



# Bid Response

		Date Bids Due: November 12, 2014	Time of Bid Opening: 1:00 P.M.	Bid Opening Location: 800 Lincoln Way, Ames, IA	
Proposal Number: <b>13071</b>		Description: Radiant Heat Replacement for Perry and Missouri Valley Maintenance Garages			
Contract to Begin: December 5, 2014		Date of Completion: March 13, 2015	Proposal Guaranty Amount: Item 1: \$5,700.00 Item 2: \$7,700.00		Liquidated Damages: \$125.00/Day
Purchasing Agent: Mary Zimmerman		E-mail Address: mary.zimmerman@dot.iowa.gov	Phone: 515-239-1538		Fax: 515-239-1538
Company Name:				Federal Tax ID:	
Street Address:			City:	State:	Zip Code:
Supplier Contact (type or print)		E-mail Address:		Phone:	Fax:
Supplier agrees to sell items/services at the same prices, terms and conditions to any other state agency. Regent or Political Subdivision upon request. Please check Yes or No. <input type="checkbox"/> Yes <input type="checkbox"/> No				Are you an Iowa Targeted Small Business? <input type="checkbox"/> Yes <input type="checkbox"/> No	

## GENERAL INFORMATION

This bid package includes the proposal, schedule of prices, standard terms and conditions, supplemental terms, specifications, mailing label and other information you need to prepare your bid. The pages of the document labeled "Bid response" must be typed or completed in ink, signed, and returned in a flat style envelope prior to the bid opening date and time. Please use the furnished mailing label, or label the bid response as "Iowa Department of Transportation, proposal number & letting date" on the outside of the return envelope. The bidder may personally deliver, mail, or select a carrier that ensures timely delivery. **Faxed bids will not be accepted.**

If required, each bid must be accompanied by a proposal guaranty in an accepted form, in the sum indicated above. Refer to the Standard Terms and Conditions for the accepted forms in which the proposal guaranty requirement may be fulfilled. Bids lacking a required proposal guaranty will not be considered for award. If the contractor fails to enter into a formal contract within fifteen (15) days after award is made, the proposal guaranty may be retained by the State.

## PROPOSAL STATEMENT

The entire contents of this Proposal, Addendums to the Proposal, Specifications, Supplemental Terms and Conditions, Standard Terms and Conditions, and Schedule of Prices shall become part of the contract.

We promise to enter into a contract within fifteen (15) days after award or forfeit the proposal guaranty furnished herewith.

We promise to furnish all materials, equipment and/or services specified, in the manner and the time prescribed, at prices hereinafter set out.

We 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; and that this bid has not been knowingly disclosed prior to the opening of bids to any other bidder or competitor.

We certify that all materials, equipment and/or services proposed meet or exceed the specifications and will be supplied in accordance with the entire contents of this proposal.

We promise to complete the contract within the contract period, or pay any liquidated damages, if stipulated, for each calendar day as set forth in the bid documents.

Signed \_\_\_\_\_ Date \_\_\_\_\_

**Iowa Department of Transportation  
Schedule of Prices  
Proposal No.: 13071  
Radiant Heat Replacement for Perry and Missouri Valley Maintenance Garages  
Letting Date: November 12, 2014 1:00 P.M.**

**Project Description:** Radiant Heat replacement for Perry Maintenance Garage located at 14455 North Avenue, US Highway 169, Bouton, IA 50039 and Missouri Valley Maintenance Garage located at 2308 US Highway 30, Missouri Valley, IA 50555.

**Items are not tied.**

Item No.	Description	Quantity	Unit/Price	Total Bid Amount
1.	Radiant Heat Replacement for Perry Maintenance Garage according to plans and specifications	1 Job	Lump/Sum	\$ _____
2.	Radiant Heat Replacement for Missouri Valley Maintenance Garage according to plans and specifications	1 Job	Lump/Sum	\$ _____

I hereby certify that this proposal meets or exceeds the minimum requirements including specifications and addendums.

Contact Person: \_\_\_\_\_  
(Print Name)

Authorized Signature \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Federal Tax I.D. No.: \_\_\_\_\_

(City) \_\_\_\_\_ (State) \_\_\_\_\_ (Zip Code) \_\_\_\_\_

Contractor's Registration No.: \_\_\_\_\_

Phone No: \_\_\_\_\_

Email: \_\_\_\_\_

Fax No.: \_\_\_\_\_

I acknowledge receipt of addendum nos.: \_\_\_\_\_



**Iowa Department of Transportation**  
**Standard Terms and Conditions**  
For  
Bid Proposals/Contracts  
-FORMAL-

The entire contents of this bid proposal shall become a part of a contract or purchase order. In case of a discrepancy between the contents of the bid documents, the following items listed by descending order shall prevail:

- Addendums to the bid proposal
- Bid Proposal-
  - Schedule of Prices
  - Specifications
  - Plans and Drawings
- Supplemental Terms and Conditions
- Standard Terms and Conditions

*Formal* is the procurement process required by Iowa law when the estimated, aggregate amount of the purchase equals or exceeds \$50,000.

(Example - if a statement in the specifications contradicts a statement in the Standard Terms and Conditions, the statement in the specifications shall apply)

**Preparation of Bid Response:** All bid responses must address all aspects of the proposal including clearly answering all questions within the proposal. Bid responses must be typed or completed in ink and submitted on the forms supplied by the Iowa DOT.

**Bid responses must be signed and received prior to the bid opening date and time as indicated on the Bid Response cover page or bid opportunity. The signed, submitted quotation or bidder's proposal shall become the official bid response to be considered for award.**

**No email, fax or web link bid responses will be accepted. Bid responses must be signed, sealed and delivered in person or by a mail courier that ensures timely delivery.**

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A. Bid Proposal

1. **Bid Opening:** Bid openings are made public and conducted at the Iowa DOT, Ames complex unless otherwise specified. Proposals received after the time of the bid opening will be returned unopened and considered non-compliant.
2. **Communications:** Questions concerning this proposal should be directed to the purchasing agent listed on the bid proposal. Inquiries can be written, phoned, or faxed. In all cases, written communication will take precedence over verbal communication
3. **Proposal Guaranty:** If required, the bid response page will indicate the amount required to be included in the bid response. A Proposal Guaranty can be supplied in one of the following ways: **(1)** Certified check or credit union certified share draft, cashier's check, or bank draft, drawn on a solvent bank or credit union. Certified checks and certified share drafts shall be drawn and endorsed in the amount indicated. Checks or drafts shall be made payable either to the Iowa Department of Transportation (Iowa DOT) or to the bidder. If payable to the bidder, the check or draft shall be endorsed without qualifications to the Iowa DOT by the bidder or an authorized agent. **(2)** An insurance or surety company may be retained to provide a bond in fulfillment of the proposal guaranty requirement. A properly completed and signed copy of the Proposal Guaranty (*Form 131084*) must accompany the bid. **The Iowa DOT's Proposal Guaranty form must be used; no other forms or formats will be accepted.**
4. **Pricing and Discount:** Unit prices shown on the bid/proposal shall be quoted as the price per unit (e.g., gal., case, each, etc.) as stated in the bid proposal. If there is a discrepancy between the unit bid prices, extension, or total amount of bid, the unit prices shall prevail. Unless otherwise indicated, prices shall be firm for the duration of the contract or purchase. Discounts for early payment are allowed, but not considered in award of the contract.

5. **Acceptance/Rejection:** The Iowa DOT reserves the right to accept or reject any or all bids and to waive irregularities or technicalities, provided such waiver does not substantially change the offer or provide a competitive advantage to any supplier(s). The Iowa DOT also reserves the right to accept that bid which is deemed to be in the best interests of the state. Any unauthorized changes, additions, or conditional bids including any ties to another bid or proposal or any reservations about accepting an award or entering into a contract, may result in rejection of the bid. Bids must remain available for award for thirty (30) days from date of bid opening.
6. **Bid Results & Disclosure:** A bid tabulation will be sent to all responsive bidders with an award recommendation indicated. At the conclusion of the selection process, the contents of all received bid responses will be placed in the public domain and be open to inspection by interested parties, according to state law. Trade secrets or proprietary information that are recognized as such and are protected by law may be withheld if clearly identified as such in the proposal.
7. **Quality:** All material shall be new and of first quality. Items which are used, demonstrators, refurbished, obsolete, seconds, or which have been discontinued are unacceptable without prior written approval by the Iowa DOT.
8. **Recycled Content:** The Iowa Code encourages purchase of products and materials with recycled content, including but not limited to paper products, oils, plastic products, compost materials, aggregate, solvents, and rubber products. Recycled items or alternatives must be noted in the bid response, if known.
9. **Shipping Terms:** Deliveries shall be F.O.B. Destination unless otherwise specified. All deliveries shall be accompanied by a packing slip indicating the Supplier, quantities shipped, and the purchase order number(s). All deliveries charges shall be included in the bid price and paid by the Supplier. No collect C.O.D. deliveries shall be accepted. When entering into a contract, the Supplier shall notify the freight company that all freight and delivery charges are to be prepaid by the Supplier. Goods delivered to the Iowa DOT Distribution Center at 800 Lincoln Way, Ames, IA shall be received between the hours of 7:30 a.m. and 3:30 p.m. on any day except Saturday, Sunday, or a holiday. For deliveries to other Iowa DOT locations, the Supplier may contact the destination location for available times to deliver as not all Iowa DOT locations have the same business hours. The Iowa DOT will not be liable for any freight claims or unpaid freight bills arising from contract or purchase order issues.

## B. Award

The binding agreement (award) may be issued in the form a purchase order or contract or both depending on the requirements and complexity of the agreement.

1. **Method of Award:** Award shall be made to the lowest responsible, responsive bidder whose bid meets the requirements of the solicitation and is the most advantageous to the Iowa DOT unless otherwise specified. An Iowa bidder will be given preference over an out-of-state bidder when bid responses are equal in all aspects and are tied in price. By virtue of statutory authority preference will be given to products and provisions grown and coal produced within the State of Iowa.
2. **Award Protests:** Protests of award recommendations are to be addressed to the Director of Purchasing, and shall be made in accordance with paragraph 761--20.4(6)"e" of the Iowa Administrative Code.
3. **Contracts:** Successful contractor(s) may be sent either a formal Contract, Notification of Award or purchase order as confirmation of acceptance and award. Any of these binding agreements shall be for the term stated in the bid proposal or on a purchase order and may be renewed for additional period(s) under the same terms and conditions upon mutual agreement as defined. The successful bidder may not assign a contract to another party without written authorization from the Iowa DOT Purchasing Section.
4. **Payment Terms:** The Iowa DOT typically pays properly submitted vendor invoices within thirty (30) days of receipt, providing goods and/or services have been successfully delivered, installed or inspected (if required), and accepted. Invoices presented for payment must be only for quantities received by the Iowa DOT and must reference the purchase order number to be submitted for processing.
5. **Default:** Failure of the Supplier to adhere to specified delivery schedules or to promptly replace rejected materials shall render the Supplier liable for all costs in excess of the bid price when alternate procurement is necessary. This shall not be the exclusive remedy and the Iowa DOT reserves the right to pursue other remedies available to it by law or under the terms of the binding agreement.

### C. General

1. **Administrative Rules:** For Additional details on the rules governing the actions of the Iowa DOT Purchasing Section, refer to 761 IAC, Chapter 20, Iowa Administrative Code, entitled "Procurement of Equipment, Materials, Supplies and Services".
2. **Affirmative Action:** The Contractor (and also subcontractor, vendor or supplier) is prohibited from engaging in discriminatory employment practices forbidden by federal and state law, executive orders and rules of the Iowa Department of Management, pertaining to equal employment opportunity and affirmative action. Contractor may be required to have on file a copy of their affirmative action program, containing goal and time specifications. Contractors doing business with Iowa in excess of \$5,000 annually and employing 50 or more full time employees may be required to file with the Iowa Department of Management a copy of their affirmative action plan. Failure to fulfill these non-discrimination requirements may cause the contract to be canceled and the contractor declared ineligible for future state contracts or subject to other sanctions as provided by law or rule.
3. **Applicable Law:** The contract shall be governed under the laws of the State of Iowa. The contractor shall at all times comply with and observe all federal and state laws, local laws, ordinances, and regulations which are in effect during the period of a contract and which in any manner affect the work or its conduct. Any legal action relating to a contract shall only be commenced in the Story County, Iowa, District Court or the United States District Court for the Southern District of Iowa.
4. **Conflict of Interest:** No state or county official or employee, elective or appointive shall be directly or indirectly interested in any contract issued by the Iowa DOT, See Code of Iowa 314.2
5. **Debarment and Vendor Suspension:** By submitting a proposal, the contractor is certifying that it and its Principals and/or subcontractors are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by the State of Iowa or any Federal department or agency.
6. **Equal Opportunity:** Firms submitting bids must be an "Equal Opportunity Employer" as defined in the Civil Rights Act of 1964 and in Iowa Executive Order Number Thirty-four.
7. **Infringement:** Goods shall be delivered free of the rightful claim of any third party by way of infringement. Contractor shall indemnify and save harmless the State of Iowa and the Iowa DOT against all claims for infringement of, and/or royalties claimed under, patents or copyrights on materials and equipment furnished under this bid.
8. **Records Audit:** The contractor agrees that the Auditor of the State of Iowa or any authorized representative of the state, and where federal funds are involved, the Comptroller General of the U.S. Government, shall have access to and the right to examine, audit, excerpt, and transcribe any directly pertinent books, documents, papers, and records of the contractor relating to orders, invoices, or payments of a contract or purchase order.
9. **Targeted Small Businesses:** The Iowa DOT seeks to provide opportunities for women and/or minority small business enterprises. To apply for certification as an Iowa Targeted Small Business, contact the Iowa Department of Inspection and Appeals (515-281-5796). Contractors shall take documented steps to encourage participation from Targeted Small Businesses for the purpose of subcontracting and supplying of good or services or both.
10. **Taxes:** Prices quoted shall not include state or federal taxes from which the state is exempt. Exemption certificates will be furnished upon request.
11. **Termination:**
  - **Termination Due to Lack of Funds or Change in Law**

The Iowa DOT shall have the right to terminate this Contract without penalty by giving thirty (30) days written notice to the vendor as a result of any of the following:

    - Adequate funds are not appropriated or granted to allow the Iowa DOT to operate as required and to fulfill its obligations under contract.
    - Funds are de-appropriated or not allocated or if funds needed by the Iowa DOT, at the Iowa DOT's sole discretion, are insufficient for any reason.
    - The Iowa DOT's authorization to operate is withdrawn or there is a material alteration in the programs administered by the Iowa DOT.
    - The Iowa DOT's duties are substantially modified.

