



**Request for Bid**  
**For**  
Fairfield Maintenance Facility new exterior wall and insulation  
Issued by:

IOWA DEPARTMENT OF TRANSPORTATION  
Purchasing Section  
Proposal No.14400

**Letting Date: June 17, 2015**

Must be submitted no later than 1:00 PM Central Time  
Bid Responses received after this date will be rejected

***For information about this notice, and during this procurement,  
interested persons shall contact only:***

**Rhonda Ruark**  
800 Lincoln Way  
Ames, Iowa 50010  
Phone: 515-239- 1285  
Fax: 515-239-1538  
E-Mail: rhonda.ruark@dot.iowa.gov

**Issued addenda and all other correspondence  
will be posted to Iowa DOT's website:  
<http://www.iowadot.gov/purchasing>**

		Date Bids Due: June 17, 2015	Time of Bid Opening: 1:00 P.M.	Bid Opening Location: 800 Lincoln Way, Ames, IA	
Proposal Number: <b>14400</b>		Description: <b>Fairfield Maintenance Facility new exterior wall and insulation</b>			
Contract to Begin: Jul <sup>^</sup> F, 2015		Date of Completion: October 11, 2015	Proposal Guaranty Amount: \$20,000.00	Performance Bond (Y/N) Y	Liquidated Damages: \$100 per day / \$500.00 per day if after 3 months
Purchasing Agent: Rhonda Ruark		E-mail Address: rhonda.ruark@dot.iowa.gov	Phone: 515-239-1285		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 proposal includes the Bid Response cover page, Schedule of Prices, Standard Terms and Conditions, Supplemental terms (if any), specifications, mailing label and all other information needed to prepare a bid response. Information in the "Bid Response" above must be typed or completed in ink, signed, and returned in a flat style envelope along with any other information required in the bid proposal 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. Bidders may personally deliver, mail, or select a carrier that ensures timely delivery. **Faxed or e-mail bids will not be accepted.**

If required, each bid response 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 intended awarded bidder fails to enter into a formal contract within fifteen (15) days after award is made for any reason on their part, 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 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 \_\_\_\_\_



## Schedule Of Prices

Number	14400
Date Required	06/17/2015 1:00 PM

Title Fairfield Maintenance Facility new exterior wall and insulation  
 Delivery Location  
 Shipping Terms FOB Destination/Freight Prepaid

Vendor  
 PA Name Rhonda J Ruark  
 Phone 515-239-1285  
 E-Mail rhonda.ruark@dot.iowa.gov

Description

Product Availability Days: \_\_\_\_\_

All items must be bid.

Item	Qty	Unit	Description	Part #	Unit Price	Total Price
1	1	LUMP	Add new insulated exterior wall to existing Fairfield maintenance garage which will include two different wall types. Project to include excavation, equipment removal, remodeling, installation and reinstallation of all building and site componets required to complete the new wall installation. Plans and Specifications attached. Delivery Location:			
Comments:						

I HEREBY CERTIFY THAT THIS PROPOSAL MEETS OR EXCEEDS THE MINIMUM REQUIREMENT INCLUDING SPECIFICATIONS AND ADDENDUMS.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



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

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

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

(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. Bid responses 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 Guarantee:** If required, the bid response page will indicate the amount required to be included in the bid response. A Proposal Guarantee 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 guarantee requirement. A properly completed and signed copy of the Proposal Guarantee (*Form 131084*) must accompany the bid. **The Iowa DOT's Proposal Guarantee form must be used; no other forms or formats will be accepted.**
4. **Pricing and Discount:** Unit prices shown on the bid/response 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:** Bid tabulations will be posted on the DOT website at [www.iowadot.gov/purchasing](http://www.iowadot.gov/purchasing) under the *Bid Award* link referencing the proposal number 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 delivery 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. A service contract, including all optional renewals, shall not exceed a term of six years unless a state agency obtains a waiver of this provision pursuant to rule 11-11B.16 (8A).
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.
6. **Default:** Failure of a Contractor other than a Supplier to meet any specified project completion deadline shall render the Contractor liable for all costs incurred by DOT that were: a) necessary to meet said deadline; or b) necessary to complete said project after said deadline. 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 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.

## Procurement Timetable

The following dates are set forth for informational and planning purposes. The Iowa DOT reserves the right to revise the dates as needed. All times listed are Central Time.

Event/Dates	Section Reference	Date/Time
Issue RFB	cover	
Number of Copies of Bid Responses Required		1
<input type="checkbox"/> Bidders Conference (Pre-Bid) <i>Box will be checked when attendance is mandatory</i> Fairfield Maintenance Breakroom 207 E. 227th St., Fairfield, IA	2.28	6/2/2015/ 10:00a.m.
DOT Response from Bidder's Conference Questions	2.28	6/8/2015
Bidder Questions, Requests for Clarification, & Changes <i>(no later than)</i>	2.2/2.5	6/10/2015
DOT Response to Questions Issued <i>(no later than)</i>	2.2/2.5	
Bid Opening/Proposal Due	2.8	6/17/2015
Presentations & Demonstrations "Short list" <i>(by invitation only)</i>	N/A	
Announce Successful Bidder Intent to Award* <i>see note below</i>	2.22	
Completion of Contract Negotiations & Execution of the Contract	2.11	
Contract Begin Date	4.2	7/1/2015
Contract End Date	4.2	10/11/2015

\*Intent to Award - See Section 2.22

It is intended that Bid Responses will be evaluated and a notice of "intent to award" will be issued within thirty (30) days of the bid opening date. Bid Responses prices, terms and conditions must be held firm for a 180-day period from the date of the notice of "intent to award" the contract.

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## Section 1 Introduction

### 1.1 Purpose & Overview of the RFB Process

The purpose of this Request for Bid (RFB) is to solicit Bid Responses from responsible, responsive Bidders to provide the goods and/or services identified on the RFB cover page and described further in Section 3 of this RFB. The Iowa DOT intends to award a contract(s) beginning and ending on the dates listed on the Procurement Timetable. The Iowa DOT may renew the contract(s) for up to the number of annual extensions identified on the Procurement Timetable at the sole discretion of the Iowa DOT. Any contract(s) resulting from the RFB shall not be an exclusive contract.

Bidders will be required to submit Bid Responses according to the Procurement Timetable. The Iowa DOT will evaluate all responsible Bidders that submit timely responsive Bid Responses to be considered for award.

### 1.2 Definitions

The terms used in individual sections of this document are intended to be consistent with those commonly used in the application field in question. When responding, use the terms and acronyms used in this document, and define any terms or conditions that require further clarification.

**1.2.1 “Bid Response”** means the bid document submitted by the bidder in response to the RFB.

**1.2.2 “Contract” or “Resulting Contract”** means the contract(s) entered into with the successful Bidder(s) as described in section 4.

**1.2.3 “Bidder”** means individual, company or entity submitting a response in response to the RFB.

**1.2.4 “Iowa DOT”** means the Iowa Department of Transportation.

**1.2.5 “Participating Agency” or “Participating Agencies”** means the agency or agencies identified on the RFB cover sheet as Participating Agencies and any other agency that decides to utilize the executed contract.

**1.2.6 “Procurement Timetable”** (*on the page immediately following the RFB cover*) provide timeline, event and date information.

**1.2.7 “Purchase Order”** means the documentation issued by the State to the Contractor for a purchase of goods and/or services in accordance with the terms and conditions of the Contract. It may include an identification of the items to be purchased, the delivery date and location, the address where the supplier should submit the invoices, and any other requirements deemed necessary by the State. Any preprinted contract terms and conditions included on Bidder’s forms or invoices shall be null and void.

**1.2.8 “Responsible Bidder”** means a bidder that has the capability in all respects to perform the requirements of the Bid Proposal specifications. In determining whether a Bidder is a responsible, responsive Bidder, the Iowa DOT may consider various factors including, but not limited to, the Bidder’s competence and qualifications to provide the goods or services requested, the Bidder’s integrity and reliability, the past performance of the Bidder relative to the quality of the goods or services offered by the Bidder, the proposed terms of delivery, and the best interest of the Iowa DOT and Participating Agencies.

**1.2.9 “RFB”** means Request for Bid and any attachments, exhibits, schedules or addenda hereto. A written response by a Bidder shall be considered a bid and referred to as a Bid Response.

**1.2.10 “State”** means the Iowa DOT, State of Iowa, and Participating Agencies identified on the title page and all state agencies, boards, and commissions, and any political subdivisions making purchases off of the resulting Contract as permitted by this RFB.

### **1.3 General**

#### **1.3.1 Owner:**

The Owner of these projects is the Iowa Department of Transportation, 800 Lincoln Way, Ames, Iowa 50010.

#### **Project Location:**

Iowa Department of Transportation Ames, Warehouse Dock 800 Lincoln Way, Ames IA 50010

### **1.4 Bidding Documents**

#### **1.4.1 Addenda**

- Addenda, if issued, will be posted to the Iowa DOT’s website. All addendums must be acknowledged by bidders and included in the Bid Response.
- All addenda so issued shall become part of the contract documents.

#### **1.4.2 Withdrawal Period**

Prime Contractors, subcontractors and material suppliers on these projects agree to guarantee their proposal costs and work to be performed for a period of thirty (30) days after the date of receipt of bids.

## Section 2 Administrative Information

### 2.1 Issuing Agent

The Issuing Agent, identified on the cover page is the sole point of contact regarding the RFB from the date of issuance until the notice of intent to award is issued (selection of the successful contractor).

### 2.2 Restriction on Communication

From the issue date of this RFB until the notice of intent to award is issued (announcement of the successful bidder), bidders may contact only the Issuing Agent.

