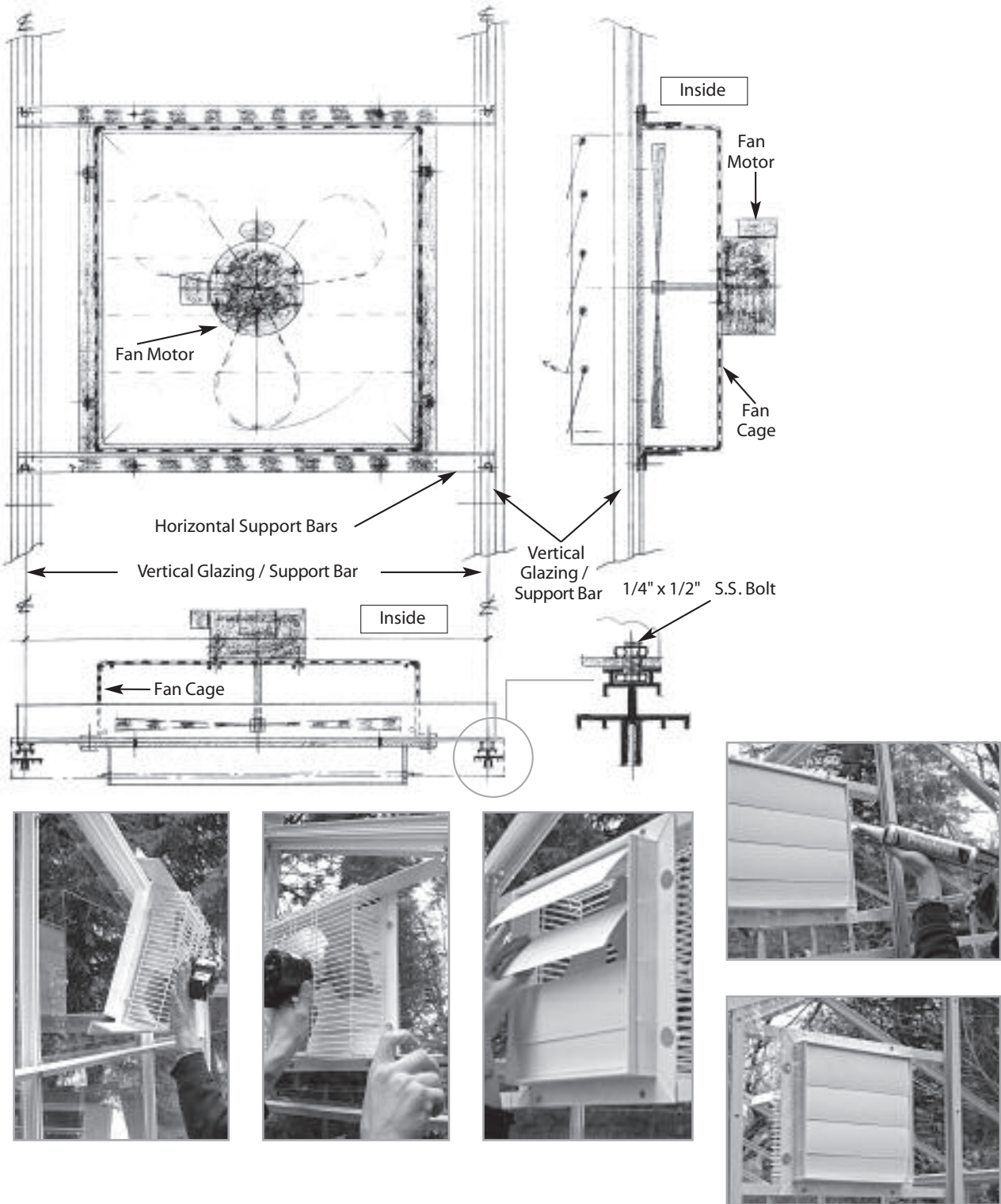
SHEET 1 OF 2

007

CENTRIGRAPH

Hobby Greenhouse

Exhaust Fan Installation (Typical)