Following a 30 day written notice, the Iowa DOT may terminate a binding agreement in whole or in part without the payment of any penalty or incurring any further obligation to the Supplier. Following termination upon notice, the Supplier shall be entitled to compensation upon submission of invoices and proper proof of claim for goods and services under contract up to and including the date of termination.

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**Letting Date: November 12, 2014 1:00 P.M.**

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**Iowa Department of Transportation  
General Requirements  
Proposal No.: 13071  
Radiant Heat Replacement for Perry and Missouri Valley Maintenance Garages  
Letting Date: November 12, 2014 1:00 P.M.**

**Part 1 General Conditions**

**1.1 Adoption of General Conditions**

- A. The General Requirements of this Contract shall include the "General Conditions", "Instructions to Bidders" and the "Supplementary General Conditions" as herein stated.
- B. "THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION", A.I.A. FORM #A-201, LATEST EDITION AND A.I.A. DOCUMENT, "INSTRUCTIONS TO BIDDERS", FORM #A-701, LATEST EDITION, SHALL BE INCLUDED, AS MODIFIED IN THE "SUPPLEMENTARY INSTRUCTIONS TO BIDDERS" AND "SUPPLEMENTARY GENERAL CONDITIONS", AND BOUND WITH THE STANDARD FORM OF AGREEMENT BETWEEN THE CONTRACTOR AND OWNER", A.I.A. FORM #101, LATEST EDITION, AS A PART OF THIS CONTRACT SPECIFICATION.
- C. All bidder information and conditions, bid check lists and similar documents included in the specification by the Purchasing Section of the Iowa Department of Transportation, Ames, Iowa are hereby made a part of the General Conditions.

**Part 2 Supplementary Instructions to Bidders**

**2.1 General**

- A. **Owner:**  
The Owner of this project is the Iowa Department of Transportation, 800 Lincoln Way, Ames, Iowa 50010.

**Project Location:**

Iowa Department of Transportation  
Perry Maintenance Garage  
14455 North Avenue, US Highway 169  
Bouton, IA 50039

Iowa Department of Transportation  
Missouri Valley Maintenance Garage  
2308 US Highway 30,  
Missouri Valley, Iowa 51555

- B. **Contract Document Information:**

***Questions regarding the bidding documents should be directed to:***

Purchasing Section  
Purchasing Agent – Mary Zimmerman  
Phone No.: 515-239-1298 Fax No.: 515-239-1538  
Email: [mary.zimmerman@dot.iowa.gov](mailto:mary.zimmerman@dot.iowa.gov)

Prospective bidders or plan rooms may obtain bids on: [www.iowadotpurchasing.com](http://www.iowadotpurchasing.com). Plan holders list for this project can be obtained by emailing Mary Zimmerman at [mary.zimmerman@dot.iowa.gov](mailto:mary.zimmerman@dot.iowa.gov).

### C. Restrictions on Communication

From the issue date of this RFP until announcement of the successful Vendor, Vendors may contact only the Issuing Officer. The Issuing Officer will respond only to questions regarding the procurement process. Questions related to the interpretation of this RFP must be submitted in writing to the Issuing Officer by 1:00 p.m., November 5, 2014. Verbal questions related to the interpretation of this RFP will not be accepted. Vendors may be disqualified if they contact any state employee other than the issuing officer.

In NO CASE shall verbal communication override written communication. Only written communications are binding on the State.

The Iowa DOT assumes no responsibility for representations concerning conditions made by its officers or employees prior to the execution of a contract, unless such representations are specifically incorporated into this RFP. Verbal discussions pertaining to modifications or clarifications of this RFP shall not be considered part of the RFP unless confirmed in writing. All such requests for clarification shall be submitted in writing. Any information provided by the Vendor verbally shall not be considered part of that Vendor's proposal. Only written communications from the Vendor and received by the Iowa DOT shall be accepted.

### D. Scope of Work

This project is for Contractor(s) to provide all materials, labor, and equipment necessary for the replacement of the existing radiant heat to Perry and Missouri Valley Maintenance Garages according to plans and specifications

Project to include removal and disposal for the existing system.

The project is located at: Iowa Department of Transportation,  
Item 1: Perry Maintenance Garage, 14455 North Avenue, US Highway 169, Bouton, Iowa 50039.

Item 2: Missouri Valley Maintenance Garage, 2308 US Highway 30, Missouri Valley, Iowa 50555.

Items are not tied.

### E. Contract Award:

- Award will be based on the total lump sum amount of bid price shown on the Schedule of Prices. **Items are NOT tied.** Bid price will include all requirements listed in Specifications, Drawings and Supplemental Terms to complete this proposed project. The Prime Contractor shall be responsible for taking all sub-bids and for all coordination between trades.
- A single "Prime" contract shall be awarded for all work shown on the Drawings and described in the Specifications including Site work, General construction, Demolition, Plumbing, Mechanical, Energy management and control and Electrical work. The

Prime Contractor shall be responsible for taking all sub-bids and for all coordination between trades.

- Protests of award recommendations shall be made in accordance with Paragraph 761--20.4(6)"e", Iowa Administrative Code.
- Contractor shall return all contractual documents within fourteen (14) calendar days from date indicated in contract cover letter. ***If this is not returned within this time frame, contract may be voided and awarded to the next low bidder.***

## **2.2 Bidders Representatives**

- It is recommended, but not required, that prospective bidders on this project shall visit the job site prior to submitting a quotation for this work. To view site contact:  
Item 1: Perry Maintenance Garage: Pete Wonders, 515-676-2233 or [pete.wonders@dot.iowa.gov](mailto:pete.wonders@dot.iowa.gov)  
Item 2: Missouri Valley Maintenance Garage: Marshel Wilber, 712-642-2178 or [marshel.wilber@dot.iowa.gov](mailto:marshel.wilber@dot.iowa.gov)
- No considerations or revision in the contract price or scope of the project will be considered by the Owner for any item which could have been revealed by a thorough on-site inspection and examination.

### **A. Conditions of Work:**

Bidders must inform themselves fully of the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve successful bidders of their obligation to furnish all material and labor necessary to carry out the provisions of this contract. Insofar as possible, the Contractor, in carrying out the work, must employ such methods or means as will not cause any interruption of, or interference with the work of any other contractor.

### **B. Obligation of Bidder:**

- At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the drawings, specifications, and other contract documents, including all addenda.
- The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect to their bid.

### **C. Codes, Laws and Regulations:**

The laws of the State of Iowa in relation to and pertaining to public improvements shall apply to this project. All construction, materials and methods shall comply with the State and Local Building Codes and with Local Ordinances, except where plans and specifications establish a higher standard.

## **D. Licenses, Permits and Inspections**

The Vendor shall give all notices and comply with all codes, laws, ordinances, rules and regulations of any public authority having jurisdiction that bears on the performance of its work. The Vendor shall pay for all licenses, permits and inspection fees required for its work. The Vendor must furnish copies of all approved inspection certificates and approvals from authorities having jurisdiction in a timely fashion upon completion of the work.

## **2.3 Bidding Documents**

### **A. Plans and Specifications:**

- The Plans and Specifications are to remain on file at the Iowa DOT Office, Purchasing Section, 800 Lincoln Way, Ames, IA 50010.
- In the event of a conflict between the specifications and the drawings, the specifications shall take precedence.

### **B. Contents of the Contract Documents:**

- In case of a discrepancy between contents of the contract documents, the following items listed by descending order shall prevail:
  1. Addendum
  2. Proposal Form
  3. Special Provision
  4. Plans
  5. Supplemental Specifications
  6. Standard Specifications

Should there be a discrepancy between figures and drawings on any of the contract documents, the figures shall govern unless they are obviously incorrect.

### **C. Interpretation of Contract Documents:**

- If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the Plans, Specifications or other proposed contract documents, the bidder will submit to the Iowa DOT a written request for an interpretation thereof. Requests for interpretation must be received on or before **1:00 P.M., November 5, 2014.**
- The person submitting a request will be responsible for its prompt delivery.
- No interpretation of the meaning of the drawings, specifications, or other pre-bid documents will be made to any bidder orally. Interpretations will be made only by addendum duly issued.
- A copy of such addendum will be emailed to each person receiving a copy of the contract documents and to such other prospective bidders having requested that they be furnished with a copy of each addendum.

**D. Materials and Equipment:**

- Names of Manufacturers and vendors listed in the bidding documents are listed for the bidders only. Manufacturers and vendors, in addition to those specifically listed, are acceptable when it is proven to the satisfaction of the Iowa DOT that:
  - a. The level of quality proposed is equal to or better than that of the referenced manufacturer/vendor's quality.
  - b. The technical characteristics of the proposed product meet or exceed the requirements of the drawings and specifications.
  - c. The use of the materials or equipment does not require major revisions of the drawings and specifications to permit their use.
- Any additional cost in other work incurred as a result of these approvals shall be borne by the Contractor, including all costs for modifying other related materials/systems and the cost of any additional engineering or design fees required to accommodate the substitution/approval.
- The Contractor must be confident that a proposed product or material meets or exceeds the requirements shown on the drawings and specifications. It will be the responsibility of the Contractor to verify and demonstrate that a proposed product meets or exceed the drawings and specifications at time of shop drawing reviews. If a proposed product or material is determined to be technically unacceptable as judged by the Iowa DOT, the Contractor shall be required to supply products or materials that meet the requirements required to supply products or materials that meet the requirements stated in the drawings and specifications at no cost increase to the Iowa DOT. Under no circumstances will the Iowa DOT be required to prove that proposed substitutions is not equal to the project requirements. The decision of the Iowa DOT on all requested proposals/substitutions is final.

**E. Exceptions/Equals:**

No substitutions, changes or additions to the request for proposals shall be permitted.

**F. Addenda:**

- Addenda, if issued, will be emailed to all known plan holders, and acknowledgement of receipt of addenda will be indicated on the bidder's proposal form.
- All addenda so issued shall become part of the contract documents.

**2.4 Bidding Procedures**

**A. Proposed Form:**

- Each proposal must be submitted in ink or typewritten and shall be sealed in a flat-style envelope.
- Submit bids to The Iowa Department of Transportation, Purchasing Section, 800 Lincoln Way, Ames, Iowa 50010. Bids shall be due on or before **1:00 P.M., November 12, 2014**, and shall be read publicly thereafter.
- Each Bid must be submitted on the Schedule of Prices form.

- All bids received by the Iowa DOT, which require allocation of appropriated state funds, are subject to the acceptance of the issuing department of the State of Iowa.

**B. Proposal Guaranty:**

Each bid must be supported by a Proposal Guaranty in the sum of **\$5,700.00 for Item 1 and \$7,700.00 for Item 2**. The proposal guaranty shall be in the form of a certified check or credit union certified share draft, cashier's check, or bank draft drawn on a solvent bank or credit union. Certified checks or credit union certified share drafts shall bear an endorsement signed by a responsible official of such bank or credit union as to the amount certified. Cashier's checks or bank drafts shall be made payable either to the Contracting Authority or to the bidder and, where made payable to the bidder, shall contain an unqualified endorsement to the Contracting Authority signed by the bidder or his authorized agent.

Certified checks and credit union share drafts shall be certified, or the cashier's check shall be drawn and endorsed, in an amount not less than prescribed in the proposal. Bid bond may be used for the proposal guaranty in lieu of that specified above. ***A bid bond must be submitted on Iowa Department of Transportation Form No. 131084 included in the packet or bid will be rejected.***

The proposal guaranty of the qualified responsive low bidder will be retained until a contract is entered into and the required Bonds and Insurance Certificates filed. All other bid securities will be returned after the award has been made.

**C. Withdrawal Period:**

Prime bidders, subcontractors and material suppliers on this project agree to guarantee their proposal for a period of thirty (30) days after the date of receipt of bids. No bid may be withdrawn during this period.

**D. Extension of Contract Period:**

The Iowa DOT will grant an extension of the contract period for additional work requiring additional construction time that adds additional work to the controlling item of work.