The Issuing Agent will respond only to questions regarding the procurement process. Questions related to the interpretation of this RFB must be submitted in writing to the Issuing Officer by the deadline found in the Procurement Timetable listed immediately after the cover sheet. Verbal questions related to the interpretation of this RFB will not be accepted. Questions related to the interpretation of this RFB must be submitted as provided in section 2.5. Contractors may be disqualified if they contact any state employee other than the Issuing Agent. *Exception: Contractors may contact the State Targeted Small Business Office on issues related to the preference for Targeted Small Businesses. See Section 2.32.*

In NO CASE shall verbal communication override written communications. 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 RFB. Verbal discussions pertaining to modifications or clarifications of this RFB shall not be considered part of the RFB unless confirmed in writing. All such requests for clarification shall be submitted in writing. Any information provided by the Contractor verbally shall not be considered part of that Contractor's proposal. Only written communications from the Contractor and received by the Department shall be accepted.

With the exception of the written Bid Response which must be submitted by Contractors in accordance with Section 2 herein, communications between the Issuing Agent and Contractors may be conducted by regular prepaid US mail, courier service, e-mail or facsimile transmission.

### 2.3 Downloading the RFB from the Internet

All correspondence for this Bid Proposal will be posted on the Iowa DOT's website at [www.iowadot.gov/purchasing/lettingschedule](http://www.iowadot.gov/purchasing/lettingschedule). **Bidders are required** to visit the Iowa DOT's home page periodically for any and all addendums or other pertinent information regarding this bid opportunity.

### 2.4 Procurement Timetable

The dates listed in the Procurement Timetable (on the page immediately following the RFB cover) are set forth for informational and planning purposes; however, the Iowa DOT reserves the right to change the dates. If a change is made to any of the deadlines for Contractor submission, the Iowa DOT will issue an addendum to the RFB. All times listed are Central Times.

## 2.5 Questions, Requests for Clarification, and Suggested Changes

Contractors are invited to submit written questions and requests for clarifications regarding the RFB during the time indicated in the Procurement Timetable. Contractors may also submit suggestions for changes to the requirements of this RFB. The questions, requests for clarifications or suggestions must be in writing and received by the Issuing Agent on or before the deadline stated in the Procurement Timetable. Oral questions will not be permitted. If the questions, requests for clarifications, or suggestions pertain to a specific section of the RFB must be referenced.

Written responses to questions, requests for clarifications or suggestions will be posted on or before the deadline stated in the Procurement Timetable and posted on the Iowa DOT's website (see Section 2.3) If the Iowa DOT decides to adopt a suggestion, the Iowa DOT will issue an addendum to the RFB.

The Iowa DOT assumes no responsibility for verbal representations made by its officers or employees unless such representations are confirmed in writing and incorporated into the RFB.

Each bidder must inform themselves fully of the conditions relating to the proposal. Failure to do so will not relieve a successful bidder of their obligation to furnish all services required to carry out the provisions of his 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.

If a bidder discovers any significant ambiguity, error, conflict, discrepancy, omission, or other deficiency in this RFB, the bidder should immediately notify the Issuing Agent in writing of such error and request modification or clarification of the RFB document.

## 2.6 Revisions to Contractor Bid Response

Contractors who submit Bid Proposals in advance of the bid opening date may withdraw, modify, and resubmit Bid Proposals at any time until the bid opening date and time. Contractors must notify the Issuing Agent in writing if they wish to withdraw their Bid Response. A Contractor shall not withdraw its Bid Response or its prices prior to the end of the one hundred and eighty (180) day period immediately following the notice of intent to award a contract.

## 2.7 Submission of Bid Responses

The Iowa DOT must receive Bid Responses addressed to the Department of Transportation, Purchasing Section, 800 Lincoln Way, Ames, Iowa 50010 before the deadline stated in the Procurement Timetable. **This is a mandatory requirement and will not be waived by the Iowa DOT.** Any Bid Response received after this deadline will be rejected and returned unopened to the contractor.

Contractors mailing Bid Responses must allow ample mail delivery time to ensure receipt by the Iowa DOT on or before the due date. Postmarking by the due date will not substitute for actual receipt of the Bid Response.

**Electronic mail and faxed Bid Responses will not be accepted.**

Contractors must furnish all information necessary to evaluate the Bid Response. Bid Responses that fail to meet the mandatory requirements of the RFB will be disqualified. Verbal information provided by the Contractor shall not be considered part of the Contractor's Bid Response.

## **2.8 Bid Response Opening**

The Iowa DOT will open Bid Responses on the date and time stated in the Procurement Timetable. Bid Responses will remain confidential until a bid tabulation has been posted on the Iowa DOT's website for all bidders to view the results in the form of "Intent to Award" See Iowa Code Section 72.3.

The names of the Contractors who submit compliant Bid Responses within the time frame permitted will be available for public review after the contract has been awarded.

## **2.9 Costs of Preparing the Bid Response**

The costs of preparation and delivery of a Bid Response are solely the responsibility of the Contractor.

No payments shall be made by the State to cover costs incurred by any Contractor in the preparation of or the submission of this RFB or any other associated costs.

## **2.10 Reasonable Accommodations**

Upon request, the Iowa DOT will provide reasonable accommodations, including the provision of informational material in an alternative format, for individuals with disabilities. If accommodations are required at time of a bid opening, contact the Issuing Agent designated on the cover page.

## **2.11 Rejection of Bid Responses**

The Iowa DOT reserves the right to reject any or all Bid Responses, in whole or in part, received in response to this RFB at any time prior to the execution of a written contract. Issuance of this RFB in no way constitutes a commitment by the Iowa DOT to award a contract. This RFB is designed to provide Contractors with the information necessary to prepare a competitive Bid Response. This RFB process is for the Iowa DOT benefit and is intended to provide the Iowa DOT with competitive information to assist in the selection of a Contractor to provide services.

It is not intended to be comprehensive and each Contractor is responsible for determining all factors necessary for submission of a comprehensive Bid Response.

The Iowa DOT reserves the right to negotiate the terms of the contract, including the award amount, with the awarded Contractor prior to entering into a contract. If contract negotiations cannot be concluded successfully, the Iowa DOT reserves the right to negotiate a contract with the next lowest Bidder.

## **2.12 Disqualification**

The Iowa DOT may reject outright and shall not evaluate proposals for any one of the following reasons:

**2.12.1** The Contractor states that a requirement of the RFB cannot be met.

**2.12.2** The Contractor's Bid Response materially changes a requirement of the RFB or the Bid Response is not compliant with the requirements of the RFB.

**2.12.3** The Contractor's response limits the rights of the Iowa DOT.

**2.12.4** The Contractor fails to include a *proposal guarantee*, also known as bid bond or bid security, *if required*. See Bid Response cover page and **Section 2.33**.

**2.12.5** The Contractor fails to include any signature, certification, authorization, stipulation, disclosure or guarantee (if required).

**2.12.6** The Contractor presents the information requested by this RFB in a format inconsistent with the instructions of the RFB or otherwise fails to comply with the requirements of this RFB.

**2.12.7** The Contractor initiates unauthorized contact regarding the RFB with state employees.

**2.12.8** The Contractor provides misleading or inaccurate responses.

**2.12.9** The Contractor fails to attend the mandatory Contractors Conference or Pre-Bid meeting.

**2.12.10** The Contractor's Bid Response is materially unbalanced.

**2.12.11** There is insufficient evidence (including evidence submitted by the Contractor and evidence obtained by the Iowa DOT from other sources) to satisfy the Iowa DOT that the Contractor is a "Responsible Contractor".

**2.12.12** The Contractor alters the Bid Proposal language in any way.

### **2.13 Nonmaterial and Material Variances**

The Iowa DOT reserves the right to waive or permit cure of nonmaterial variances in the Bidder's Bid Response if, in the judgment of the Iowa DOT, it is in the Iowa DOT best interest to do so. Nonmaterial variances include minor informalities that do not affect responsiveness; that are merely a matter of form or format; that do not change the relative standing or otherwise prejudice other Contractors; that do not change the meaning or scope of the RFB; or that do not reflect a material change in the services. In the event the Iowa DOT waives or permits cure of nonmaterial variances, such waiver or cure will not modify the RFB requirements or excuse the Contractor from full compliance with RFB specifications or other contract requirements if the Contractor is awarded the contract. The determination of materiality is in the sole discretion of the Iowa DOT.

### **2.14 Reference Checks**

The Iowa DOT reserves the right to contact any reference to assist in the evaluation of the Bid Response, to verify information contained in the Bid Response and to discuss the Contractor's qualifications and the qualifications of any subcontractor identified in the bidders Bid Response.

### **2.15 Information From Other Sources**

The Iowa DOT reserves the right to obtain and consider information from other sources concerning a Contractor, such as the Contractor's capability and performance under other contracts, the qualifications of any subcontractor identified in the Contractor's Bid Response, specifically, the Contractor's financial stability, past or pending litigation, and publicly available information.

### **2.16 Verification of Bid Response Contents**

The content of a Bid Response submitted by a Contractor is subject to verification. Misleading or inaccurate responses shall result in disqualification and rejection of the Bid Response.

### **2.17 Criminal History and Background Investigation**

The Contractor hereby explicitly authorizes the Iowa DOT to conduct criminal history and/or other background investigation(s) of the Contractor, its officers, directors, shareholders, partners and managerial and supervisory personnel retained by the Contractor for the performance of the contract.