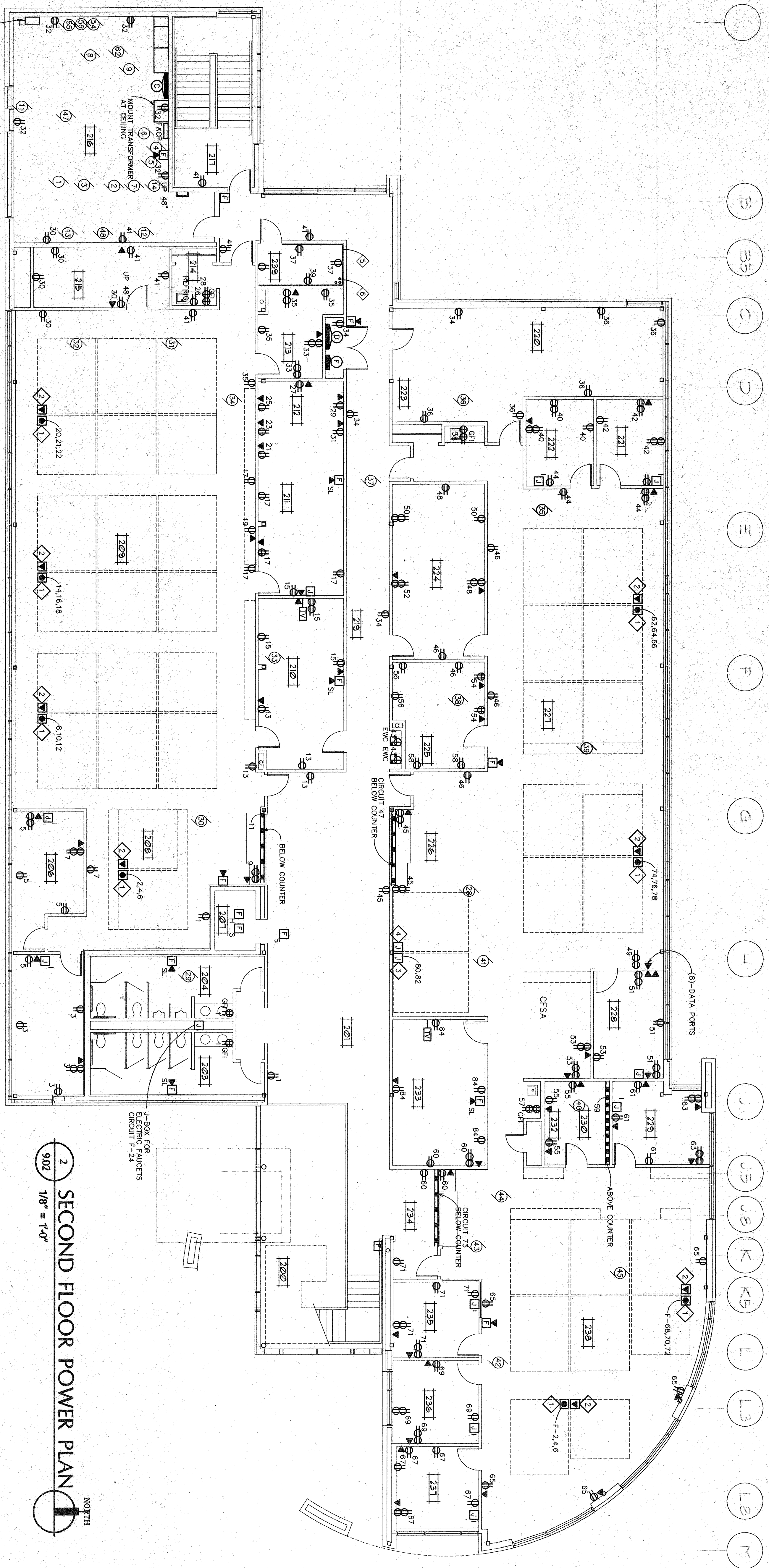
Potter Lawson
 Architects Engineers Interiors

Contractor

NO.	DESCRIPTION
1	ALL CIRCUITS ON FIRST FLOOR ARE SERVED FROM PANEL 'B' UNLESS OTHERWISE NOTED.
2	ALL CIRCUITS ON FIRST FLOOR ARE SERVED FROM PANEL 'D' UNLESS OTHERWISE NOTED.
3	ALL JUNCTION BOX WITH 3/4" CONDUIT STUB UP CABLE HOOK-UP SHALL BE FOR 150VDC 115' ELECTRICAL CONTRACTOR TO FASTEN ALL CABLES TO CEILING STRUCTURE AS PER NEC.
4	ELECTRICAL CONTRACTOR TO FASTEN ALL CABLES TO CEILING STRUCTURE AS PER NEC.