**E. Liquidated Damages:**

- Time is an essential of the contract, and it is important that the work be pressed vigorously to completion. The cost per day for liquidated damages is indicated on the Purchasing Proposal form.
- For each calendar day that any work shall remain uncompleted beyond the completion date or any extension granted under Extension of Contract Period, the amount per calendar day specified in the proposal form will be assessed, not as a penalty but as predetermined and agreed upon liquidated damages. If work remains uncompleted on more than one portion for which calendar days and liquidated damages have been specified, the liquidated damages assessed will be the total of the damages per day listed for each uncompleted portion. The Owner shall prepare and forward to the Contractor an invoice or credit change order for such liquidated damages. The final payment shall be withheld until payment of the invoice has been made or the credit change order has been agreed upon.

- Assessment of liquidated damages will be based only on the number of calendar days required to complete the contract beyond the contract completion date, plus authorized extensions.
- The provision for the assessment of liquidated damages for failure to complete work within the contract period does not constitute a waiver of the Owner's right to collect any additional damages other than time delays, which the Owner may sustain by the failure of the Contractor to carry out the terms of the contract.

**F. Facsimile Modifications and Bid Closing:**

- Bids received prior to the time of opening will be securely kept, unopened. The officer whose duty it is to open them will decide when the specified time has arrived, and no bid received thereafter will be considered.
- Modification of the bid price by facsimile of bids already submitted will be considered if received prior to the time set for the opening. The changes shall not reveal the bid price but shall provide the amount to add or subtract to modify the bid so the total amount is not known until the bid is opened.

**G. Informalities:**

The Owner may waive any informalities or reject any or all bids.

**2.5 Consideration of Bids**

**A. Rejection of Bids:**

- The Iowa DOT reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the Iowa DOT that such bidder is properly qualified to carry out the obligations of the Contract and to complete the work contemplated therein.
- Conditional bids will not be accepted.

**B. Qualification of Bidder:**

The Iowa DOT may make such investigations as they deem necessary to determine the ability of the bidder to perform the required work, and the bidder shall furnish to the Iowa DOT all such information and data for this purpose as the Iowa DOT may request.

**2.6 Performance and Payment Bonds**

**A. Bonds:**

Performance bond is not required on contracts for less than \$25,000. However, if the Contract is \$25,000 or more, the bidder shall furnish bonds covering the faithful performance of 100% of the Contract and the payment of all obligations arising thereunder. One copy of the bond shall be submitted on Iowa Department of Transportation Form 131070. All items must be properly filled in, including Contractor's signature. Resident commission agent or attorney-in-fact must file a copy of the power of attorney.

**B. Power of Attorney:**

Attorney-in-fact who signs the proposal guaranty, Performance Bond, and Labor and Material Payment Bond must file with each bond a certified and effectively dated copy of the Power of Attorney.

**2.7 Notice of Tax Exempt Status**

A Sales Tax Exemption Certificate and authorization letter will be issued to the successfully awarded construction contractor for the purchase of building materials, supplies and equipment used in the performance of this construction contract.

The Department of Transportation is exempt from paying sales and use taxes. ***Do not include sales tax in your bid for this project.***

**2.8 Labor Regulations**

All contractors, before entering into a contract with the Department, must be registered with the Division of Labor in the Iowa Department of Workforce Development (515-281-3606) according to chapter 91C, Code of Iowa 2003.

**2.9 Targeted Small Business Program**

The 1986 Iowa Legislature enacted legislation relating to procurement from Iowa Targeted Small Businesses. (Iowa Code, Chapter 73. And Iowa Administrative Code rules 820--[01,B] Chapter 2). It is hereby agreed that when entering into a contract with the State of Iowa, the vendor/contractor will take documented steps to encourage participation from TSB's for the purpose of subcontracting and supplying of materials.

A list of Targeted Small Business Contractors is available on the Internet at <https://dia.iowa.gov/tsb> and click on Search Targeted Small Businesses.

**Part 3 Supplementary General Conditions**

**3.1 The Contractor**

**A. Guidelines:**

- Contractors shall comply with Iowa Occupational Safety and Health Standards as found in 29 CFR Parts 1910 and 1926. Of particular importance are those standards referring to the use of personal protective equipment, fall protection and ventilation.
- Contractor may be required to make available to Iowa DOT at time the apparent low bidder has been determined all Material Safety Data Sheets (MSDS) for all products provided prior to approved contractor and award. These must be faxed to Purchasing 515-239-1538 with cover indicating project the MSDS sheets pertain to. This shall be faxed within two (2) days upon request.

**B. Guarantee:**

The Contractor shall guarantee all work executed under this contract, both as the workmanship and materials, for a period of twelve (12) months after the date of acceptance, except that special guarantee provision specified elsewhere in these

Specifications shall take precedence. Neither the final payment nor any provision of the contract documents shall relieve the Contractor of responsibility for faulty materials or workmanship. The Contractor shall remedy any defect thereto and pay for any damage to other work resulting therefrom, which shall appear within a period of one (1) year from the date of the final acceptance. With one month remaining in the guarantee period, the Contractor shall notify the Iowa DOT and set up a complete building walk-through inspection.

- All materials, items of equipment, and workmanship furnished under this division of the specifications shall carry the standard warranty against all defects in material and workmanship. Any fault due to defective or improper material, equipment, or workmanship which may develop, shall be made good, forthwith.
- The Guarantee shall include, but not be limited to the following elements and services:
  - a. Repair or replace defective materials, equipment, workmanship and installation that develops within the guarantee period, promptly and to Iowa DOT's satisfaction and correct damage caused in making necessary repairs and replacements, including all other damage done to areas, materials, and other systems resulting from the failure or defect, under guarantee by and at the expense of the Contractor.
  - b. Replace material or equipment that requires excessive service during guarantee period, as defined and as directed by the Iowa DOT.
  - c. Make all service calls, replacements, repairs and adjustments during the guarantee period without cost to the Iowa DOT.

### **C. Workmanship**

Work shall be performed in best, most workmanlike manner by mechanics, skilled and employed continuously in their respective trade. Installation shall be made by the manufacturer or their authorized installer where specified. Unsatisfactory work shall be replaced at Contractor's expense.

### **D. Shop Drawings and Samples:**

- Shop drawings, specification data, and samples shall be submitted to the Iowa DOT for approval and/or selection prior to the placing of orders for any equipment and materials.
- Shop Drawings: Shop drawings shall be submitted after the schedule of proposed material and equipment has been approved. Submit details of systems and equipment to the Iowa DOT for review. Submit a minimum of eight binders containing one copy each of Shop Drawing of all systems and equipment as indicated in each Division of the specifications: (Note: Submission of Shop Drawings not in binders, but in loose sheet form, may be considered cause for rejection with resubmission in proper form required).
- Product Data: Submit manufacturer's product data to the Iowa DOT for approval, consisting of complete specifications, test report data, installation instructions, and other pertinent technical data required to complete product.
  - a. Intent of Shop Drawings and Product Data review is to check for capacity, rating and certain construction features. Ensure that work meets requirements of Contract Documents regarding information that

pertains to fabrication processes or means, methods, techniques, sequences and procedures of construction, and for coordination of work of this and other Sections.

- b. Perform work in accordance with submittals marked "No Exception Taken" to extent that they agree with Contract Documents. Submittal review shall not diminish responsibility under this Contract for dimensional coordination, quantities, installation, wiring, supports, access, service and errors, nor for deviations from requirements of Contract Documents. Requirements of Contract Documents are not limited, waived, nor superseded by Shop Drawing Review.
- c. Submittals of various systems shall indicate equipment supplier used and that all equipment of particular system is being furnished by same supplier. Supplier shall be qualified to supervise installation, connection and testing of system and have competent maintenance service for respective systems.
- d. Shop Drawings and samples will be reviewed with reasonable promptness and will be stamped indicating appropriate action as follows:
  - 1) **"No Exception Taken"** means that fabrication, manufacture, or construction may proceed providing submittal complies with Contract Documents.
  - 2) **"Make Corrections Noted"** means that fabrication, manufacture, or construction may proceed providing submittal complies with Engineer's notation and Contract Documents. If, for any reason, notations cannot be complied with, resubmit as described for submittals stamped **"Reject"**.
  - 3) **"Revise and Resubmit"** means submittal information is incomplete or ambiguous and therefore clarification or additional information is required to ascertain compliance with the contract documents, and that fabrication, manufacture or construction shall not proceed. Provide additional data required by the contract documents and resubmit.
  - 4) **"Reject"** means that submittal does not comply with Contract Documents and that fabrication, manufacture, or construction shall not proceed. Resubmit in accordance with requirements of Contract Documents.

**E. Use of Premises:**

- All Contractors shall confine all apparatus, storage of materials and construction to areas as directed by the Iowa DOT and shall not encumber the premises with materials.
- Notwithstanding any approvals or instructions which must be obtained by the Contractors from the Iowa DOT in connection with use of premises, the responsibility for the safe working conditions at the site shall remain that of the Contractors.

**F. Cutting and Patching:**

- Each Contractor shall cut holes necessary to install work.



Iowa Department of Transportation

PROPOSAL GUARANTY / BID BOND

KNOW ALL PERSONS BY THESE PRESENTS: That we, \_\_\_\_\_  
(Contractor's/Bidder's Name)

\_\_\_\_\_ of \_\_\_\_\_  
(City,State)

as principal, and the \_\_\_\_\_  
(Surety)

of \_\_\_\_\_ as Surety, are held and firmly bound unto the Iowa Department of  
(Address)

Transportation and to the State of Iowa, or Municipality as defined in Iowa Code, Section 73A.1 as applicable, hereinafter defined as Obligee, in the penal sum as shown in the contract documents of the specified project, for which payment said principal and surety bind themselves, their heirs, executors, administrators, successors, and assigns jointly and severally, firmly by these presents.

WHEREAS, the principal is herewith submitting his/her or its sealed proposal for:

County \_\_\_\_\_

Bid Order # \_\_\_\_\_  
(not required by Purchasing Section)

Type of Work \_\_\_\_\_

Date of Letting \_\_\_\_\_, 20 \_\_\_\_\_.

NOW THEREFORE, if the said proposal bid by said principal be accepted, and the principal shall enter into a contract with the Obligee in accordance with the terms of such bid, and give such bond as may be specified in the bidding or contract documents with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, then this obligation shall become null and void or in the event of the failure of the principal to enter such contract and give such bond, the principal shall pay to the Obligee the full amount of the bid bond, together with court costs, attorney's fees, and any other expense of recovery.

IN WITNESS WHEREOF, the principal and surety have caused these presents to be signed this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_.

\_\_\_\_\_  
Principal  
(Contractor's/Bidder's Name)

By \_\_\_\_\_  
Contractor's/Bidder's Signature

\_\_\_\_\_  
Address

\_\_\_\_\_  
Surety

By \_\_\_\_\_  
Authorized Surety Representative

- Similarly, each contractor shall perform all necessary patching that result from cutting of holes. The Prime Contractor shall resolve any conflict between trades, and it will be the contractor's responsibility to see all patches are made. Any and all through-wall penetration requiring structural modifications and or structural members shall be provided by the Prime Contractor.

**G. Clean-Up:**

Throughout the period of construction, the Contractor shall clean up all work and yard areas and keep the area reasonably free of debris, etc., as required for proper protection of the work. Prior to final acceptance, the Contractor shall remove all debris, tools and equipment from the project site.

**H. Immunity of Iowa Department of Transportation**

The Contractor shall defend, indemnify and hold harmless the Iowa Department of Transportation, and its officials and employees from liability arising out of or resulting from the Contractor's activities at the rest area, its performance or attempted performance of the contract, as well as the Contractor's activities with Sub-Contractors and all other third parties.

**I. Suspensions and Debarment.**

The Vendor certifies pursuant to 48 CFR Part 9 that neither it nor its principles are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this Contract by any federal Agency or agency. The Vendor certifies that it is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in any contracts with the State of Iowa.

**J. Termination Due to Lack of Funds or Change in Law**

Notwithstanding anything in this Contract to the contrary, and subject to the limitations set forth below, the Iowa DOT shall have the right to terminate this Contract without penalty and without any advance notice as a result of any of the following:

Adequate funds are not appropriated or granted to allow the Iowa DOT to operate as required and to fulfill its obligations under this Contract.

Funds are de-appropriated, reduced, not allocated, or receipt of funds is delayed, or if any funds or revenues needed by the Iowa DOT to make any payment hereunder are insufficient or unavailable for any other reason as determined by the Iowa DOT in its sole discretion; or

The Iowa DOT's authorization to conduct its business or engage in activities or operations related to the subject matter of this Contract is withdrawn or materially altered or modified; or

The Iowa DOT's duties programs or responsibilities are modified or materially altered; or

If there is a decision of any court, administrative law judge or an arbitration panel or any law, rule, regulation or order is enacted, promulgated or issued that materially or adversely affects the Agency's ability to fulfill any of its obligations under this Contract.

The Agency shall provide Vendor with written notice of termination pursuant to this section.

**K. Preference**

By virtue of statutory authority, a preference will be given to products and provisions grown and coal produced within the state of Iowa. Preference application: Tied responses to solicitations, regardless of the type of solicitation, are decided in favor of Iowa products and Iowa-based businesses per 11 IAC 105.5(1)-(2), 105.12(4).