## **2.18 Bid Response Clarification Process**

The Iowa DOT reserves the right to contact a Contractor after the submission of Bid Response for the purpose of clarification to ensure mutual understanding.

This contact may include written questions, interviews, site visits, a review of past performance if the Contractor has provided goods or services to the Iowa DOT or any other political subdivision wherever located, or requests for corrective pages in the Contractor's Bid Response. The Iowa DOT will not consider information received if the information materially alters the content of this Bid Proposal or alters the type of goods and services the Contractor is offering to the Iowa DOT. An individual authorized to legally bind the Contractor shall sign responses to any request for clarification. Responses shall be submitted to the Iowa DOT within the time specified in the Iowa DOT request. Failure to comply with requests for additional information may result in rejection of the Bid Response as non-compliant.

## **2.19 Disposition of Bid Responses**

At the conclusion of the selection process, the contents of all Bid Responses will be in the public domain and be open to inspection by interested parties except for information for which Contractor properly requests confidential treatment or is subject to exceptions provided in Iowa Code Chapter 22 or other applicable law.

## **2.20 Public Records and Requests for Confidential Treatment**

The Iowa DOT may treat all information submitted by a Contractor as public information following the conclusion of the Intent to Award. Iowa DOT release of information is governed by Iowa Code chapter 22. Contractors are encouraged to familiarize themselves with chapter 22 before submitting a Bid Response. The Iowa DOT will copy and produce public records as required to comply with the public records laws.

## **2.21 Release of Claims**

By submitting a Bid Response, the Contractor agrees that it will not bring any claim or cause of action against the Iowa DOT based on any misunderstanding concerning the information provided herein or concerning the Iowa DOT failure, negligent or otherwise, to provide the Contractor with pertinent information as intended by this RFB.

## **2.22 Award Notice and Acceptance Period**

Notice of intent to award will be posted on the Iowa DOT's website at [www.iowadot.gov/purchasing/bidaward](http://www.iowadot.gov/purchasing/bidaward). Final negotiation and execution of the contract(s) shall be completed no later than thirty (30) days from the date of the Notice of Intent to Award or such other time as designated by the Iowa DOT.

If the successful Contractor fails to negotiate and deliver an executed contract by that date, the Iowa DOT in its sole discretion may cancel the award and award the contract to the next lowest bidder meeting the specifications.

## **2.23 No Contract Rights until Execution**

The full execution of a written contract shall constitute the making of a contract for services and no Contractor shall acquire any legal or equitable rights relative to the contract services until the contract has been fully executed by the successful Contractor and the Iowa DOT.

## **2.24 Restrictions on Gifts and Activities**

Iowa Code Chapter 68B restricts gifts which may be given or received by state employees and requires certain individuals to disclose information concerning their activities with state government. Contractors are responsible to determine the applicability of this Chapter to their activities and to comply with the requirements. In addition, pursuant to Iowa Code section 722.1, it is a felony offense to bribe or attempt to bribe a public official.

*The laws of Iowa provide that it is a felony to offer, promise, or give anything of value or benefit to a state employee with the intent to influence that employee's acts, opinion, judgment or exercise of discretion with respect to that employee's duties. Evidence of violations of this statute will be submitted to the proper prosecuting attorney.*

## **2.25 No Minimum Guaranteed**

The Iowa DOT anticipates that the selected Contractor will provide services as requested by the Iowa DOT. The Iowa DOT will not guarantee any minimum compensation will be paid to the Contractor or any minimum usage of the Contractor's services.

## **2.26 Conflicts Between Terms**

The Iowa DOT reserves the right to accept or reject any exception taken by the Contractor to the terms and conditions contained in this RFB. Should the Contractor take exception to the terms and conditions required by the Iowa DOT, the Contractor's exceptions may be rejected and the entire proposal declared nonresponsive. The Iowa DOT may elect to negotiate with the Contractor regarding contract terms that do not materially alter the substantive requirements of the request for proposals or the contents of the Contractor's Bid Response.

## **2.27 News Releases**

No news releases or other materials pertaining to this procurement, or any part of this proposal, will be made available to the media or the public, the Contractor's clients or potential clients without the prior written approval of the Iowa DOT.

## **2.28 Pre-Bid Conference**

If the Procurement Timetable indicates a Contractor's Pre-Bid Conference will be held in conjunction with this RFB, it will be held at the date, time, and location listed on the Procurement Timetable immediately following the cover page. If Attendance at the Contractor's Pre-Bid Conference is a mandatory requirement to submit a Bid Response, it will be indicated on the Procurement Timetable. The purpose of the Pre-Bid conference is to discuss with prospective Contractors the work to be performed and allow prospective Contractors an opportunity to ask questions regarding the RFB. Verbal discussions at the Pre-Bid conference shall not be considered part of the RFB unless confirmed in writing by the Iowa DOT and incorporated into this RFB. The conference may be recorded. Questions asked at the conference that cannot be adequately answered during the conference may be deferred.

A copy of the questions and answers will be posted on the DOT website for viewing.

## **2.29 Contractors Responsibilities**

### **2.29.1 Codes, Laws and Regulations**

The laws of the State of Iowa in relation to and pertaining to public improvements shall apply to these projects. 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.

### **2.29.2 Licenses, Permits and Inspections**

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

## **2.30 Consideration of Bids**

### **2.30.1 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.

### **2.30.2 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.

## **2.31 Performance and Payment Bonds**

### **2.31.1 Bonds**

If the contracted estimated value 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 Bidder's signature. Resident commission agent or attorney-in-fact must file a copy of the power of attorney.

### **2.31.2 Power of Attorney**

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

## **2.32 Labor Regulations**

All Bidders, 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.

## **2.33 Proposal Guarantee**

Each bid must be supported by a Proposal Guarantee in the sum indicated on the Bid Response cover page (if required). See Standard Terms and Conditions included in the Bid Proposal section A-3.

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 indicated in the Bid Proposal. If a proposal guarantee is submitted, it must be submitted on **Iowa DOT Form No. 131084** or **bid will be rejected**.

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

## Section 3 General Requirements

### 3.1 Scope of Work

Successful Bidder shall be required to provide all materials, labor, and equipment necessary for the construction of

The Project consists of the alteration of a maintenance facility by adding a combination of two wall types to the exterior building surfaces:

Upright masonry block wall with a concrete base and a concrete cap. The wall shall be constructed in accordance with the specifications and drawings. The wall shall be finished with a smooth finish. The wall shall be constructed in accordance with the specifications and drawings. The wall shall be finished with a smooth finish.

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### 3.2 Adoption of General Conditions

**3.2.1** The General Requirements of this Contract shall include the "General Conditions", "Plans and Specifications" and any and all requirements of this RFB, as herein stated.

**3.2.2** "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.

**3.2.3** All bidder information and conditions, bid check lists and similar documents included in the specifications issued by the Iowa DOT, Ames, Iowa are hereby made a part of the General Conditions.

### 3.3 Contractor Response

#### 3.3.1 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 (PPE), fall protection and ventilation.
- Contractor may be required to make available to the Iowa DOT all Material Safety Data Sheets (MSDS) for all products provided at time the apparent low bidder has been determined. MSDS shall be sent to the Issuing Agent (when applicable) prior to issuance of the contract.

### **3.3.2 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 substantial completion date. 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 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.

### **3.3.3 Workmanship**

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

### **3.3.4 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: Submit details of materials, systems and equipment to the Iowa DOT for review. The Contractor shall provide eight copies of each shop drawing for 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.

### **3.3.5 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.

### **3.3.6 Cutting and Patching**

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.

### **3.3.7 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.

### **3.3.8 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 Iowa DOT will provide a list of items requiring inspection prior to or during installation. The Contractor is to give the Iowa DOT notice no less than 24 hours in advance of installation.
- The Iowa DOT contact shall be: Jerry Burns 515-239-1443

### **3.3.9 Contractors Construction Schedule**

The Successful Bidder will, at the pre-construction meeting, submit 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.

### **3.3.10 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 the Iowa DOT project lead any defects in such work and/or discrepancies between executed work plans, drawings or 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.

### **3.4 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 Successful Bidder for the project shall furnish the Iowa DOT with a complete list of subcontractors, schedule of values, and major material suppliers at the pre-construction meeting.
- 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.

### **3.5 Protection of Persons and Property**

#### **3.5.1 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 these projects.

#### **3.5.2 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 these projects.
- 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.

## 3.6 Miscellaneous Provisions

### 3.6.1 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.

### 3.6.2 Discriminatory Practices

- All Contractors or subcontractors working under the terms of these projects 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 or 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.

## 3.7 Contractors Responsibilities

### 3.7.1 Site Visit

- It is recommended, but not required, that prospective bidders on these projects shall visit the job site prior to submitting a quotation. It is also recommended that prospective bidders visit a similar completed project. **To visit the site contact Brenda Wilder at 515-239-1301**
- No considerations or revision in the contract price or scope of the project will be considered by the Iowa DOT for any item which could have been revealed by a thorough on-site inspection and examination.

### 3.7.2 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.

### **3.7.3 Obligation**

- At the time of the bid opening, each bidder will be presumed to have read and become thoroughly familiar with the drawings, specifications, and other contract documents, including all addenda.
- Bidders are responsible for the proper submission of bids. Omissions by a bidder to examine a form, instrument, or document shall in no way relieve that bidder from any obligations in respect to their bid.

## **3.8 Bid Proposal Documents**

### **3.8.1 Plans and Specifications**

- Electronic Plans and specifications are available on the Iowa DOT's website, [www.iowadot.gov/purchasing](http://www.iowadot.gov/purchasing). The Bidder is responsible for all copies of plans and specifications necessary for the execution of the work.
- In the event of a conflict between the specifications and the drawings, the specifications shall take precedence.