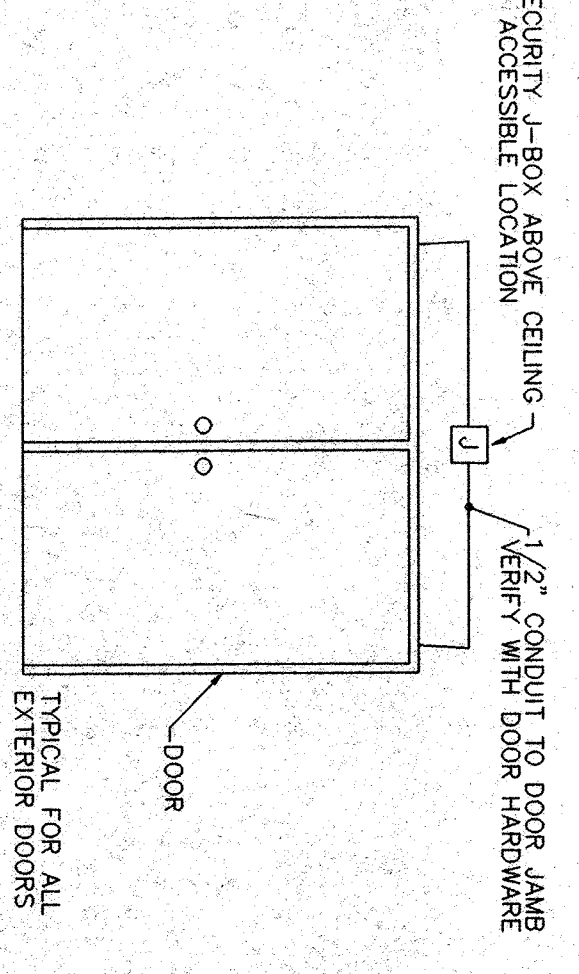
ELECTRICAL NOTES:

- 1. FIRST FLOOR POWER FEED BOX TO ACCEPT 8 WIRE SEMI-FLEXIBLE CABLE FOR VOICE AND DATA WIRING PROVIDE (2) CAT 5 DATA CABLES PER WORK STATION AND (4) CAT 5 DATA CABLES FOR FUTURE.
- 2. WALL JUNCTION BOX TO ACCEPT 8 WIRE SYSTEM FORTITUDE CABLE.
- 3. PROVIDE 6" X 6" X 1/2" RESISTANT PAINTED WITH TELEPHONE AND DATA SERVICE ON THREE WALLS.
- 4. PROVIDE (1)-(1) 3" PVC FOR TELEPHONE SERVICE FLOOR.
- 5. PROVIDE (1)-(1) 3" PVC FOR CITY SERVICE, STUB 5'-0" OUTSIDE OF BUILDING.
- 6. PROVIDE (1)-(1) 3" PVC FOR CITY SERVICE, STUB 5'-0" OUTSIDE OF BUILDING.