**3.2 Administration of the Contract**

**A. Inspection and Supervision:**

- All work shall be according to the approved design and shall be under the direct supervision of the Iowa DOT.
- Periodic site inspections will be carried on by the Iowa DOT with the contractor to ensure coordination of the project.
- The owner will provide a list of items requiring inspection prior to or during installation. The Contractor is to give the Owner notice no less than 24 hours in advance of installation.
- The Iowa DOT contact shall be: Lynn Rusher, 515-239-1186 or email: [lynn.rusher@dot.iowa.gov](mailto:lynn.rusher@dot.iowa.gov)

**B. Contractors Construction Schedule:**

The successful bidder will, within 10 days after award of contract or at the pre-construction meeting, whichever comes first, submit to the Iowa DOT, Office of Facilities Support, a detailed construction schedule including dates of commencement and completion on each phase of the proposed construction. Upon acceptance of the schedule, the Contractor will be expected to adhere to these dates as proposed.

**C. Verifying Work of Other Contractors**

- When a Contractor's work depends on proper execution of work by other contractors, such Contractor shall promptly report to Architect defects in such work and discrepancies between executed work and the Drawings and Specifications.
- Contractors shall employ such methods and means in carrying out work as will not cause interruption or interference with any other contractor. General Contractors shall give other contractors sufficient notice to permit installation of sleeves, piping, conduit, and other items, prior to placing concrete or laying masonry. Any Contractor failing to comply with above shall be responsible for expense caused by such failure.

### **3.3 Sub Contractors**

- Specific attention shall be given by the Contractor to Article 5 of the A.I.A. Document A-201, "The General Conditions of the Contract for Construction".
- The apparent successful contractor for the project shall, within seven (7) calendar days after opening of the bids, furnish the Iowa DOT with a complete list of subcontractors and major material suppliers.
- The Iowa DOT shall maintain the list of subcontractors and major suppliers and issue a general approval of same after official award of the contract, subject to the specific requirements of the Plans, Specifications and the "General Conditions of the Contract, and of these supplementary Conditions," "Special Provisions," and elsewhere with contract documents, as applicable. Deviations from the list of subcontractors and material suppliers shall be made only with the specific approval of, or at the request of, the Iowa DOT.

### **3.4 Contract Period**

- The starting and completion dates are stated on the front page of the proposal. The date of completion shall be stated in calendar days on the Contractor's proposal, and if necessary, adjusted by mutual agreement between the Iowa DOT and Contractor prior to executing the contract documents.
- The Iowa DOT realizes that deliveries and condition will have a definite bearing on the completion date. The Iowa DOT will demand diligence in the prosecution of the work, but with good cause and satisfactory past performance by the Contractor, the Iowa DOT may revise that completion date to another mutually-acceptable date, when requested in writing and in good faith by the Contractor.

### **3.5 Payments and Completion**

- A. Payments on contract will be made monthly by means of state warrants to the extent of ninety-seven percent (97%) of the value of work performed, including acceptable material stored at the building site, as determined by the Engineer.
- B. Immediately after signing of Contract, the Contractor shall submit schedule of values for approval on the Contract Breakdown form furnished by the Iowa Department of Transportation. Contractor shall submit an Application for Payment on forms furnished by the Iowa Department of Transportation based on Contract Breakdown.
- C. The contractor shall, before the first application, submit to the Iowa DOT a schedule of values of the various parts of the work, aggregating the total sum of the contract, made out in such form as the Iowa DOT may direct and, if required, supported by evidence as to its correctness. This schedule, when approved by the Iowa DOT, shall be used as a basis for requests for payment.
- D. Final payment shall be authorized not later than thirty (30) days following the completion and final acceptance of the contract, provided that paragraph 1-3 herein and all other contract requirements have been fulfilled, accepted and approved, where no claims have been filed or following adjudication or release of claims as provided in Chapter 573 of the Code of Iowa.

- E. No notification of payment being processed, no payment made to the Contractor, no partial payment, nor the entire use or occupancy of the work by the Iowa DOT shall be held to constitute an acceptance, in whole or in part, by the Iowa DOT prior to making the final payment and acceptance in full completion of the contract.

### **3.6 Protection of Persons and Property**

#### **A. Safety and Health Regulations:**

The Contractor, serving in the role of the employer for the project, shall exercise at all times the protection of all persons and property. Contractor shall comply with all requirements of the Occupational Safety and Health Act of 1970, Iowa Bureau of Labor and all applicable state and municipal laws, as well as building and construction codes. It is the Contractor's responsibility to enforce all regulations that apply to this project.

#### **B. Protection of Site:**

The Contractor shall furnish all permanent and temporary guards, signs, fencing, shoring, and underpinning and other protection necessary in the performance of the contract and for the necessary protection of all public and private property and shall be responsible for any damage caused by failure to comply with this requirement.

- After building operations are completed, the Contractor shall replace or satisfactorily repair all damaged walks or pavements which shall have become damaged due to operations of this project.
- The Contractor shall take care of all underground pipes, conduits, etc., encountered in the excavations, and protect same from damage until such time as they can be permanently disposed of.
- The Contractor shall continuously maintain adequate protection of all work from damage and shall protect the Owner's property and adjacent property from damage arising in connection with this contract.

### **3.7 Insurance Requirements**

#### *Contractor's Insurance*

- It shall be the Contractor's responsibility to have liability insurance covering all of the project operations incident to contract completion and the Contractor(s) must have on file with the Contracting Authority a current "Certificate of Insurance" prior to award of contract. The certificate shall identify the insurance company firm name and address, contractor firm name, policy period, type of policy, limits of coverage, and scope of work covered (single contract or statewide). This requirement shall apply with equal force, whether the work is performed by persons employed directly by the Contractor(s) including a subcontractor, persons employed by a subcontractor(s), or by an independent contractor(s).
- In addition to the above, the Contracting Authority shall be included as an insured party, or a separate owner's protective policy shall be filed showing the Contracting Authority as an insured party.

- The liability insurance shall be written by an insurance company (or companies) qualified to do business in Iowa. For independent contractors engaged solely in the transportation of materials, the minimum coverage provided by such insurance shall be not less than that required by Chapter 325A, Code of Iowa, for such truck operators or contract carriers as defined therein. For all other contractors, subcontractors, independent contractors, and the Contracting Authority, the minimum coverage by such insurance shall be as follows:

- Comprehensive General Liability including Contractual Liability;
- Contingent Liability; Explosion, Collapse and Underground Drainage
- Damage; Occurrence Basis Bodily Injury; Broad Form Personal Injury; Broad Form Property Damage.

### **Bodily Injury**

The contractor will purchase and maintain throughout the term of this contract the follow minimum limits and coverage:

- Each person \$750,000
- Each accident/occurrence \$750,000
- Workers Compensation \$750,000
- Statutory Limits \$750,000
- Employer's liability \$750,000
- Occupation Disease \$750,000

### **Operations**

- Property Damage \$250,000 each occurrence

### **Builders Risk Insurance:**

- Each Contractor holding a valid contract with the Owner shall furnish and pay for builder's risk insurance, providing coverage for at least the following losses: fire, extended coverage, vandalism and malicious damage to materials incorporated in the project, and materials purchased to be incorporated in the project, either stored on or off the permanent job site. If this insurance coverage is not provided, the Contractor shall assume all responsibility for the perils outlined above which may occur prior to project completion and acceptance.
- Failure on the part of the Contractor(s) to comply with the requirements of this Article will be considered sufficient cause to suspend the work, withhold estimates, and to deny the Contractor(s) any further contract awards, as provided in Article 1103.01.
- The Contractor(s) shall require all subcontractor(s) meet the above insurance requirements.

### **The Certificate of Insurance must include the following;**

- Iowa Department of Transportation must be listed as an additional insured
- Proposal Number
- Proposal Description
- Letting Date and
- Contract Period

### **3.8 Miscellaneous Provisions**

#### **A. Iowa State Building Code:**

- All construction under this section shall conform to the requirements of the Iowa State Building Code. The provisions of the Iowa State Building Code will be strictly adhered to, and will take precedence over any local Governmental Body Regulations. Work not regulated by the Iowa State Building Code shall be performed in accordance with local Governmental Body Regulations.
- All construction shall conform to the Standard Specifications for Highway and Bridge Construction, Series 2012 where applicable.

#### **B. Discriminatory Practices:**

- All contractors or subcontractors working under the terms of this project are prohibited from engaging in discriminatory employment practices as forbidden by the Iowa Civil Rights Act of 1965. These provisions shall be fully enforced, as directed through Executive Order Number 34 dated July 22, 1988. Any breach of the provisions contained in the Iowa Civil Rights Acts of 1965 shall be regarded as a material breach of contract.
- Bidder agrees that if awarded a contract to construct and/or remodel any portion of the project described in these Specifications, neither the contractor nor any subcontractors will engage in any discriminatory employment practices based on race, color, creed, religion of natural origin and that they will in all contracts comply with all statutes of the State of Iowa against discrimination. Failure to do so could be deemed a material breach of contract.

### **3.9 Public Contract Termination:**

The provisions of Iowa Law as contained in Chapter 573A of the Code of Iowa, an Act to provide for termination of contracts for the construction of public improvements when construction or work thereon is stopped because of national emergency, shall apply to and be a part of this Contract, and shall be binding upon all parties hereto, including sub-contractors and sureties upon any bond given or filed in connection herewith.

# Perry Maintenance Garage Radiant Heat Replacement

14455 N Avenue, U.S. 169  
Bouton, IA 50039

## PROJECT MANUAL

Building Specifications for  
Maintenance Garage Radiant Heat Replacement  
Date: August 2014  
Project Number: BG-252P21(007)-80-25

**SECTION 00 0001**

**Perry Maintenance Garage, Radiant Heat Replacement**

**PROJECT MANUAL**  
BIDDING REQUIREMENTS  
CONDITIONS OF THE CONTRACT  
TECHNICAL SPECIFICATIONS

**OWNER:**  
IOWA DEPARTMENT OF TRANSPORTATION  
OFFICE OF SUPPORT SERVICES  
800 LINCOLN WAY  
AMES, IOWA 50010

**DIRECTOR OF SUPPORT SERVICES**  
ANNETTE DUNN  
(515) 239 – 1327  
Annette.Dunn@dot.iowa.gov

**FACILITIES FIELD COORDINATOR**  
DANIEL APATIGA  
(515) 239 – 1627  
Daniel.Apatiga@dot.iowa.gov

**DESIGN TEAM LEADER**  
  
(515) 239 – 1443

**PROJECT MANAGER**  
LYNN RUSHER  
(515) 239 – 1186  
Lynn.Rusher@dot.iowa.gov

**PURCHASING**  
MARY ZIMMERMAN  
(515) 239 – 1298  
Mary.Zimmerman@dot.iowa.gov

END OF PROJECT CONTACTS PAGE

**SECTION 00 0101  
PROJECT TITLE PAGE**

**PERRY MAINTENANCE GARAGE RADIANT HEAT REPLACEMENT**

**14455 N AVENUE, U.S. HIGHWAY 169  
BOUTON, IA 50039**

**PROJECT MANUAL  
SPECIFICATIONS FOR PERRY MAINTENANCE GARAGE RADIANT HEAT REPLACEMENT  
DATE: AUGUST 2014  
PROJECT NUMBER: BG-252P21(007)--80-25**

**END OF PROJECT TITLE PAGE**



**SECTION 00 0110  
TABLE OF CONTENTS**

**PROCUREMENT AND CONTRACTING REQUIREMENTS**

**1.01 DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS**

- A. 00 0101 - Project Title Page
- B. 00 0110 - Table of Contents
- C. 00 0115 - List of Drawing Sheets

**SPECIFICATIONS**

**2.01 DIVISION 01 -- GENERAL REQUIREMENTS**

- A. 01 1000 - Summary
- B. 01 2000 - Price and Payment Procedures
- C. 01 3000 - Administrative Requirements
- D. 01 4000 - Quality Requirements
- E. 01 6000 - Product Requirements
- F. 01 7000 - Execution and Closeout Requirements
- G. 01 7419 - Construction Waste Management and Disposal
- H. 01 7800 - Closeout Submittals

**2.02 DIVISION 02 -- EXISTING CONDITIONS**

- A. 02 4100 - Demolition

**2.03 DIVISION 09 -- FINISHES**

- A. 09 9000 - Painting and Coating

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

- A. 23 5533 - Fuel-Fired Unit Heaters

**2.05 DIVISION 26 -- ELECTRICAL**

- A. 26 2717 - Equipment Wiring

**END OF TABLE OF CONTENTS**



**SECTION 00 0115  
LIST OF DRAWING SHEETS**

**ARCHITECTURAL DRAWINGS:**

**01 M-1                      RADIANT HEAT REPLACEMENT PLAN**

**END OF LIST OF DRAWINGS**



**SECTION 01 1000  
SUMMARY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Contract description.
- B. Owner supplied products.
- C. Contractor's use of site and premises.
- D. Owner occupancy.
- E. Specification Conventions.

**1.02 PROJECT**

- A. Project Name: Perry Maintenance Garage - Radiant Heat Replacement.
- B. Owner's Name: Iowa Department of Transportation.
- C. Architect's Name: Iowa Department of Transportation, Office of Facilities Support Services.
- D. The Project consists of the replacement of the existing radiant heat system.