### **3.8.2 Materials and Equipment**

- Manufacturers and products, in addition to those specifically listed, may be 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/Bidder'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.
- Contractors 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.

### **3.8.3 Alternates or Exceptions-** alternates or exceptions must be evaluated prior to the letting date listed in this proposal.

## Section 4 Contract Terms & Conditions

### 4.1 Contract Award

Award will be based on the total lump sum amount of bid price shown on the Schedule of Prices. The DOT will award to the lowest, most responsive, responsible bidder. The Iowa DOT reserves the right to accept the bid(s) which best serves the interest of the State.

Bid price will include all requirements listed in Section 3 to complete this proposed project. The Prime Contractor shall be responsible for taking all sub-bids and for all coordination between trades.

A "Prime" contract shall be awarded for each project 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.

### 4.2 Contract Period

See Bid Proposal timeline for dates. The date of completion shall be stated in calendar days on the Bidder's Bid Response, and if necessary, adjusted by mutual agreement between the Iowa DOT and successful bidder prior to executing the contract documents.

The Iowa DOT realizes that deliveries and site conditions 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 the completion date to another mutually-acceptable date, when requested in writing and in good faith by the Contractor.

### 4.3 Liquidated Damages

Time is an essential component of the contract, and it is important that the work be to completed on the or before the dates listed on the Procurement Timetable. For each calendar day that any work shall remain uncompleted beyond the substantial completion date and beyond the final completion date or any extension granted under Extension of Contract Period, the amount per calendar day specified in the Bid Response cover page 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 Iowa DOT 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 Iowa DOT's right to collect any additional damages other than time delays, which the Iowa DOT may sustain by the failure of the Contractor to carry out the terms of the contract.

#### **4.4 Immunity of Iowa Department of Transportation**

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

#### **4.5 Payments and Completion of Contract**

**4.5.1** 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 Contractor as governed by the Iowa DOT Standard Specifications for Highway and Bridges Construction, Series 2012 and General Supplemental Specifications.

**4.5.2** At the Pre-Bid Conference, the contractor shall submit 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.

**4.5.3** Final payment shall be authorized not later than thirty (60) days following the completion and final acceptance of the contract, provided that the provisions 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.

**4.5.4** 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.

## 4.6 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 Iowa DOT shall be included as an insured party, or a separate owner's protective policy shall be filed showing the Iowa DOT 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 following 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 Iowa DOT 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
- Contract Period

#### **4.7 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.

**SECTION 00 0101  
PROJECT TITLE PAGE**



**FAIRFIELD MAINTENANCE FACILITY - NEW EXTERIOR WALL AND INSULATION**

**207 E 227TH ST  
FAIRFIELD, IA 52556**

**PROJECT MANUAL  
BUILDING SPECIFICATIONS FOR FAIRFIELD MAINTENANCE FACILITY - NEW EXTERIOR WALL  
WITH INSULATION  
DATE: APRIL 27, 2015  
PROJECT NUMBER: BG-2F34(002)--80-51**

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- D. 01 3000 - Administrative Requirements
- E. 01 3216 - Construction Progress Schedule
- F. 01 4000 - Quality Requirements
- G. 01 5000 - Temporary Facilities and Controls
- H. 01 6000 - Product Requirements
- I. 01 7000 - Execution and Closeout Requirements
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**END OF LIST OF DRAWINGS**

**SECTION 01 1000**  
**SUMMARY**

**PART 1 GENERAL**

**1.01 PROJECT**

- A. Project Name: Fairfield Maintenance Facility - New Exterior Wall and Insulation.
- B. Owner's Name: Iowa Department of Transportation.
- C. The Project consists of the alteration of a maintenance facility by adding a combination of two wall types to the exterior building surfaces: Type 1: Concrete Masonry Unit wall over polyisocyanurate insulation. Type 2: Cement Board Lap Siding over Structural Insulated Panels.

**1.02 DESCRIPTION OF ALTERATIONS WORK**

- A. Scope of demolition and removal work is shown on drawings and specified in Section 02 4100.
- B. Scope of alterations work is shown on drawings.
- C. Iowa Department of Transportation will remove the following items before start of work:
  - 1. Communications equipment.
- D. Contractor shall remove and store the following prior to start of work, for later reinstallation by Contractor:
  - 1. Awnings.
  - 2. Signs.
  - 3. Downspouts.
  - 4. Exhaust Fan.
  - 5. Light Fixtures
  - 6. HRV Unit

**1.03 WORK BY OWNER**

- A. Iowa Department of Transportation will remove communications equipment and coordinate with Contractor for reinstallation.

**1.04 OWNER OCCUPANCY**

- A. Iowa Department of Transportation intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Cooperate with Iowa Department of Transportation to minimize conflict and to facilitate Iowa Department of Transportation's operations.
- C. Schedule the Work to accommodate Iowa Department of Transportation occupancy.

**1.05 CONTRACTOR USE OF SITE AND PREMISES**

- A. Arrange use of site and premises to allow:
  - 1. Iowa Department of Transportation occupancy.
  - 2. Work by Others.
- B. Provide access to and from site as required by law and by Iowa Department of Transportation:
  - 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 during DOT facility hours, and must have a representative present during any Sub-Contractor work..

**1.06 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 3000 - Administrative Requirements.
- C. Section 01 4000 - Quality Requirements.
- D. Section 01 6000 - Product Requirements.
- E. Section 01 7000 - Execution and Closeout Requirements.

**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.
- B. Documentation of changes in Contract Price and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

**1.02 RELATED REQUIREMENTS**

- A. Section 01600 - Product Requirements.

**1.03 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 15 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, bonds and insurance, and General Requirements as separate line items.
- 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.

**1.04 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.
  - 2. Updated Submittal Log.

3. Progress meeting minutes.
- 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.

#### **1.05 MODIFICATION PROCEDURES**

- A. 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 Price or Contract Time.
  2. Promptly execute the change.
- B. 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 14 days.
- C. 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 Price 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.
- D. 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.
- E. Substantiation of Costs: Provide full information required for evaluation.
  1. Provide following data:
    - a. Quantities of products, labor, and equipment.
    - b. Overhead and profit.
      - 1) Profit and overhead not to exceed 15 percent total, between general contractor and all sub-contractors.
  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.
- F. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- G. 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.
- H. 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.
- I. Promptly enter changes in Project Record Documents.

#### **1.06 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Price, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
  1. All closeout procedures specified in Section 01 7000.
  2. All closeout procedures specified in Section 01 7800.

3. All punch list items have been completed.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

**SECTION 01 2300  
ALTERNATES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Description of alternates.

**1.02 SUBMISSION REQUIREMENTS**

- A. Alternatives quoted on Bid Form will be reviewed and accepted or rejected at the Owner's option, unrelated to order presented in schedule. Accepted alternatives will be identified in the Owner-Contractor Form of Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each alternative.

**1.03 ACCEPTANCE OF ALTERNATES**

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Iowa Department of Transportation's option. Accepted alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

**1.04 SCHEDULE OF ALTERNATES**

- A. Alternate No. 1 - Corrugated Aluminum Panels:
  - 1. Alternative Item: Section 07 4213 Prefinished Corrugated Aluminum Panels to be installed where Fiber Cement Siding is currently shown on sheets A-2, A-4 and A-5 including 09 9000.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preconstruction meeting.
- B. Construction progress schedule.
- C. Coordination drawings.
- D. Submittals for review, information, and project closeout.
- E. Number of copies of submittals.
- F. Submittal procedures.

**1.02 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.

**1.03 PROJECT COORDINATION**

- A. During construction, coordinate use of site and facilities through the Project Coordinator.
- B. 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.
- C. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.
- D. 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. Applications for payment and change order requests.
  - 5. Closeout submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRECONSTRUCTION MEETING**

- A. Iowa Department of Transportation will schedule a meeting after Notice of Award.
- B. Attendance Required:
  - 1. Iowa Department of Transportation.
  - 2. Architect.
  - 3. Contractor.
  - 4. All major Sub-Contractors.
- C. Agenda:
  - 1. Execution of Iowa Department of Transportation-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.
  - 8. Security and housekeeping procedures.

9. Use of premises by Iowa Department of Transportation and Contractor.
  10. Owner's requirements and occupancy of existing structure.
  11. Scheduling activities of Iowa Department of Transportation.
  12. Construction facilities and controls provided by Owner.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Iowa Department of Transportation, participants, and those affected by decisions made.

### **3.02 CONSTRUCTION PROGRESS SCHEDULE**

- A. Within 10 days after date established in Notice to Proceed, 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. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
  1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

### **3.03 COORDINATION DRAWINGS**

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

### **3.04 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.

### **3.05 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 Iowa Department of Transportation. No action will be taken.

### **3.06 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. When the following are specified in individual sections, submit them at project closeout:
  1. Project record documents.
  2. Operation and maintenance data.
  3. Warranties.

4. Bonds.
5. Other types as indicated.

B. Submit for Iowa Department of Transportation's benefit during and after project completion.

### **3.07 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. 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.

### **3.08 SUBMITTAL PROCEDURES**

- A. Transmit each submittal with a copy of approved submittal form.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- D. 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.
- E. Deliver submittals to Iowa Department of Transportation at business address.
- F. Schedule submittals to expedite the Project, and coordinate submission of related items.
- G. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- H. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- I. Provide space for Contractor and Architect review stamps.
- J. When revised for resubmission, identify all changes made since previous submission.
- K. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- L. Submittals not requested will not be recognized or processed.