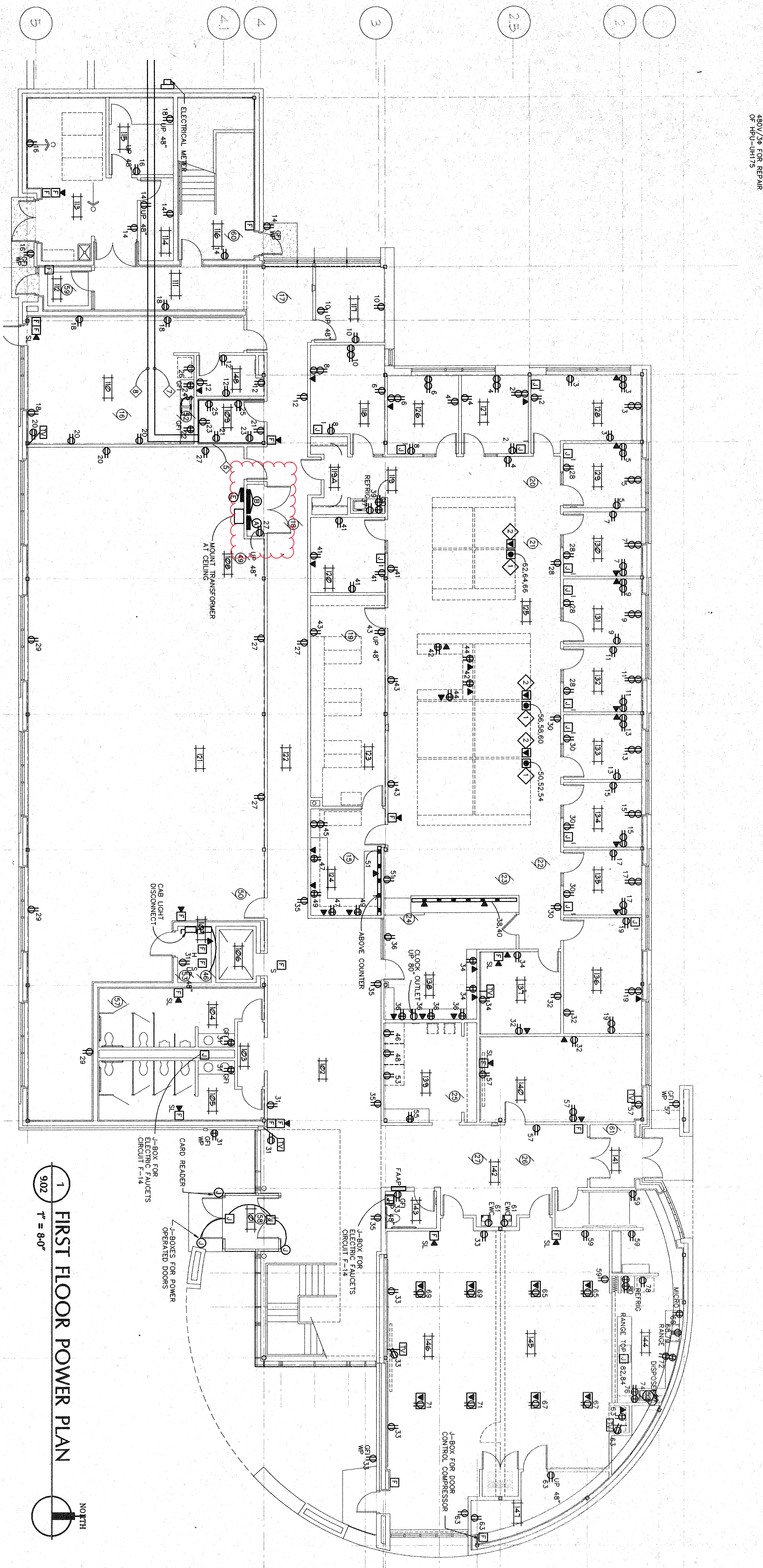
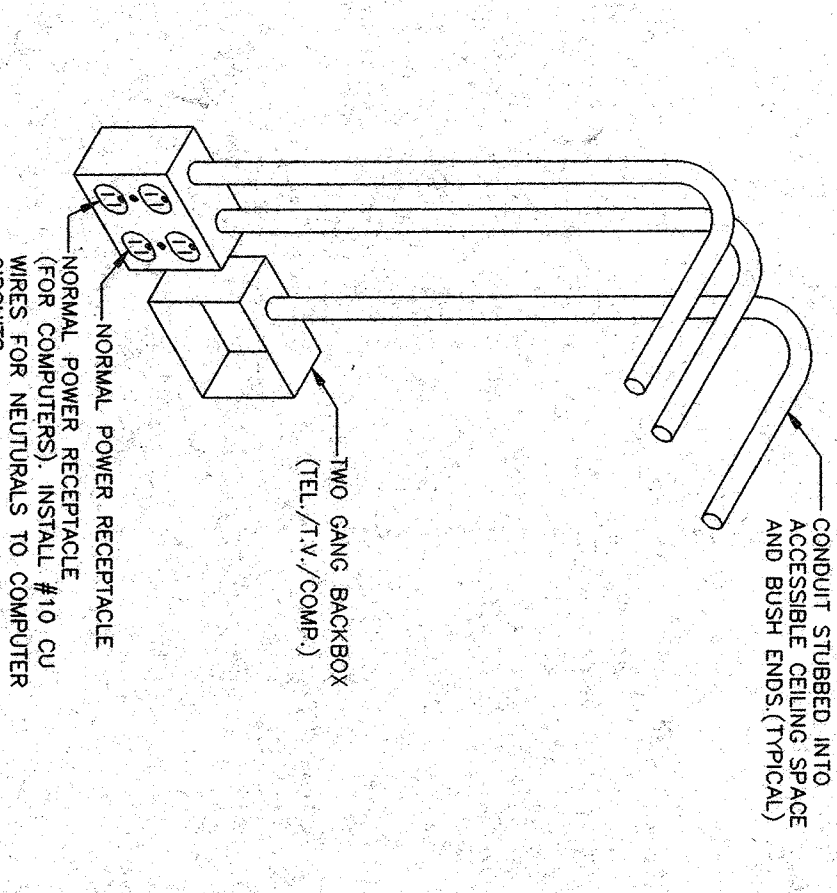


2 SECOND FLOOR POWER PLAN
 1/8" = 1'-0"
 NORTH

3 SECURITY J-BOX DETAIL
 3/02 N.T.S.



4 BACKBOX INSTALLATION DETAIL
 3/02 TEL/VID/DATA



1 FIRST FLOOR POWER PLAN
 3/02 T = 8'-0"
 NORTH

Date	Issuance/Revisions	Symbol
1/10/05	ISSUED FOR BIDDING	
1/10/05	ISSUED FOR OWNER REVIEW	
6/29/05	ISSUED FOR DESIGN DEVELOPMENT APPROVAL	

DANE COUNTY
 EXTENSION AND
 AGRICULTURE CENTER

FEN OAK COURT
 MADISON, WISCONSIN

POWER FLOOR PLANS