**1.03 CONTRACT DESCRIPTION**

- A. Contract Type: Stipulated Price as described in Standard form of Agreement Between the Contractor and Owner, AIA Form A101, latest Edition.

**1.04 DESCRIPTION OF ALTERATIONS WORK**

- A. Scope of demolition and removal work is shown on drawings and specified in Section 02 4100.

**1.05 OWNER OCCUPANCY**

- A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Construction, including punch list items, must be completed no later than the following date: 90 calendar days after start of contract.
  - 1. Extension requests must be in writing and must be accompanied by appropriate documentation supporting the reason for the extension request.
  - 2. No extensions or additional payments will be allowed for cold weather construction.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy.

**1.06 CONTRACTOR USE OF SITE AND PREMISES**

- A. Arrange use of site and premises to allow:
  - 1. Owner occupancy.
- B. Provide access to and from site as required by law and by Owner:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- C. Existing building spaces may not be used for storage.
- D. Time Restrictions:
  - 1. Contractor may perform construction operations any day of the week and at any time of the day, but must have a representative present during any Sub-Contractor work.
- E. Utility Outages and Shutdown:
  - 1. Limit shutdown of utility services to 1 hours at a time, arranged at least 24 hours in advance with Owner.
  - 2. Prevent accidental disruption of utility services to other facilities.

**1.07 SPECIFICATION CONVENTIONS**

- A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.
- B. The following terms are used throughout the specifications and defined as follows:
  - 1. Contractor: General Contractor or contractor responsible for Work of specified section
  - 2. Owner: Representative of building occupants.
  - 3. Architect/Engineer: Representative of Facilities Support.

**1.08 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS**

- A. Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 01 2000 - Price and Payment Procedures.
- C. Section 01 3000 - Administrative Requirements.
- D. Section 01 3216 - Construction Progress Schedule.
- E. Section 01 4000 - Quality Requirements.
- F. Section 01 5000 - Temporary Facilities and Controls.
- G. Section 01 6000 - Product Requirements.
- H. Section 01 7000 - Execution and Closeout Requirements.
- I. Section 01 7419 - Construction Waste Management and Disposal.
- J. Section 01 7800 - Closeout Submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

**SECTION 01 2000  
PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.

**1.02 SCHEDULE OF VALUES**

- A. Form to be used: AIA G702 - Application and Certificate of Payment, AIA G703 - Continuation Sheet.
- B. Forms filled out by hand will not be accepted.
- C. Submit Schedule of Values in duplicate within 10 days after date of Owner-Contractor Agreement.
- D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization.
- E. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- F. Revise schedule to list approved Change Orders, with each Application For Payment.

**1.03 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Form to be used: AIA G702 - Application and Certificate of Payment, AIA G703 - Continuation Sheet.
- C. Forms filled out by hand will not be accepted.
- D. For each item, provide a column for listing each of the following:
  - 1. Item Number.
  - 2. Description of work.
  - 3. Scheduled Values.
  - 4. Previous Applications.
  - 5. Work in Place and Stored Materials under this Application.
  - 6. Authorized Change Orders.
  - 7. Total Completed and Stored to Date of Application.
  - 8. Percentage of Completion.
  - 9. Balance to Finish.
  - 10. Retainage.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. Submit three copies of each Application for Payment.
- H. Include the following with the application:
  - 1. Construction progress schedule, revised and current as specified in Section 01 3000.
- I. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

**1.04 MODIFICATION PROCEDURES**

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue an AIA Document G701 change order document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.

1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue an AIA Document G709 work change proposal request that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 10 days.
- D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.
- E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
1. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
  2. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.
- F. Substantiation of Costs: Provide full information required for evaluation.
1. On request, provide following data:
    - a. Overhead and profit.
      - 1) Will not exceed 15 percent total between General Contractor and Sub Contractor.
  2. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- G. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- H. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
- I. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

#### **1.05 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:

**END OF SECTION**

**SECTION 01 3000**  
**ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Stages of the Work, Work covered by each contract, occupancy,..
- B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents.

**1.02 PROJECT COORDINATION**

- A. Project Coordinator: Project Manager.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for vehicular access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
  - 1. Requests for interpretation.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.
  - 6. Manufacturer's instructions and field reports.
  - 7. Applications for payment and change order requests.
  - 8. Progress schedules.
  - 9. Coordination drawings.
  - 10. Closeout submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRECONSTRUCTION MEETING**

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Contractor.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties to Contract, Owner and Architect.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.

- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.02 PROGRESS MEETINGS**

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- C. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of Work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems that impede, or will impede, planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Maintenance of progress schedule.
  - 7. Corrective measures to regain projected schedules.
  - 8. Planned progress during succeeding work period.
  - 9. Maintenance of quality and work standards.
  - 10. Effect of proposed changes on progress schedule and coordination.
  - 11. Other business relating to Work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.03 CONSTRUCTION PROGRESS SCHEDULE**

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Submit updated schedule with each Application for Payment.

### **3.04 SPECIAL PROCEDURES**

- A. A.: As specified in product sections; match existing with new products for patching and extending work.
- B. Employ skilled and experienced installer to perform alternation work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, include rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to permit installation of new work and finishes.
- G. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- H. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect/Engineer for review.
- I. Where change of plane of 1/4 inch or more occurs, submit recommendation for providing smooth transition, to Architect/Engineer for review.
- J. Finish surfaces as specified in individual product sections.

### **3.05 COORDINATION DRAWINGS**

- A. Provide information required by Project Coordinator for preparation of coordination drawings.
- B. Review drawings prior to submission to Architect.

**3.06 SUBMITTALS FOR REVIEW**

- A. When the following are specified in individual sections, submit them for review:
  - 1. Product data.
  - 2. Shop drawings.
  - 3. Samples for selection.
  - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - CLOSEOUT SUBMITTALS.

**3.07 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  - 1. Design data.
  - 2. Certificates.
  - 3. Test reports.
  - 4. Inspection reports.
  - 5. Manufacturer's instructions.
  - 6. Manufacturer's field reports.
  - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

**3.08 NUMBER OF COPIES OF SUBMITTALS**

- A. Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Documents for Information: Submit one copy.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
  - 1. After review, produce duplicates.
  - 2. Retained samples will not be returned to Contractor unless specifically so stated.

**3.09 SUBMITTAL PROCEDURES**

- A. Transmittal Form: AIA G810.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- D. Deliver submittals to Architect in electronic format only. Only physical samples to be submitted to the Architect at business address.
- E. Schedule submittals to expedite the Project, and coordinate submission of related items.
- F. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- G. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- H. Provide space for Contractor and Architect review stamps.
- I. When revised for resubmission, identify all changes made since previous submission.
- J. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

K. Submittals not requested will not be recognized or processed.

**END OF SECTION**

**SECTION 01 4000  
QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.
- B. Section 01 6000 - Product Requirements: Requirements for material and product quality.

**1.02 SUBMITTALS**

- A. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
  - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- B. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- C. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
  - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

**1.03 REFERENCES AND STANDARDS**

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

**1.04 TESTING AND INSPECTION AGENCIES**

- A. Contractor Employed Agency:
  - 1. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

**PART 3 EXECUTION**

**2.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

**2.02 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

**2.03 TESTING AND INSPECTION**

- A. See individual specification sections for testing and inspection required.
- B. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.
- C. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

**2.04 MANUFACTURERS' FIELD SERVICES**

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

**2.05 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

**END OF SECTION**

**SECTION 01 6000  
PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Equipment electrical characteristics and components.
- G. Maintenance materials, including extra materials, spare parts, tools, and software.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary - : Lists of products to be removed from existing building.
- B. Section 01 4000 - Quality Requirements: Product quality monitoring.
- C. Section 01 7419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting packaging and substitutions.

**1.03 REFERENCE STANDARDS**

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.04 SUBMITTALS**

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

**PART 2 PRODUCTS**

**2.01 EXISTING PRODUCTS**

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

**2.02 NEW PRODUCTS**

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. DO NOT USE products having any of the following characteristics:
  - 1. Made using or containing CFC's or HCFC's.
  - 2. Containing lead, cadmium, asbestos.
- C. Where all other criteria are met, Contractor shall give preference to products that:
  - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.
  - 2. Have longer documented life span under normal use.

3. Result in less construction waste.
4. Are made of vegetable materials that are rapidly renewable.

### **2.03 PRODUCT OPTIONS**

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

### **2.04 MAINTENANCE MATERIALS**

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

## **PART 3 EXECUTION**

### **3.01 SUBSTITUTION PROCEDURES**

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. A request for substitution constitutes a representation that the submitter:
  1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  2. Will provide the same warranty for the substitution as for the specified product.
  3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
  4. Waives claims for additional costs or time extension that may subsequently become apparent.
  5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- D. Substitution Submittal Procedure:
  1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
  2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
  3. The Architect will notify Contractor in writing of decision to accept or reject request.

### **3.02 TRANSPORTATION AND HANDLING**

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

**3.03 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS**

- A. Wiring Terminators: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Include lugs for terminal box.
- B. Cord and Plug: Furnish minimum 6 foot cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

**3.04 STORAGE AND PROTECTION**

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

**END OF SECTION**



**SECTION 01 7000  
EXECUTION AND CLOSEOUT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures.
- C. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 7419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- E. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.
- F. Section 02 4100 - Demolition: Demolition of whole structures and parts thereof; site utility demolition.

**1.02 REFERENCE STANDARDS**

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of Owner or separate Contractor.

**1.04 PROJECT CONDITIONS**

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

**1.05 COORDINATION**

- A. See Section 01 1000 for occupancy-related requirements.
- B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Notify affected utility companies and comply with their requirements.
- D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate sections.
- H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## **PART 2 PRODUCTS**

### **2.01 PATCHING MATERIALS**

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### **3.03 LAYING OUT THE WORK**

- A. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
  - 1. Grid or axis for structures.
  - 2. Building foundation, column locations, ground floor elevations.
- B. Periodically verify layouts by same means.

### **3.04 GENERAL INSTALLATION REQUIREMENTS**

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### **3.05 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
  - 1. Complete the work.

2. Fit products together to integrate with other work.
  3. Provide openings for penetration of mechanical, electrical, and other services.
  4. Match work that has been cut to adjacent work.
  5. Repair areas adjacent to cuts to required condition.
  6. Repair new work damaged by subsequent work.
  7. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- I. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
  2. Match color, texture, and appearance.
  3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### **3.06 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

### **3.07 PROTECTION OF INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

**3.08 SYSTEM STARTUP**

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

**3.09 DEMONSTRATION AND INSTRUCTION**

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.
- E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

**3.10 ADJUSTING**

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

**3.11 FINAL CLEANING**

- A. Execute final cleaning prior to final project assessment.
- B. Use cleaning materials that are nonhazardous.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

**3.12 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to Architect and Owner.
- B. Notify Architect when work is considered ready for Substantial Completion.
- C. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.

- D. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.
- E. Notify Architect when work is considered finally complete.
- F. Complete items of work determined by Architect's final inspection.

**3.13 MAINTENANCE**

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

**END OF SECTION**



**SECTION 01 7419**

**CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

**PART 1 GENERAL**

**1.01 WASTE MANAGEMENT REQUIREMENTS**

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.
- E. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.
- F. Methods of trash/waste disposal that are not acceptable are:
  - 1. Burning on the project site.
  - 2. Burying on the project site.
  - 3. Dumping or burying on other property, public or private.
  - 4. Other illegal dumping or burying.
- G. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: List of items to be salvaged from the existing building for relocation in project or for Owner.
- B. Section 01 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- D. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- E. Section 01 7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

**1.03 DEFINITIONS**

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

#### 1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Waste Management Plan: Include the following information:
  - 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
  - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
  - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
  - 4. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
  - 5. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.
- C. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
  - 1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
  - 2. Submit Report on a form acceptable to Owner.
  - 3. Landfill Disposal: Include the following information:
    - a. Identification of material.
    - b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project disposed of in landfills.
    - c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
    - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  - 4. Incinerator Disposal: Include the following information:
    - a. Identification of material.
    - b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project delivered to incinerators.
    - c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.

- d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
5. Recycled and Salvaged Materials: Include the following information for each:
  - a. Identification of material, including those retrieved by installer for use on other projects.
  - b. Amount, in tons or cubic yards (cubic meters), date removed from the project site, and receiving party.
  - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
  - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
6. Material Reused on Project: Include the following information for each:
  - a. Identification of material and how it was used in the project.
  - b. Amount, in tons or cubic yards (cubic meters).
  - c. Include weight tickets as evidence of quantity.
7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

### **PART 3 EXECUTION**

#### **2.01 WASTE MANAGEMENT PROCEDURES**

- A. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.
- C. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.
- D. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

#### **2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION**

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
  1. Pre-bid meeting.
  2. Pre-construction meeting.
  3. Regular job-site meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
  1. Provide containers as required.
  2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
  3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

**END OF SECTION**

**SECTION 01 7800  
CLOSEOUT SUBMITTALS**

**PART 1 GENERAL**

**1.01 1.01 SECTION INCLUDES**

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
  - 2. Submit copies of final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PROJECT RECORD DOCUMENTS**

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed shop drawings, product data, and samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Field changes of dimension and detail.
  - 2. Details not on original Contract drawings.