**END OF SECTION**

**SECTION 01 3216**  
**CONSTRUCTION PROGRESS SCHEDULE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preliminary schedule.
- B. Construction progress schedule, with network analysis diagrams and reports.

**1.02 RELATED SECTIONS**

- A. Section 01 1000 - Summary: Work sequence.

**1.03 REFERENCES**

- A. AGC (CPSM) - Construction Planning and Scheduling Manual; Associated General Contractors of America.
- B. M-H (CPM) - CPM in Construction Management - Project Management with CPM, O'Brien, McGraw-Hill Book Company.

**1.04 SUBMITTALS**

- A. Within 10 days after date established in Notice to Proceed, 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. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.
- F. Submit the number of opaque reproductions that Contractor requires, plus 2 copies that will be retained by Architect.
- G. Submit under transmittal letter form specified in Section 01 3000.

**1.05 QUALITY ASSURANCE**

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with 1 years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

**1.06 SCHEDULE FORMAT**

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- B. Diagram Sheet Size: Maximum 11x17 inches or width required.
- C. Scale and Spacing: To allow for notations and revisions.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRELIMINARY SCHEDULE**

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

**3.02 CONTENT**

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

- D. Provide legend for symbols and abbreviations used.

### **3.03 NETWORK ANALYSIS**

- A. Prepare network analysis diagrams and supporting mathematical analyses using the Critical Path Method.
- B. Illustrate order and interdependence of activities and sequence of work; how start of a given activity depends on completion of preceding activities, and how completion of the activity may restrain start of subsequent activities.
- C. Mathematical Analysis: Tabulate each activity of detailed network diagrams, using calendar dates, and identify for each activity:
  - 1. Preceding and following event numbers.
  - 2. Activity description.
  - 3. Estimated duration of activity, in maximum 15 day intervals.
  - 4. Earliest start date.
  - 5. Earliest finish date.
  - 6. Actual start date.
  - 7. Actual finish date.
  - 8. Latest start date.
  - 9. Latest finish date.
  - 10. Total and free float; float time shall accrue to Iowa Department of Transportation and to Iowa Department of Transportation's benefit.
  - 11. Monetary value of activity, keyed to Schedule of Values.
  - 12. Percentage of activity completed.
  - 13. Responsibility.
- D. Analysis Program: Capable of compiling monetary value of completed and partially completed activities, accepting revised completion dates, and recomputation of all dates and float.
- E. Required Reports: List activities in sorts or groups:
  - 1. By preceding work item or event number from lowest to highest.
  - 2. By amount of float, then in order of early start.

### **3.04 REVIEW AND EVALUATION OF SCHEDULE**

- A. Participate in joint review and evaluation of schedule with Architect at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

### **3.05 UPDATING SCHEDULE**

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain Date of Substantial Completion.
- F. Submit reports required to support recommended changes.

### **3.06 DISTRIBUTION OF SCHEDULE**

- A. Distribute copies of updated schedules to Contractor's project site file, to Subcontractors, suppliers, Architect, Iowa Department of Transportation, and other concerned parties.
- B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

**END OF SECTION**



**SECTION 01 4000**  
**QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. References and standards.
- B. Control of installation.
- C. Tolerances.

**1.02 RELATED REQUIREMENTS**

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

**1.03 REFERENCE STANDARDS**

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants.
- B. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing.

**1.04 REFERENCES AND STANDARDS**

- A. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- B. Obtain copies of standards where required by product specification sections.
- C. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- D. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- E. 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.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 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.

### **3.02 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.

### **3.03 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 5000**  
**TEMPORARY FACILITIES AND CONTROLS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Temporary utilities.
- B. Temporary sanitary facilities.
- C. Temporary Controls: Barriers and enclosures.
- D. Security requirements.
- E. Vehicular access and parking.
- F. Waste removal facilities and services.

**1.02 TEMPORARY UTILITIES**

- A. Iowa Department of Transportation will provide the following:
  - 1. Electrical power , consisting of connection to existing facilities.
  - 2. Water supply, consisting of connection to existing facilities.
- B. Use trigger-operated nozzles for water hoses, to avoid waste of water.

**1.03 TEMPORARY SANITARY FACILITIES**

- A. Use of existing facilities located at Highway Maintenance Garage is permitted.
- B. Maintain daily in clean and sanitary condition.
- C. At end of construction, return facilities to same or better condition as originally found.

**1.04 BARRIERS**

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

**1.05 SECURITY**

- A. Provide security and facilities to protect Work, existing facilities, and Iowa Department of Transportation's operations from unauthorized entry, vandalism, or theft.

**1.06 VEHICULAR ACCESS AND PARKING**

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Iowa Department of Transportation.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Existing on-site roads may be used for construction traffic.
- E. Existing parking areas located at Highway Maintenance Garage may be used for construction parking.

**1.07 WASTE REMOVAL**

- A. See Section 01 7419 - Waste Management, for additional requirements.
- B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- C. Provide containers with lids. Remove trash from site periodically.
- D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

**1.08 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS**

- A. Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**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. Procedures for Iowa Department of Transportation-supplied products.
- 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.

**1.03 REFERENCE STANDARDS**

- A. 16 CFR 260 - Guides for the Use of Environmental Marketing Claims; Federal Trade Commission.
- B. CAN/CSA Z809 - National Standard for Sustainable Forest Management; CSA International Inc..
- C. NFPA 70 - National Electrical Code; National Fire Protection Association.

**1.04 SUBMITTALS**

- A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
  - 1. Submit within 15 days after date of Agreement.
  - 2. For products specified only by reference standards, list applicable reference standards.
- B. 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.
- C. 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.
- D. 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. Unforeseen historic items encountered remain the property of the Iowa Department of Transportation; notify Iowa Department of Transportation promptly upon discovery; protect, remove, handle, and store as directed by Iowa Department of Transportation.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Iowa Department of Transportation, or otherwise indicated as to remain the property of the Iowa Department of Transportation, become the property of the Contractor; remove from site.

- D. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is required.
  - 1. See Section 01 1000 for list of items required to be salvaged for reuse and relocation.
  - 2. If reuse of other existing materials or equipment is desired, submit substitution request.

## **2.02 NEW PRODUCTS**

- A. Provide new products unless specifically required or permitted by the Contract Documents.

## **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. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. 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 Iowa Department of Transportation.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
  - 5. Will reimburse Iowa Department of Transportation and Architect for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. 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 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. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- G. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- H. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. 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 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Cleaning and protection.
- F. Closeout procedures, except payment procedures.
- G. General requirements for maintenance service.

**1.02 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 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.
- 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.

**1.03 REFERENCE STANDARDS**

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

**1.04 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 Iowa Department of Transportation or separate Contractor.
  - 6. Include in request:
    - a. Identification of Project.
    - b. Location and description of affected work.
    - c. Necessity for cutting or alteration.
    - d. Description of proposed work and products to be used.
    - e. Effect on work of Iowa Department of Transportation or separate Contractor.
    - f. Written permission of affected separate Contractor.
    - g. Date and time work will be executed.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.

**1.05 PROJECT CONDITIONS**

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

- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
  - 1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
  - 2. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Iowa Department of Transportation.
- C. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

## **1.06 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. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and clean-up of work of separate sections.
- F. Coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Iowa Department of Transportation'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 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 PREINSTALLATION MEETINGS**

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect four days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
  - 1. Review conditions of examination, preparation and installation procedures.
  - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Iowa Department of Transportation, participants, and those affected by decisions made.

### **3.04 GENERAL INSTALLATION REQUIREMENTS**

- A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
- B. 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.
- C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- F. Make neat transitions between different surfaces, maintaining texture and appearance.

### **3.05 ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as shown.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
  - 2. Remove and recycle items indicated on drawings.
  - 3. Relocate items indicated on drawings.
  - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Services (Including but not limited to Plumbing and Electrical): Remove, relocate, and extend existing systems to accommodate new construction.
  - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
- D. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.

1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
  2. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
- F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- G. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
- H. Clean existing systems and equipment.
- I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- J. Do not begin new construction in alterations areas before demolition is complete.
- K. Comply with all other applicable requirements of this section.

### **3.06 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
1. Complete the work.
  2. Match work that has been cut to adjacent work.
  3. Repair areas adjacent to cuts to required condition.
  4. Repair new work damaged by subsequent work.
  5. Remove samples of installed work for testing when requested.
  6. Remove and replace defective and non-conforming work.
- D. 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.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. 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.

### **3.07 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- C. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

### **3.08 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; recycle plastic coverings if possible.

### **3.09 ADJUSTING**

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

### **3.10 FINAL CLEANING**

- A. Contractor will provide comprehensive cleaning after final acceptance.
- 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 debris from roofs, gutters, downspouts, and drainage systems.
- E. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

### **3.11 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to Architect and Iowa Department of Transportation.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Substantial Completion.
- D. 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.
- E. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Iowa Department of Transportation-occupied areas.
- F. Accompany Project Coordinator on preliminary final inspection.
- G. Notify Architect when work is considered finally complete.
- H. Complete items of work determined by Architect's final inspection.

**END OF SECTION**

## SECTION 01 7419

### CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

#### PART 1 GENERAL

##### 1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Iowa Department of Transportation 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, 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. 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.
- F. 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 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.

### **1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. 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 Iowa Department of Transportation.
  - 3. Landfill Disposal: Include the following information:
    - a. Identification of material.
    - b. Amount, in tons or cubic yards, 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, 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, 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.
    - 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 1000 for list of items to be salvaged from the existing building for relocation in project or for Iowa Department of Transportation.
- B. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.

- D. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.
- E. 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, Iowa Department of Transportation, 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 SECTION INCLUDES**

- A. Project Record Documents.
- B. 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: 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 one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  - 3. Submit two sets of revised 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 Iowa Department of Transportation'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 Iowa Department of Transportation.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Changes made by Addenda and modifications.

- F. 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 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 Iowa Department of Transportation'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. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
- F. 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.
- G. 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.
- H. 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 building elements for alteration purposes.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 1000 - Summary: Description of items to be removed by Iowa Department of Transportation.
- C. Section 01 1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
- D. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- E. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- F. 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.
- G. 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.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Site Plan: Showing:
  - 1. Areas for temporary construction and field offices.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
  - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
  - 2. Identify demolition firm and submit qualifications.
  - 3. Include a summary of safety procedures.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

**1.05 QUALITY ASSURANCE**

- A. Demolition Firm Qualifications: Company specializing in the type of work required.
  - 1. Minimum of 3 years of documented experience.

**PART 2 PRODUCTS -- NOT USED**

**PART 3 EXECUTION**

**3.01 SCOPE**

- A. Remove paving and curbs as required to accomplish new work.
- 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. Obtain required permits.
  2. Use of explosives is not permitted.
  3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
  4. Provide, erect, and maintain temporary barriers and security devices.
  5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
  6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
  7. Do not close or obstruct roadways or sidewalks without permit.
  8. 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.
  9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- C. Do not begin removal until receipt of notification to proceed from Iowa Department of Transportation.
- D. Do not begin removal until built elements to be salvaged or relocated have been removed.
- E. Protect existing structures and other elements that are not to be removed.
1. Provide bracing and shoring.
  2. Prevent movement or settlement of adjacent structures.
  3. Stop work immediately if adjacent structures appear to be in danger.
- F. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- G. If hazardous materials are discovered during removal operations, stop work and notify Architect and Iowa Department of Transportation; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.
- H. Perform demolition in a manner that maximizes salvage and recycling of materials.
1. Dismantle existing construction and separate materials.
  2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.
- I. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

### **3.03 EXISTING UTILITIES**

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Iowa Department of Transportation.
- E. 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 Iowa Department of Transportation.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
- H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

### **3.04 SELECTIVE DEMOLITION FOR ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as shown.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from other areas that are still occupied.
  - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- D. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
  - 2. Remove items indicated on drawings.
- E. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
  - 4. Patch as specified for patching new work.

### **3.05 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 03 4500**  
**PRECAST ARCHITECTURAL CONCRETE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Architectural precast concrete sills.
- B. Supports, anchors, and attachments.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 6200 - Sheet Metal Flashing and Trim: Reglets recessed in units.

**1.03 REFERENCE STANDARDS**

- A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute International.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
- C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- D. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- E. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.
- F. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
- G. ASTM A563M - Standard Specification for Carbon and Alloy Steel Nuts [Metric].
- H. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement.
- I. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement.
- J. ASTM C150/C150M - Standard Specification for Portland Cement.
- K. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete.
- L. ASTM C989/C989M - Standard Specification for Slag Cement for Use in Concrete and Mortars.
- M. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
- N. IAS AC157 - Accreditation Criteria for Fabricator Inspection Programs for Reinforced and Precast/Prestressed Concrete.
- O. PCI MNL-117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products; Precast/Prestressed Concrete Institute.
- P. PCI MNL-120 - PCI Design Handbook - Precast and Prestressed Concrete; Precast/Prestressed Concrete Institute.
- Q. PCI MNL-122 - Architectural Precast Concrete; Precast/Prestressed Concrete Institute.
- R. PCI MNL-123 - Design and Typical Details of Connections for Precast and Prestressed Concrete; Precast/Prestressed Concrete Institute.
- S. PCI MNL-135 - Tolerance Manual for Precast and Prestressed Concrete Construction; Precast/Prestressed Concrete Institute.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's information on accessory products, including pigments, admixtures, inserts, plates, etc.

- C. Shop Drawings: Indicate layout, unit locations, configuration, reinforcement, connection details, support items, dimensions, openings, and relationship to adjacent materials.
- D. Fabricator's Qualification Statement: Provide documentation showing precast concrete fabricator is accredited under IAS AC157.

### **1.05 QUALITY ASSURANCE**

- A. Fabricator Qualifications:
  - 1. Firm having at least 2 years of documented experience in production of precast concrete of the type required.
  - 2. Plant certified under Precast/Prestressed Concrete Institute Plant Certification Program; product group and category A1 - Architectural Precast Concrete.
  - 3. Plant certified under Architectural Precast Association Plant Certification Program for production of architectural precast concrete.
  - 4. Fabricator Qualifications: Precast concrete fabricator accredited by IAS according to IAS AC157.

### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Handling: Lift and support precast units only from support points.
- B. Protect units to prevent staining, chipping, or spalling of concrete.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Architectural Precast Concrete:
  - 1. Sill @ office windows: E302, Height 5 5/8" (field verify).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 PRECAST UNITS**

- A. Precast Architectural Concrete Units: Comply with PCI MNL-120, PCI MNL-122, PCI MNL-123, PCI MNL-135, and ACI 318.
  - 1. Design Loads: Static loads, anticipated dynamic loading, including positive and negative wind loads, thermal movement loads, and erection forces as defined by applicable code.
  - 2. Calculate structural properties of units in accordance with ACI 318.
  - 3. Accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.
  - 4. Provide connections that accommodate building movement and thermal movement and adjust to misalignment of structure without unit distortion or damage.
- B. Finish Type A: Ensure exposed-to-view finish surfaces of precast units are uniform in color and appearance.

### **2.03 REINFORCEMENT**

- A. Reinforcing Steel: ASTM A615/A615M, Grade 40 - 40,000 psi.
  - 1. Deformed billet-steel bars.
  - 2. Galvanized in accordance with ASTM A767/A767M, Class I.

### **2.04 CONCRETE MATERIALS**

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
- B. Other Cementitious Materials:
  - 1. Fly Ash or Natural Pozzolans: Comply with ASTM C618.
  - 2. Ground Granulated Blast Furnace Slag: ASTM C989/C989M.
  - 3. Silica Fume: Comply with ASTM C1240.
- C. Water: Clean and not detrimental to concrete.

### **2.05 SUPPORT DEVICES**

- A. Connecting and Support Devices; Anchors and Inserts: ASTM A36/A36M steel; hot-dip galvanized in accordance with ASTM A153/A153M.

1. Clean surfaces of rust, scale, grease, and foreign matter.
  2. Galvanize after fabrication in accordance with requirements of ASTM A123/A123M.
- B. Bolts, Nuts, and Washers: ASTM A307 heavy hex bolts, Type A, hot-dip galvanized, with matching ASTM A563 (A 563M) nuts and matching washers.
- C. Primer: Zinc rich type.

**2.06 FABRICATION**

- A. Fabricate in conformance with PCI MNL-117 and PCI MNL-135.

**END OF SECTION**

**SECTION 04 2000**  
**UNIT MASONRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Concrete Block.
- B. Mortar and Grout.
- C. Reinforcement and Anchorage.
- D. Flashings.
- E. Accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 4500 - Precast Architectural Concrete: Sills
- B. Section 05 5000 - Metal Fabrications: Loose steel lintels and fabricated steel items.
- C. Section 07 2100 - Thermal Insulation: Insulation for cavity spaces.
- D. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.

**1.03 REFERENCE STANDARDS**

- A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; American Concrete Institute International.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- C. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.
- D. ASTM C91/C91M - Standard Specification for Masonry Cement.
- E. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar.
- F. ASTM C150/C150M - Standard Specification for Portland Cement.
- G. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes.
- H. ASTM C270 - Standard Specification for Mortar for Unit Masonry.
- I. ASTM C744 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Samples: Submit four samples of masonry units to illustrate color, texture, and extremes of color range.
- D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

**1.05 QUALITY ASSURANCE**

- A. Comply with provisions of ACI 530/530.1/ERTA, except where exceeded by requirements of the contract documents.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

**PART 2 PRODUCTS**

**2.01 CONCRETE MASONRY UNITS**

- A. Concrete Block: Comply with referenced standards and as follows:

1. Size: Standard units with nominal face dimensions of 16 x 8 inches and nominal depth of 4 inches.
2. Special Shapes: Provide non-standard blocks configured for corners and other detailed conditions.
3. Load-Bearing Units: ASTM C90, normal weight.
  - a. Hollow block.
4. Pre-Faced Units: ASTM C90, solid block, with Split Face or Rock Face.
  - a. Colors: to be chosen from standard colors.
  - b. Manufacturer:
    - 1) Trenwyth: [www.trenwyth.com](http://www.trenwyth.com)
    - 2) King's Material Inc.: [www.kingsmaterial.co](http://www.kingsmaterial.co)
    - 3) Anchor Block Company

## **2.02 MORTAR AND GROUT MATERIALS**

- A. Masonry Cement: ASTM C91/C91M, Type N.
  1. Colored Mortar: Premixed cement as required to match Architect's color sample.
- B. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
  1. Not more than 0.60 percent alkali.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Mortar Aggregate: ASTM C144.
- E. Grout Aggregate: ASTM C404.
- F. Water: Clean and potable.