### **3.02 OPERATION AND MAINTENANCE DATA**

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

### **3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS**

- A. For Each Item of Equipment and Each System:
  - 1. Description of unit or system, and component parts.
  - 2. Identify function, normal operating characteristics, and limiting conditions.
  - 3. Include performance curves, with engineering data and tests.
  - 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Additional Requirements: As specified in individual product specification sections.

### **3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS**

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
  - 1. Project Directory.
  - 2. Table of Contents, of all volumes, and of this volume.
  - 3. Operation and Maintenance Data: Arranged by system, then by product category.
    - a. Source data.
    - b. Product data, shop drawings, and other submittals.
    - c. Operation and maintenance data.
    - d. Field quality control data.

### **3.05 WARRANTIES AND BONDS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.
- F. Manual: Bind in commercial quality 8-1/2 by 11 inch (216 by 279 mm) three D side ring binders with durable plastic covers.
- G. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- H. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- I. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

**END OF SECTION**



**SECTION 02 4100  
DEMOLITION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Selective demolition of built site elements.
- B. Abandonment and removal of existing utilities and utility structures.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.
- C. Section 01 7419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

**1.03 REFERENCE STANDARDS**

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2009.

**1.04 RELATED SECTIONS**

- A. Section 01 7419 - Construction Waste Management and Disposal

**PART 2 PRODUCTS -- NOT USED**

**PART 3 EXECUTION**

**3.01 SCOPE**

- A. Remove existing radiant heat system as noted on the drawings.
- B. Remove other items indicated, for salvage, relocation, and recycling.

**3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS**

- A. Comply with other requirements specified in Section 01 7000.
- B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
  - 1. Comply with applicable requirements of NFPA 241.
  - 2. Use of explosives is not permitted.
  - 3. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
  - 4. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
- C. Do not begin removal until receipt of notification to proceed from Owner.
- D. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- E. Perform demolition in a manner that maximizes salvage and recycling of materials.
  - 1. Comply with requirements of Section 01 7419 - Waste Management.

**3.03 EXISTING UTILITIES**

- A. Protect existing utilities to remain from damage.
- B. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

**3.04 DEBRIS AND WASTE REMOVAL**

- A. Remove debris, junk, and trash from site.
- B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 7419 - Waste Management.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

**END OF SECTION**

**SECTION 09 9000  
PAINTING AND COATING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.

**1.02 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of all products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
  - 2. MPI product number (e.g. MPI #47).
  - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
  - 4. Manufacturer's installation instructions.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.

**1.03 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

**1.04 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
  - 1. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
- C. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 PAINTS AND COATINGS - GENERAL**

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
  - 1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 2. Supply each coating material in quantity required to complete entire project's work from a single production run.

3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Colors: As indicated on drawings

### **2.03 PAINT SYSTEMS - INTERIOR**

- A. Paint MI-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
  1. One coat of alkyd primer.
  2. Gloss: Two coats of alkyd enamel; color as noted on the drawings.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

### **3.02 APPLICATION**

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance.

**END OF SECTION**

**SECTION 23 5533**  
**FUEL-FIRED UNIT HEATERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. High-intensity infrared heaters.
- B. Room thermostats.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

**1.03 REFERENCE STANDARDS**

- A. NFPA 54 - National Fuel Gas Code; National Fire Protection Association; 2012.
- B. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2012.
- C. NFPA 211 - Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances; National Fire Protection Association; 2013.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's literature and data indicating rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
- C. Shop Drawings: Indicate assembly, required clearances, and locations and sizes of field connections.
- D. Manufacturer's Instructions: Indicate rigging, assembly, and installation instructions.
- E. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts listing.
- F. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Project Requirements, for additional provisions.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

**1.06 REGULATORY REQUIREMENTS**

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer's warranty for heat exchangers.

**PART 2 PRODUCTS**

**2.01 HIGH INTENSITY INFRARED HEATERS**

- A. Manufacturers:
  - 1. Roberts Gordon, LLC: [www.rg-inc.com](http://www.rg-inc.com) - Model: Co-Ray-Vac.
- B. Infrared Heaters: High-intensity type; self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, heat exchanger, burner, reflector, controls.
- C. Cabinet: Galvanized steel with baked enamel finish.
- D. Ceramic Emitter: Assembly of high temperature ceramic tiles with stainless steel housing and reflector.

- E. Gas Burner:
  - 1. Forced draft type with adjustable combustion air supply,
  - 2. Gas valve provides 100 percent safety gas shut-off; 24 volt combining pressure regulation, safety pilot, manual set (On-Off), pilot filtration, automatic electric valve.
  - 3. Burners shall be designed for firing in tandem without adverse effects from combustion gasses from upstream burners.
  - 4. The design of the burners supplied shall provide for maintaining a consistant proportion of fuel gas to filtered combustion air. These conditions are met for burners in which the pressure of both the fuel gas and the combustion air are both introduced at zero (atmospheric) pressure and the flow of each is established by a vacuum on the downstream side of the flow netering orifices.
  - 5. Electronic pilot ignition, with electric spark igniter
  - 6. Non-corrosive burner air blower with permanently lubricated motor.
- F. Gas Burner Safety Controls: Thermo-couple sensor prevents opening of solenoid gas valve until pilot flame is proven and stops gas flow on ignition failure.
  - 1. To assure a high degree of fail safe operation, the design shall preclude main flow of gas if any or all of the following abnornal conditions occur in the non-firing mode:
    - a. Main valve fails in open position
    - b. Vacuum pump motor fails to operate
    - c. Power fails
    - d. Flame not established or faulty
  - 2. To further assure a high degree of safety, the system will be under negative pressure at all items during operation to preclude the possibility of the escape of combustion gasses inside the building.
- G. System Controls:
  - 1. All combustion chambers and heat exchanger pipes connected to a vacuum pump shall be **pre-purged** with air for a period of at least 20 seconds (10 air changes minimum) prior to initiation of firing sequence.
  - 2. All combustion chambers and heat exchanger pipes connected to a vacuum pump shall be **post-purged** with air for a period of at least 20 seconds (10 air changes minimum) **after shut-down** of the last burner firing into the vacuum pump.
  - 3. All vacuum pump motors shall be provided with centrifugal switches to prevent energization of gas valves until pump motor operation is proven.
  - 4. All burners shall be provided with a pilot sensing switch to prevent flow of gas to main burner until pilot flame is both proven initially and maintained throughout the firing cycle.
  - 5. Room Thermostat: Low voltage, to control burner operation.
  - 6. Control Panel:
    - a. 120 volt control panel will control burners and vacuum pumps
    - b. Electronic controls matched to characteristics of system
    - c. Connected to 24v room thermostats
- H. Equipment:
  - 1. Burner:
    - a. Each burner assembly shall consist of heavy-duty cast iron burner heads, pre-wired gas controls with electronic ignition and combustion air filters.
  - 2. Vacuum Pump:
    - a. The housing shall be heavy-duty cast iron. The impeller shall be cast aluminum alloy dynamically balanced and mounted for direct drive on the motor shaft.
    - b. The vacuum pump shall be acoustically isolated from the system with flexible connector with temperature rating of 350 degrees F, minimum. The motor in the vacuum pump shall be secured with rubber mounts for acoustical isolation.
    - c. Vacuum pump motor shall be 230/115V, 60Hz, 3450 RPM, reversible rotation, with at least 1/2 HP, capacitor start, ball bearings, and thermally protected.

3. Heat Exchanger:
  - a. Radiant pipe (between burners and 20 feet downstream of last burner) shall be of 4" O.D. steel pipe (ie: tubing).
  - b. The balance of pipe shall be 4: O.D. steel tubing with an internal coating of acid-resistant porcelain.
  - c. All heat exchanger (pipe) connections shall be made with stainless steel coupling assemblies. These will be of two types as follows:
    - 1) Unlined couplings for use with uncoated tubing or joints to connect uncoated tubing to coated tubing.
    - 2) Lined couplings for use with coated tubing.
  - d. The maximum input firing rate shall not exceed 2,400 BTU per hour per square foot of exterior radiating surface of heat exchanger for the heating system in total. The total heat exchanger surface is that associated with one vacuum pump.
4. Burner Control Modules:
  - a. All burners shall be pre-wired with a three-conductor electrical cord and plug with the 3rd wire for ground circuit.
5. Panel Box for System Controls:
  - a. Pre-wired system control circuits shall be supplied in a panel box with each vacuum pump. The panel box for the standard burners shall provide relays and terminals to accommodate up to four temperature zones with a thermostat and associated control circuits for the burners for each temperature zone. The panel box for the dual fuel burner system shall provide relays and terminals to accommodate up to two temperature zones with a thermostat and associated control circuits for the burners for each temperature zone.
6. Outside Air:
  - a. When specified, the system shall be capable of supplying air from the outside to each burner.
  - b. Outside (combustion air) may be supplied to each burner with PVC and fittings.
  - c. Provide fiberglass insulated jacket with vinyl cover over intake air piping where shown on the drawings.
- I. Accessories:
  1. Steel supports and hanger chain
  2. Intake air wall caps with bird screens
  3. Sealants:
    - a. Acrylic joint sealant around outside air intake pipes.
    - b. Seal around exhaust pipes as per manufacturer's instructions.
- J. Performance:
  1. Motor: Refer to Schedule.
  2. Heating Capacity:
    - a. See plans for BTU input.
    - b. Gas heating capacities are sea level ratings.

## **2.02 ROOM THERMOSTATS**

- A. Manufacturers:
  1. Honeywell; model - to match existing: [www.honeywell.com](http://www.honeywell.com).

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that space is ready for installation of units and openings are as indicated on shop drawings.
- B. Verify that proper power supply is available.
- C. Verify that proper fuel supply is available for connection.

**3.02 INSTALLATION**

- A. Install in accordance with NFPA 90A.
- B. Install gas fired units in accordance with NFPA 54 and applicable codes.
- C. Provide rigid gas piping extensions and flexible connections as required for a complete system. Install as per NFPA and applicable codes.
- D. Provide vent connections in accordance with NFPA 211.
- E. Provide connection to electrical power systems; refer to Section 26 2717.

**3.03 SCHEDULES**

- A. See drawings for schedule.
- B. Fuel Fired Unit Heaters and Vacuum Pumps
  - 1. Manufacturer: Roberts-Gordon
  - 2. Model: Co-Ray-Vac

**END OF SECTION**

**SECTION 26 2717  
EQUIPMENT WIRING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical connections to equipment.

**1.02 REFERENCE STANDARDS**

- A. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2010).
- B. NEMA WD 6 - Wiring Devices - Dimensional Requirements; National Electrical Manufacturers Association; 2002 (R2008).
- C. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
  - 2. Determine connection locations and requirements.
- B. Sequencing:
  - 1. Install rough-in of electrical connections before installation of equipment is required.
  - 2. Make electrical connections before required start-up of equipment.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
  - 1. Colors: Conform to NEMA WD 1.
  - 2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
  - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
- B. Provide rigid conduit, boxes, wire, wiring devices as necessary to provide a complete system to match existing.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

**3.02 ELECTRICAL CONNECTIONS**

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

**END OF SECTION**

# Missouri Valley Maintenance Garage Radiant Heat Replacement

2308 U.S. 30  
Missouri Valley, IA 51555

## PROJECT MANUAL

Building Specifications for  
Maintenance Garage Radiant Heat Replacement  
Date: September 2014  
Project Number: BG-431M1(012)-80-43

**SECTION 00 0001**

**Missouri Valley Maintenance Garage, Radiant Heat Replacement**

**PROJECT MANUAL**  
BIDDING REQUIREMENTS  
CONDITIONS OF THE CONTRACT  
TECHNICAL SPECIFICATIONS

**OWNER:**  
IOWA DEPARTMENT OF TRANSPORTATION  
OFFICE OF SUPPORT SERVICES  
800 LINCOLN WAY  
AMES, IOWA 50010

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END OF PROJECT CONTACTS PAGE

**SECTION 00 0101  
PROJECT TITLE PAGE**

**MISSOURI VALLEY MAINTENANCE GARAGE - RADIANT HEAT REPLACEMENT**

**2308 U.S. HIGHWAY 30  
MISSOURI VALLEY, IA 51555**

**PROJECT MANUAL  
SPECIFICATIONS FOR MISSOURI VALLEY MAINTENANCE GARAGE -  
RADIANT HEAT REPLACEMENT  
DATE: SEPTEMBER 2014  
PROJECT NUMBER: BG-431M11(012)--80-43**

**END OF PROJECT TITLE PAGE**



**SECTION 00 0110  
TABLE OF CONTENTS**

**PROCUREMENT AND CONTRACTING REQUIREMENTS**

**1.01 DIVISION 00 -- PROCUREMENT AND CONTRACTING REQUIREMENTS**

- A. 00 0101 - Project Title Page
- B. 00 0110 - Table of Contents
- C. 00 0115 - List of Drawing Sheets

**SPECIFICATIONS**

**2.01 DIVISION 01 -- GENERAL REQUIREMENTS**

- A. 01 1000 - Summary
- B. 01 2000 - Price and Payment Procedures
- C. 01 3000 - Administrative Requirements
- D. 01 4000 - Quality Requirements
- E. 01 6000 - Product Requirements
- F. 01 7000 - Execution and Closeout Requirements
- G. 01 7419 - Construction Waste Management and Disposal
- H. 01 7800 - Closeout Submittals

**2.02 DIVISION 02 -- EXISTING CONDITIONS**

- A. 02 4100 - Demolition

**2.03 DIVISION 09 -- FINISHES**

- A. 09 9000 - Painting and Coating

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

- A. 23 5533 - Fuel-Fired Unit Heaters

**2.05 DIVISION 26 -- ELECTRICAL**

- A. 26 2717 - Equipment Wiring

**END OF TABLE OF CONTENTS**



**SECTION 00 0115  
LIST OF DRAWING SHEETS**

**ARCHITECTURAL DRAWINGS:**

**01 M-1                      RADIANT HEAT REPLACEMENT PLAN**

**END OF LIST OF DRAWINGS**



**SECTION 01 1000  
SUMMARY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Contract description.
- B. Owner supplied products.
- C. Contractor's use of site and premises.
- D. Owner occupancy.
- E. Specification Conventions.

**1.02 PROJECT**

- A. Project Name: Missouri Valley Maintenance Garage - Radiant Heat Replacement.
- B. Owner's Name: Iowa Department of Transportation.
- C. Architect's Name: Iowa Department of Transportation, Office of Facilities Support Services.
- D. The Project consists of the replacement of the existing radiant heat system.

**1.03 CONTRACT DESCRIPTION**

- A. Contract Type: Stipulated Price as described in Standard form of Agreement Between the Contractor and Owner, AIA Form A101, latest Edition.

**1.04 DESCRIPTION OF ALTERATIONS WORK**

- A. Scope of demolition and removal work is shown on drawings and specified in Section 02 4100.

**1.05 OWNER OCCUPANCY**

- A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Construction, including punch list items, must be completed no later than the following date: 90 calendar days after start of contract.
  - 1. Extension requests must be in writing and must be accompanied by appropriate documentation supporting the reason for the extension request.
  - 2. No extensions or additional payments will be allowed for cold weather construction.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy.

**1.06 CONTRACTOR USE OF SITE AND PREMISES**

- A. Arrange use of site and premises to allow:
  - 1. Owner occupancy.
- B. Provide access to and from site as required by law and by Owner:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
- C. Existing building spaces may not be used for storage.
- D. Time Restrictions:
  - 1. Contractor may perform construction operations any day of the week and at any time of the day, but must have a representative present during any Sub-Contractor work.
- E. Utility Outages and Shutdown:
  - 1. Limit shutdown of utility services to 1 hour at a time, arranged at least 24 hours in advance with Owner.
  - 2. Prevent accidental disruption of utility services to other facilities.

**1.07 SPECIFICATION CONVENTIONS**

- A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.
- B. The following terms are used throughout the specifications and defined as follows:
  - 1. Contractor: General Contractor or contractor responsible for Work of specified section
  - 2. Owner: Representative of building occupants.
  - 3. Architect/Engineer: Representative of Facilities Support.

**1.08 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS**

- A. Unless otherwise noted, all provisions of the sections listed below apply to all contracts. Specific items of work listed under individual contract descriptions constitute exceptions.
- B. Section 01 2000 - Price and Payment Procedures.
- C. Section 01 3000 - Administrative Requirements.
- D. Section 01 3216 - Construction Progress Schedule.
- E. Section 01 4000 - Quality Requirements.
- F. Section 01 5000 - Temporary Facilities and Controls.
- G. Section 01 6000 - Product Requirements.
- H. Section 01 7000 - Execution and Closeout Requirements.
- I. Section 01 7419 - Construction Waste Management and Disposal.
- J. Section 01 7800 - Closeout Submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

**SECTION 01 2000  
PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.

**1.02 SCHEDULE OF VALUES**

- A. Form to be used: AIA G702 - Application and Certificate of Payment, AIA G703 - Continuation Sheet.
- B. Forms filled out by hand will not be accepted.
- C. Submit Schedule of Values in duplicate within 10 days after date of Owner-Contractor Agreement.
- D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization.
- E. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- F. Revise schedule to list approved Change Orders, with each Application For Payment.

**1.03 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Form to be used: AIA G702 - Application and Certificate of Payment, AIA G703 - Continuation Sheet.
- C. Forms filled out by hand will not be accepted.
- D. For each item, provide a column for listing each of the following:
  - 1. Item Number.
  - 2. Description of work.
  - 3. Scheduled Values.
  - 4. Previous Applications.
  - 5. Work in Place and Stored Materials under this Application.
  - 6. Authorized Change Orders.
  - 7. Total Completed and Stored to Date of Application.
  - 8. Percentage of Completion.
  - 9. Balance to Finish.
  - 10. Retainage.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. Submit three copies of each Application for Payment.
- H. Include the following with the application:
  - 1. Construction progress schedule, revised and current as specified in Section 01 3000.
- I. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

**1.04 MODIFICATION PROCEDURES**

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.

- B. For other required changes, Architect will issue an AIA Document G701 change order document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
  - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  - 2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue an AIA Document G709 work change proposal request that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 10 days.
- D. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.
  - 1. Change Orders must be Approved by Architect, Contractor and IDOT prior to work beginning. If Contractor performs work before Change Order is approved by all parties, the Contractor will not receive remuneration or will return Project to original condition at behest of Architect and at no cost to Owner.
- E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
  - 1. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
  - 2. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.
- F. Substantiation of Costs: Provide full information required for evaluation.
  - 1. On request, provide following data:
    - a. Overhead and profit.
      - 1) Will not exceed 15 percent total between General Contractor and Sub Contractor.
  - 2. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- G. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- H. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Price.
- I. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

#### **1.05 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:

**END OF SECTION**

**SECTION 01 3000**  
**ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Stages of the Work, Work covered by each contract, occupancy,..
- B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents.

**1.02 PROJECT COORDINATION**

- A. Project Coordinator: Project Manager.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for vehicular access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
  - 1. Requests for interpretation.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.
  - 6. Manufacturer's instructions and field reports.
  - 7. Applications for payment and change order requests.
  - 8. Progress schedules.
  - 9. Coordination drawings.
  - 10. Closeout submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRECONSTRUCTION MEETING**

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Contractor.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties to Contract, Owner and Architect.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.

- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.02 PROGRESS MEETINGS**

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- C. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of Work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems that impede, or will impede, planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Maintenance of progress schedule.
  - 7. Corrective measures to regain projected schedules.
  - 8. Planned progress during succeeding work period.
  - 9. Maintenance of quality and work standards.
  - 10. Effect of proposed changes on progress schedule and coordination.
  - 11. Other business relating to Work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.03 CONSTRUCTION PROGRESS SCHEDULE**

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Submit updated schedule with each Application for Payment.

### **3.04 SPECIAL PROCEDURES**

- A. A.: As specified in product sections; match existing with new products for patching and extending work.
- B. Employ skilled and experienced installer to perform alternation work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, include rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to permit installation of new work and finishes.
- G. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- H. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect/Engineer for review.
- I. Where change of plane of 1/4 inch or more occurs, submit recommendation for providing smooth transition, to Architect/Engineer for review.
- J. Finish surfaces as specified in individual product sections.

### **3.05 COORDINATION DRAWINGS**

- A. Provide information required by Project Coordinator for preparation of coordination drawings.
- B. Review drawings prior to submission to Architect.

### **3.06 SUBMITTALS FOR REVIEW**

- A. When the following are specified in individual sections, submit them for review:
  - 1. Product data.
  - 2. Shop drawings.
  - 3. Samples for selection.
  - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - CLOSEOUT SUBMITTALS.

### **3.07 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  - 1. Design data.
  - 2. Certificates.
  - 3. Test reports.
  - 4. Inspection reports.
  - 5. Manufacturer's instructions.
  - 6. Manufacturer's field reports.
  - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

### **3.08 NUMBER OF COPIES OF SUBMITTALS**

- A. Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Documents for Information: Submit one copy.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
  - 1. After review, produce duplicates.
  - 2. Retained samples will not be returned to Contractor unless specifically so stated.

### **3.09 SUBMITTAL PROCEDURES**

- A. Transmittal Form: AIA G810.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- D. Deliver submittals to Architect in electronic format only. Only physical samples to be submitted to the Architect at business address.
- E. Schedule submittals to expedite the Project, and coordinate submission of related items.
- F. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- G. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- H. Provide space for Contractor and Architect review stamps.
- I. When revised for resubmission, identify all changes made since previous submission.

- J. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- K. Submittals not requested will not be recognized or processed.

**END OF SECTION**

**SECTION 01 4000  
QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.
- B. Section 01 6000 - Product Requirements: Requirements for material and product quality.

**1.02 SUBMITTALS**

- A. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
  - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- B. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- C. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
  - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

**1.03 REFERENCES AND STANDARDS**

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

**1.04 TESTING AND INSPECTION AGENCIES**

- A. Contractor Employed Agency:
  - 1. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

**PART 3 EXECUTION**

**2.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

**2.02 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

**2.03 TESTING AND INSPECTION**

- A. See individual specification sections for testing and inspection required.
- B. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.
- C. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

**2.04 MANUFACTURERS' FIELD SERVICES**

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

**2.05 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

**END OF SECTION**

**SECTION 01 6000  
PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Equipment electrical characteristics and components.
- G. Maintenance materials, including extra materials, spare parts, tools, and software.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary - : Lists of products to be removed from existing building.
- B. Section 01 4000 - Quality Requirements: Product quality monitoring.
- C. Section 01 7419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting packaging and substitutions.

**1.03 REFERENCE STANDARDS**

- A. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.04 SUBMITTALS**

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

**PART 2 PRODUCTS**

**2.01 EXISTING PRODUCTS**

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

**2.02 NEW PRODUCTS**

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. DO NOT USE products having any of the following characteristics:
  - 1. Made using or containing CFC's or HCFC's.
  - 2. Containing lead, cadmium, asbestos.
- C. Where all other criteria are met, Contractor shall give preference to products that:
  - 1. Are extracted, harvested, and/or manufactured closer to the location of the project.

2. Have longer documented life span under normal use.
3. Result in less construction waste.
4. Are made of vegetable materials that are rapidly renewable.

### **2.03 PRODUCT OPTIONS**

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

### **2.04 MAINTENANCE MATERIALS**

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

## **PART 3 EXECUTION**

### **3.01 SUBSTITUTION PROCEDURES**

- A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- C. A request for substitution constitutes a representation that the submitter:
  1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  2. Will provide the same warranty for the substitution as for the specified product.
  3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
  4. Waives claims for additional costs or time extension that may subsequently become apparent.
  5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- D. Substitution Submittal Procedure:
  1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
  2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
  3. The Architect will notify Contractor in writing of decision to accept or reject request.

### **3.02 TRANSPORTATION AND HANDLING**

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **3.03 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS**

- A. Wiring Terminators: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Include lugs for terminal box.
- B. Cord and Plug: Furnish minimum 6 foot cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

### **3.04 STORAGE AND PROTECTION**

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

**END OF SECTION**



**SECTION 01 7000  
EXECUTION AND CLOSEOUT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures.
- C. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 7419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.
- E. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.
- F. Section 02 4100 - Demolition: Demolition of whole structures and parts thereof; site utility demolition.

**1.02 REFERENCE STANDARDS**

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of Owner or separate Contractor.

**1.04 PROJECT CONDITIONS**

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

**1.05 COORDINATION**

- A. See Section 01 1000 for occupancy-related requirements.
- B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Notify affected utility companies and comply with their requirements.
- D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate sections.

- H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## **PART 2 PRODUCTS**

### **2.01 PATCHING MATERIALS**

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### **3.03 LAYING OUT THE WORK**

- A. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
  - 1. Grid or axis for structures.
  - 2. Building foundation, column locations, ground floor elevations.
- B. Periodically verify layouts by same means.

### **3.04 GENERAL INSTALLATION REQUIREMENTS**

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### **3.05 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
  - 1. Complete the work.
  - 2. Fit products together to integrate with other work.
  - 3. Provide openings for penetration of mechanical, electrical, and other services.
  - 4. Match work that has been cut to adjacent work.
  - 5. Repair areas adjacent to cuts to required condition.
  - 6. Repair new work damaged by subsequent work.
  - 7. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- I. Patching:
  - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
  - 2. Match color, texture, and appearance.
  - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### **3.06 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

### **3.07 PROTECTION OF INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

### **3.08 SYSTEM STARTUP**

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

### **3.09 DEMONSTRATION AND INSTRUCTION**

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.
- E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

### **3.10 ADJUSTING**

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

### **3.11 FINAL CLEANING**

- A. Execute final cleaning prior to final project assessment.
- B. Use cleaning materials that are nonhazardous.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

### **3.12 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to Architect and Owner.

- B. Notify Architect when work is considered ready for Substantial Completion.
- C. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
- D. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.
- E. Notify Architect when work is considered finally complete.
- F. Complete items of work determined by Architect's final inspection.

**3.13 MAINTENANCE**

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

**END OF SECTION**



**SECTION 01 7419**

**CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

**PART 1 GENERAL**

**1.01 WASTE MANAGEMENT REQUIREMENTS**

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.
- E. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.
- F. Methods of trash/waste disposal that are not acceptable are:
  - 1. Burning on the project site.
  - 2. Burying on the project site.
  - 3. Dumping or burying on other property, public or private.
  - 4. Other illegal dumping or burying.
- G. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: List of items to be salvaged from the existing building for relocation in project or for Owner.
- B. Section 01 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- D. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- E. Section 01 7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

**1.03 DEFINITIONS**

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

#### 1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Waste Management Plan: Include the following information:
  - 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
  - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
  - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
  - 4. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
  - 5. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.
- C. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
  - 1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
  - 2. Submit Report on a form acceptable to Owner.
  - 3. Landfill Disposal: Include the following information:
    - a. Identification of material.
    - b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project disposed of in landfills.
    - c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
    - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  - 4. Incinerator Disposal: Include the following information:
    - a. Identification of material.

- b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project delivered to incinerators.
  - c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
  - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
5. Recycled and Salvaged Materials: Include the following information for each:
- a. Identification of material, including those retrieved by installer for use on other projects.
  - b. Amount, in tons or cubic yards (cubic meters), date removed from the project site, and receiving party.
  - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
  - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
6. Material Reused on Project: Include the following information for each:
- a. Identification of material and how it was used in the project.
  - b. Amount, in tons or cubic yards (cubic meters).
  - c. Include weight tickets as evidence of quantity.
7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

### **PART 3 EXECUTION**

#### **2.01 WASTE MANAGEMENT PROCEDURES**

- A. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.
- C. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.
- D. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

#### **2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION**

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
  1. Pre-bid meeting.
  2. Pre-construction meeting.
  3. Regular job-site meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
  1. Provide containers as required.
  2. Provide adequate space for pick-up and delivery and convenience to subcontractors.

3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

**END OF SECTION**

**SECTION 01 7800  
CLOSEOUT SUBMITTALS**

**PART 1 GENERAL**

**1.01 1.01 SECTION INCLUDES**

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
  - 2. Submit copies of final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PROJECT RECORD DOCUMENTS**

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed shop drawings, product data, and samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Field changes of dimension and detail.
  - 2. Details not on original Contract drawings.

### **3.02 OPERATION AND MAINTENANCE DATA**

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

### **3.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS**

- A. For Each Item of Equipment and Each System:
  - 1. Description of unit or system, and component parts.
  - 2. Identify function, normal operating characteristics, and limiting conditions.
  - 3. Include performance curves, with engineering data and tests.
  - 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Additional Requirements: As specified in individual product specification sections.

### **3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS**

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
  - 1. Project Directory.
  - 2. Table of Contents, of all volumes, and of this volume.
  - 3. Operation and Maintenance Data: Arranged by system, then by product category.
    - a. Source data.
    - b. Product data, shop drawings, and other submittals.
    - c. Operation and maintenance data.
    - d. Field quality control data.

### **3.05 WARRANTIES AND BONDS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.
- F. Manual: Bind in commercial quality 8-1/2 by 11 inch (216 by 279 mm) three D side ring binders with durable plastic covers.
- G. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- H. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- I. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

**END OF SECTION**



**SECTION 02 4100  
DEMOLITION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Selective demolition of built site elements.
- B. Abandonment and removal of existing utilities and utility structures.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.
- C. Section 01 7419 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

**1.03 REFERENCE STANDARDS**

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2009.

**1.04 RELATED SECTIONS**

- A. Section 01 7419 - Construction Waste Management and Disposal

**PART 2 PRODUCTS -- NOT USED**

**PART 3 EXECUTION**

**3.01 SCOPE**

- A. Remove existing radiant heat system as noted on the drawings.
- B. Remove other items indicated, for salvage, relocation, and recycling.

**3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS**

- A. Comply with other requirements specified in Section 01 7000.
- B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
  - 1. Comply with applicable requirements of NFPA 241.
  - 2. Use of explosives is not permitted.
  - 3. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
  - 4. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
- C. Do not begin removal until receipt of notification to proceed from Owner.
- D. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- E. Perform demolition in a manner that maximizes salvage and recycling of materials.
  - 1. Comply with requirements of Section 01 7419 - Waste Management.

**3.03 EXISTING UTILITIES**

- A. Protect existing utilities to remain from damage.
- B. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

**3.04 DEBRIS AND WASTE REMOVAL**

- A. Remove debris, junk, and trash from site.
- B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 7419 - Waste Management.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.

**END OF SECTION**

**SECTION 09 9000  
PAINTING AND COATING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints, stains, varnishes, and other coatings.

**1.02 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of all products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
  - 2. MPI product number (e.g. MPI #47).
  - 3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
  - 4. Manufacturer's installation instructions.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.

**1.03 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

**1.04 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
  - 1. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
- C. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 PAINTS AND COATINGS - GENERAL**

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
  - 1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
  - 2. Supply each coating material in quantity required to complete entire project's work from a single production run.

3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Colors: As indicated on drawings

### **2.03 PAINT SYSTEMS - INTERIOR**

- A. Paint MI-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
  1. One coat of alkyd primer.
  2. Gloss: Two coats of alkyd enamel; color as noted on the drawings.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

### **3.02 APPLICATION**

- A. Apply products in accordance with manufacturer's instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance.

**END OF SECTION**

**SECTION 23 5533  
FUEL-FIRED UNIT HEATERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. High-intensity infrared heaters.
- B. Room thermostats.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 2717 - Equipment Wiring: Electrical characteristics and wiring connections.

**1.03 REFERENCE STANDARDS**

- A. NFPA 54 - National Fuel Gas Code; National Fire Protection Association; 2012.
- B. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association; 2012.
- C. NFPA 211 - Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances; National Fire Protection Association; 2013.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's literature and data indicating rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.
- C. Shop Drawings: Indicate assembly, required clearances, and locations and sizes of field connections.
- D. Manufacturer's Instructions: Indicate rigging, assembly, and installation instructions.
- E. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts listing.
- F. Warranty: Submit manufacturer's warranty and ensure forms have been filled out in Owner's name and registered with manufacturer.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Project Requirements, for additional provisions.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

**1.06 REGULATORY REQUIREMENTS**

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer's warranty for heat exchangers.

**PART 2 PRODUCTS**

**2.01 HIGH INTENSITY INFRARED HEATERS**

- A. Manufacturers:
  - 1. Roberts Gordon, LLC: [www.rg-inc.com](http://www.rg-inc.com) - Model: Co-Ray-Vac.
- B. Infrared Heaters: High-intensity type; self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, heat exchanger, burner, reflector, controls.
- C. Cabinet: Galvanized steel with baked enamel finish.

- D. Ceramic Emitter: Assembly of high temperature ceramic tiles with stainless steel housing and reflector.
- E. Gas Burner:
  - 1. Forced draft type with adjustable combustion air supply,
  - 2. Gas valve provides 100 percent safety gas shut-off; 24 volt combining pressure regulation, safety pilot, manual set (On-Off), pilot filtration, automatic electric valve.
  - 3. Burners shall be designed for firing in tandem without adverse effects from combustion gasses from upstream burners.
  - 4. The design of the burners supplied shall provide for maintaining a constant proportion of fuel gas to filtered combustion air. These conditions are met for burners in which the pressure of both the fuel gas and the combustion air are both introduced at zero (atmospheric) pressure and the flow of each is established by a vacuum on the downstream side of the flow metering orifices.
  - 5. Electronic pilot ignition, with electric spark igniter
  - 6. Non-corrosive burner air blower with permanently lubricated motor.
- F. Gas Burner Safety Controls: Thermo-couple sensor prevents opening of solenoid gas valve until pilot flame is proven and stops gas flow on ignition failure.
  - 1. To assure a high degree of fail safe operation, the design shall preclude main flow of gas if any or all of the following abnormal conditions occur in the non-firing mode:
    - a. Main valve fails in open position
    - b. Vacuum pump motor fails to operate
    - c. Power fails
    - d. Flame not established or faulty
  - 2. To further assure a high degree of safety, the system will be under negative pressure at all items during operation to preclude the possibility of the escape of combustion gasses inside the building.
- G. System Controls:
  - 1. All combustion chambers and heat exchanger pipes connected to a vacuum pump shall be **pre-purged** with air for a period of at least 20 seconds (10 air changes minimum) prior to initiation of firing sequence.
  - 2. All combustion chambers and heat exchanger pipes connected to a vacuum pump shall be **post-purged** with air for a period of at least 20 seconds (10 air changes minimum) **after shut-down** of the last burner firing into the vacuum pump.
  - 3. All vacuum pump motors shall be provided with centrifugal switches to prevent energization of gas valves until pump motor operation is proven.
  - 4. All burners shall be provided with a pilot sensing switch to prevent flow of gas to main burner until pilot flame is both proven initially and maintained throughout the firing cycle.
  - 5. Room Thermostat: Low voltage, to control burner operation.
  - 6. Control Panel:
    - a. 120 volt control panel will control burners and vacuum pumps
    - b. Electronic controls matched to characteristics of system
    - c. Connected to 24v room thermostats
- H. Equipment:
  - 1. Burner:
    - a. Each burner assembly shall consist of heavy-duty cast iron burner heads, pre-wired gas controls with electronic ignition and combustion air filters.
  - 2. Vacuum Pump:
    - a. The housing shall be heavy-duty cast iron. The impeller shall be cast aluminum alloy dynamically balanced and mounted for direct drive on the motor shaft.
    - b. The vacuum pump shall be acoustically isolated from the system with flexible connector with temperature rating of 350 degrees F, minimum. The motor in the vacuum pump shall be secured with rubber mounts for acoustical isolation.

- c. Vacuum pump motor shall be 230/115V, 60Hz, 3450 RPM, reversible rotation, with at least 1/2 HP, capacitor start, ball bearings, and thermally protected.
3. Heat Exchanger:
  - a. Radiant pipe (between burners and 20 feet downstream of last burner) shall be of 4" O.D. steel pipe (ie: tubing).
  - b. The ballance of pipe shall be 4: O.D. steel tubing with an internal coating of acid-resistant porcelain.
  - c. All heat exchanger (pipe) connections shall be made with stainless steel coupling assemblies. These will be of two types as follows:
    - 1) Unlined couplings for use with uncoated tubing or joints to connect uncoated tubing to coated tubing.
    - 2) Lined couplings for use with coated tubing.
  - d. The maximum input firing rate shall not exceed 2,400 BTU per hour per square foot of exterior radiating surface of heat exchanger for the heating system in total. The total heat exchanger surface is that associated with one vacuum pump.
4. Burner Control Modules:
  - a. All burners shall be pre-wired with a three-conductor electrical cord and plug with the 3rd wire for ground circuit.
5. Panel Box for System Controls:
  - a. Pre-wired system control circuits shall be supplied in a panel box with each vacuum pump. The panel box for the standard burners shall provide relays and terminals to accommodate up to four temperature zones with a thermostat and associated control circuits for the burners for each temperature zone. The panel box for the dual fuel burner system shall provide relays and terminals to accomodate up to two temperature zones with a thermostat and associated control circuits for the burners for each temperature zone.
6. Outside Air:
  - a. When specified, the system shall be capable of supplying air from the outside to each burner.
  - b. Outside (combustion air) may be supplied to each burner with PVC and fittings.
  - c. Provide fiberglass insulated jacket with vinyl cover over intake air piping where shown on the drawings.
- I. Accessories:
  1. Steel supports and hanger chain
  2. Intake air wall caps with bird screens
  3. Sealants:
    - a. Acrylic joint sealant around outside air intake pipes.
    - b. Seal around exhaust pipes as per manufacturer's instructions.
- J. Performance:
  1. Motor: Refer to Schedule.
  2. Heating Capacity:
    - a. See plans for BTU input.
    - b. Gas heating capacities are sea level ratings.

## **2.02 ROOM THERMOSTATS**

- A. Manufacturers:
  1. Honeywell; model - to match existing: [www.honeywell.com](http://www.honeywell.com).

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that space is ready for installation of units and openings are as indicated on shop drawings.

- B. Verify that proper power supply is available.
- C. Verify that proper fuel supply is available for connection.

**3.02 INSTALLATION**

- A. Install in accordance with NFPA 90A.
- B. Install gas fired units in accordance with NFPA 54 and applicable codes.
- C. Provide rigid gas piping extensions and flexible connections as required for a complete system. Install as per NFPA and applicable codes.
- D. Provide vent connections in accordance with NFPA 211.
- E. Provide connection to electrical power systems; refer to Section 26 2717.

**3.03 SCHEDULES**

- A. See drawings for schedule.
- B. Fuel Fired Unit Heaters and Vacuum Pumps
  - 1. Manufacturer: Roberts-Gordon
  - 2. Model: Co-Ray-Vac

**END OF SECTION**

**SECTION 26 2717  
EQUIPMENT WIRING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical connections to equipment.

**1.02 REFERENCE STANDARDS**

- A. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2010).
- B. NEMA WD 6 - Wiring Devices - Dimensional Requirements; National Electrical Manufacturers Association; 2002 (R2008).
- C. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
  - 2. Determine connection locations and requirements.
- B. Sequencing:
  - 1. Install rough-in of electrical connections before installation of equipment is required.
  - 2. Make electrical connections before required start-up of equipment.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
  - 1. Colors: Conform to NEMA WD 1.
  - 2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
  - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
- B. Provide rigid conduit, boxes, wire, wiring devices as necessary to provide a complete system to match existing.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

**3.02 ELECTRICAL CONNECTIONS**

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.

- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

**END OF SECTION**