## **2.03 REINFORCEMENT AND ANCHORAGE**

- A. Manufacturers of Joint Reinforcement and Anchors:
  1. Blok-Lok Limited; [www.blok-lock.com](http://www.blok-lock.com).
  2. Hohmann & Barnard, Inc (including Dur-O-Wal brand); [www.h-b.com](http://www.h-b.com).
  3. WIRE-BOND: [www.wirebond.com](http://www.wirebond.com).
  4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
  1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
  2. Wire ties: Manufacturer's standard shape, 0.1875 inch thick.
  3. Vertical adjustment: Not less than 3-1/2 inches.

## **2.04 FLASHINGS**

- A. EPDM Flashing: ASTM D4637, Type I, 0.040 inch thick.
  1. Manufacturers:
    - a. Hohmann & Barnard, Inc; Epra-Max: [www.h-b.com](http://www.h-b.com).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.05 ACCESSORIES**

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
  1. Manufacturers:
    - a. Blok-Lok Limited; [www.blok-loc.com](http://www.blok-loc.com).
    - b. Hohmann & Barnard, Inc (including Dur-O-Wal brand); [www.h-b.com](http://www.h-b.com).
    - c. WIRE-BOND: [www.wirebond.com](http://www.wirebond.com).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; 1/2 inch wide x by maximum lengths available.

1. Manufacturers:
  - a. Hohmann & Barnard, Inc (including Dur -O-Wal brand); [www.h-b.com](http://www.h-b.com).
  - b. WIRE-BOND: [www.wirebond.com](http://www.wirebond.com).
  - c. Substitutions: See Section 01 6000 - Product Requirements.
- C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
  1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
    - a. Manufacturers:
      - 1) Advanced Building Products Inc; Mortar Break DT: [www.advancedflashing.com](http://www.advancedflashing.com).
      - 2) Advanced Building Products Inc; Mortar Break: [www.advancedflashing.com](http://www.advancedflashing.com).
      - 3) Mortar Net Solutions; Mortar Net with Insect Barrier: [www.mortarnet.com](http://www.mortarnet.com).
      - 4) Substitutions: See Section 01 6000 - Product Requirements.
  - D. Termination Bars: Polyvinyl chloride (PVC); compatible with membrane and adhesives.
  - E. Weeps: Cotton rope.
  - F. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

## **2.06 MORTAR AND GROUT MIXES**

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
  1. Exterior, non-loadbearing masonry: Type N.
- B. Grout: AST C1107; non-metallic shrinkage resistant.
- C. Mixing: Use mechanical batch mixer and comply with referenced standards.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

### **3.02 PREPARATION**

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

### **3.03 COLD AND HOT WEATHER REQUIREMENTS**

- A. Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

### **3.04 COURSING**

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
  1. Bond: Running.
  2. Coursing: One unit and one mortar joint to equal 8 inches except where indicated on drawings to be 4".
  3. Mortar Joints: Concave.

### **3.05 PLACING AND BONDING**

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

- C. Remove excess mortar and mortar smears as work progresses.
- D. Interlock intersections and external corners.
- E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- G. Isolate masonry partitions from vertical structural framing members with a control joint .

### **3.06 WEEPS/CAVITY VENTS**

- A. Install weeps in veneer and cavity walls at 24 inches on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.
- B. Install cavity vents in veneer and cavity walls at 32 inches on center horizontally below shelf angles and lintels and near top of walls.

### **3.07 CAVITY MORTAR CONTROL**

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

### **3.08 REINFORCEMENT AND ANCHORAGE - GENERAL**

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.

### **3.09 MASONRY FLASHINGS**

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
  1. Extend flashings full width at such interruptions and at least 6 inches into adjacent masonry or turn up at least 8 inches to form watertight pan at non-masonry construction.
  2. Remove or cover protrusions or sharp edges that could puncture flashings.
  3. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Extend EPDM flashings to within 1/4 inch of exterior face of masonry.
- C. Lap end joints of flashings at least 6 inches and seal watertight with flashing sealant/adhesive.
- D. Fill grooves on precast panels with grout as necessary to provide suitable base for flashing.

### **3.10 LINTELS**

- A. Install loose steel lintels over openings in CMU walls.
- B. Maintain minimum 8 inch bearing on each side of opening.

### **3.11 GROUTED COMPONENTS**

- A. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

### **3.12 CONTROL AND EXPANSION JOINTS**

- A. Do not continue horizontal joint reinforcement through control or expansion joints.

- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

### **3.13 TOLERANCES**

- A. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- B. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- C. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- D. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- E. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.
- F. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

### **3.14 CUTTING AND FITTING**

- A. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

### **3.15 CLEANING**

- A. Remove excess mortar and mortar droppings.
- B. Clean soiled surfaces with cleaning solution.
- C. Use non-metallic tools in cleaning operations.

**END OF SECTION**

**SECTION 05 5000**  
**METAL FABRICATIONS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Shop fabricated steel items, including: lintels, structural angle, fasteners.

**1.02 RELATED REQUIREMENTS**

- A. Section 04 2000 - Unit Masonry: Grout.

**1.03 REFERENCE STANDARDS**

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- D. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
- E. ASTM A325M - Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength (Metric).
- F. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel; International Accreditation Service, Inc..
- G. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.

**1.05 QUALITY ASSURANCE**

- A. Fabricator Qualifications: A qualified steel fabricator that is accredited by the International Accreditation Service (IAS) Fabricator Inspection Program for Structural Steel (AC172).

**PART 2 PRODUCTS**

**2.01 MATERIALS - STEEL**

- A. Steel Sections: ASTM A36/A36M.
- B. Fasteners for furring strips: 1/4" dia. x 4" hex head tapcon concrete anchors w/blue climaseal finish .
- C. Bolts, Nuts, and Washers: ASTM A325 (ASTM A325M), Type 1, galvanized to ASTM A153/A153M where connecting galvanized components.
- D. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

**2.02 FABRICATION**

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- D. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

- E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

### **2.03 FABRICATED ITEMS**

- A. Shelf Angles Not Attached to Structural Framing: For support of masonry; galvanized finish.
- B. Lintels: As detailed; galvanized finish.

### **2.04 FINISHES - STEEL**

- A. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 2 oz/sq ft galvanized coating.

### **2.05 FABRICATION TOLERANCES**

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.

### **3.02 PREPARATION**

### **3.03 INSTALLATION**

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Obtain approval prior to site cutting or making adjustments not scheduled.
- C. Grout concrete ribs solid behind structural angleat perimeter to hold masonry.

### **3.04 TOLERANCES**

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

**END OF SECTION**

**SECTION 06 1000**  
**ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preservative treated wood materials.
- B. Concealed wood blocking, nailers, and supports.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1219 - Structural Insulated Panels.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Sill flashings.

**1.03 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- B. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood Protection Association.
- C. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology, Department of Commerce.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials and application instructions.
- C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

**1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

**PART 2 PRODUCTS**

**2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
  - 2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee ([www.alsc.org](http://www.alsc.org)) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
  - 3. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.
- B. Lumber fabricated from old growth timber is not permitted.

**2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  - 1. Lumber: S4S, No. 2 or Standard Grade.
  - 2. Boards: Standard or No. 3.

### **2.03 STRUCTURAL COMPOSITE LUMBER**

- A. At Contractor's option, structural composite lumber may be substituted for concealed dimension lumber and timbers.

### **2.04 ACCESSORIES**

- A. Fasteners and Anchors:
  - 1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

### **2.05 FACTORY WOOD TREATMENT**

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  - 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.
- B. Preservative Treatment:
  - 1. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft retention.
    - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
    - b. Treat lumber exposed to weather.
    - c. Treat lumber in contact with roofing, flashing, or waterproofing.
    - d. Treat lumber in contact with masonry or concrete.
    - e. Treat lumber less than 18 inches above grade.
    - f. Treat lumber in other locations as indicated.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION - GENERAL**

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

### **3.02 BLOCKING, NAILERS, AND SUPPORTS**

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

### **3.03 CLEANING**

- A. Waste Disposal: Comply with the requirements of Section 01 7419.
  - 1. Comply with applicable regulations.
  - 2. Do not burn scrap on project site.
  - 3. Do not burn scraps that have been pressure treated.
  - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

**END OF SECTION**

**SECTION 06 1219**  
**STRUCTURAL INSULATED PANELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Structural insulated panels for walls.
- B. Fasteners and adhesives.
- C. Accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 5000 - Metal Fabrications: Miscellaneous steel connectors and support angles for wood framing.
- B. Section 06 1000 - Rough Carpentry: Bearing support, stud framing, field-fabricated panel connections, miscellaneous blocking and nailers.
- C. Section 07 2500 - Weather Barriers: Water-resistive barrier over sheathing.
- D. Section 07 6200 - Sheet Metal Flashing and Trim: Sill flashings.

**1.03 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- B. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
- C. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- D. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
- E. ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.
- F. PS 2 - Performance Standard for Wood-Based Structural-Use Panels; National Institute of Standards and Technology, U.S. Department of Commerce.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide structural insulated panel manufacturer's product literature including structural properties, design load capacities and installation instructions.
- C. Shop Drawings: Fully dimensioned fabrication and installation details for structural insulated panels. Indicate dimensions, materials, connections and arrangement of joints. Include anchorage, size and type of fasteners, and accessories.
  - 1. Include calculations that indicate compliance with the applicable building code and the structural insulated panel manufacturer's requirements.
  - 2. Include seal of Professional Engineer registered in Fairfield, Iowa on drawings and calculations.
- D. Designer's Qualification Statement.
- E. Manufacturer's Qualification Statement.
- F. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Iowa Department of Transportation's name and registered with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Designer Qualifications: Perform design under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in Fairfield, Iowa.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
  - 1. Member of Structural Insulated Panel Association (SIPA).

2. Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver structural insulated panels in manufacturer's packaging, if any, and with manufacturer labels and markings intact.
- B. Cover structural insulated panels with waterproof covering during transportation and storage. Keep dry.
- C. Protect edges of wood construction panels and foam cores.
- D. Fully support structural insulated panels off the ground.
- E. Do not lift structural insulated panels by wood construction panel layer.

#### **1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Structural Insulated Panels:
  1. EPS Buildings; [www.epsbuildings.com](http://www.epsbuildings.com).
  2. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 STRUCTURAL INSULATED PANELS**

- A. Structural Insulated Panels: Provide structural insulated panels capable of withstanding design loads including dead load, live load, wind load and seismic load.
- B. Structural Insulated Wall Panel: Oriented strand board construction panel laminated to one side of rigid expanded polystyrene insulation board.
  1. Panel Size: 4 feet by 8 feet.
  2. Overall Thickness: 6 inches, nominal.
  3. Span Rating: 24/16, minimum.
  4. Edge Treatment: Square edge.
  5. Thermal Resistance: R-value of 18 minimum.

#### **2.03 MATERIALS**

- A. Oriented Strand Board: 5/8 inch thick, APA Exposure 1, DOC PS-2 span rating 24/16, minimum.
- B. Expanded Polystyrene (EPS) Insulation Board:
  1. Density: ASTM C578, Type I; 0.9 lb/cu ft, minimum, when tested according to ASTM D1622.
  2. Thermal Resistance (R-value): 3.6, minimum, when tested at 1 inch thickness in accordance with ASTM C518 or ASTM C177.

#### **2.04 ACCESSORIES**

- A. Fasteners and Anchors:
  1. Metal and Finish: Hot-dipped galvanized steel per ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
- B. Sill Flashing: As specified in Section 07 6200.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine surfaces to receive structural insulated panels. Verify conditions suitable for installation. Report unsatisfactory conditions to [Architect]. Do not proceed with structural insulated panel work until unsatisfactory conditions corrected.

#### **3.02 PREPARATION**

- A. Coordinate installation of rough carpentry members specified in other sections.

### **3.03 INSTALLATION**

- A. Install structural insulated panels in accordance with manufacturer's instructions.
  - 1. Comply with manufacturer's written recommendation for number, size and placement of fasteners.
  - 2. Join structural insulated panel edges according to manufacturer's written recommendation.
- B. Restrictions:
  - 1. Do not over cut oriented strand board or plywood face when field-cutting openings.
  - 2. Do not install electrical chases inside structural insulated panels.
  - 3. Do not install plumbing inside structural insulated panels without consulting manufacturer and obtaining written recommendations.
  - 4. Protect structural insulated panel core from solvents and solvent vapors.
- C. Prevent damage to structural insulated panels.
- D. When structural insulated panels have oriented strand board or plywood on one side only, install panel with wood face on exterior of structure.
- E. Install structural insulated panels plumb, square and true to line.
- F. Seal panel joints with manufacturer's recommended sealant.
- G. Repair or replace damaged panels.

### **3.04 PROTECTION**

- A. Do not leave panels exposed to moisture. Remove wet panels or allow to dry completely before installation of sealants, tape, weather barrier and siding or other veneer.
- B. Protect installed structural insulated panels from subsequent construction operations.
- C. Cover top and edges of unfinished panel work. Protect from weather and prevent accumulation of water in cores.

**END OF SECTION**

**SECTION 07 2100**  
**THERMAL INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Board insulation and integral vapor retarder at perimeter foundation wall, exterior wall behind concrete masonry unit wall finish, and in soffit at office and under equipment support shelves.

**1.02 REFERENCE STANDARDS**

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

**PART 2 PRODUCTS**

**2.01 APPLICATIONS**

- A. Insulation on Inside of Concrete and Masonry Exterior Walls: Polyisocyanurate.

**2.02 FOAM BOARD INSULATION MATERIALS**

- A. Polyisocyanurate Board Insulation with Facers Both Sides: Rigid cellular foam, complying with ASTM C1289; Type I, aluminum foil both faces; Class 1, non-reinforced foam core.
  - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
  - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
  - 3. Compressive Strength: 16 psi
  - 4. Board Size: 48 x 96 inch.
  - 5. Thermal Resistance: R-value of 18.
  - 6. Board Edges: Square.
  - 7. Manufacturers:
    - a. Carlisle Coatings & Waterproofing, Inc; R2+ Matte: [www.carlisle-ccw.com](http://www.carlisle-ccw.com).
    - b. Dow Chemical Co: [www.dow.com](http://www.dow.com).
    - c. GAF: [www.gaf.com](http://www.gaf.com).
    - d. Hunter Panels, LLC; H-Shield: [www.hpanels.com](http://www.hpanels.com).
    - e. Hunter Panels, LLC; Xci Class A Foil: [www.hunterxci.com](http://www.hunterxci.com).
    - f. Johns Manville; AP Foil-Faced: [www.jm.com](http://www.jm.com).
    - g. Rmax Inc.; ECOMAXci: [www.rmax.com](http://www.rmax.com).
  - 8. Substitutions: See Section 01 6000 - Product Requirements.

**2.03 ACCESSORIES**

- A. Insulation Fasteners: Impaling clip of galvanized steel with washer retainer , to be mechanically fastened to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation .

### **3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER**

- A. Adhere a 6 inch wide strip of polyethylene sheet over construction, control, and expansion joints with double beads of adhesive each side of joint.
  - 1. Tape seal joints.
  - 2. Extend sheet full height of joint.
- B. Install boards horizontally on foundation perimeter.
  - 1. Install in running bond pattern.
  - 2. Butt edges and ends tightly to adjacent boards and to protrusions.
- C. Extend boards over expansion joints, unbonded to foundation on one side of joint.
- D. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

### **3.03 BOARD INSTALLATION AT CAVITY WALLS**

- A. Secure impale fasteners to substrate at a frequency as follows:
  - 1. 6 per insulation board.
- B. Adhere a 6 inch wide strip of polyethylene sheet over expansion joints with double beads of adhesive each side of joint.
  - 1. Tape seal joints between sheets.
- C. Install boards to fit snugly between wall ties.
  - 1. Place membrane surface facing out, and tape seal board joints.
- D. Install boards horizontally on walls.
  - 1. Install in running bond pattern.
  - 2. Butt edges and ends tightly to adjacent boards and to protrusions.
  - 3. Place impale fastener locking discs.
- E. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- F. Place 6 inch wide polyethylene sheet at perimeter of wall openings, from adhesive vapor retarder bed to window and door frames. Tape seal in place to ensure continuity of vapor retarder and air seal.

### **3.04 PROTECTION**

- A. Do not permit installed insulation to be damaged prior to its concealment.

**END OF SECTION**

**SECTION 07 4213  
METAL WALL PANELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured metal panels for walls, with related flashings and accessory components.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 2300 - Alternates
- B. Section 06 1219 - Structural Insulated Panels.
- C. Section 07 2100 - Thermal Insulation.
- D. Section 07 2500 - Weather Barriers: Weather barrier under wall panels.

**1.03 REFERENCE STANDARDS**

- A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- B. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric].

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate dimensions, layout, joints, construction details, methods of anchorage.
- C. Samples: Submit two samples of wall panel, 6 inch by 6 inch in size illustrating finish color, sheen, and texture.

**1.05 QUALITY ASSURANCE**

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

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Store prefinished material off ground and protected from weather. Prevent twisting, bending, or abrasion, and provide ventilation to stored materials. Slope metal sheets to ensure drainage.
- C. Prevent contact with materials that may cause discoloration or staining of products.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Manufacturers:
  - 1. MBCI: [www.mbc.com](http://www.mbc.com).
  - 2. Petersen Aluminum Corporation; Product Exposed Fastener 7.2 Panel: [www.pac-clad.com](http://www.pac-clad.com).
  - 3. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 MANUFACTURED METAL PANELS**

- A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
  - 1. Provide exterior panels.
  - 2. Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall.
  - 3. Design Pressure: In accordance with applicable codes.
  - 4. Maximum Allowable Deflection of Panel: 1/90 of span.

5. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement within system; movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.
  6. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
  7. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
  8. Corners: Factory-fabricated in one continuous piece with minimum 18 inch returns.
  9. Exterior Finish: Panel manufacturer's standard polyvinylidene fluoride (PVDF) coating, top coat over epoxy primer.
  10. Exterior Panel Back Coating: Panel manufacturer's standard polyester wash coat.
- B. Exterior Panels:
1. Profile: Vertical; 7.2 Panel.
  2. Side Seams: Double-interlocked, tight-fitting, sealed with continuous gaskets.
  3. Material: Precoated aluminum sheet, 20 gage, 0.032 inch minimum thickness.
  4. Panel Width: 36 inches.
  5. Color: As selected by Architect from manufacturer's standard line.
- C. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.
- D. Expansion Joints: Same material, thickness and finish as exterior sheets; 20 gage, 0.032 inch thick; manufacturer's standard brake formed type, of profile to suit system.
- E. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- F. Anchors: Galvanized steel or Aluminum.

### **2.03 MATERIALS**

- A. Precoated Aluminum Sheet: ASTM B209 (ASTM B209M), 3105 alloy, O temper, smooth surface texture; continuous-coil-coated on exposed surfaces with specified finish coating and on panel back with specified panel back coating.

### **2.04 ACCESSORIES**

- A. Gaskets: Manufacturer's standard type suitable for use with system, permanently resilient; ultraviolet and ozone resistant.
- B. Sealants:
1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
  2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
- C. Fasteners: Manufacturer's standard type to suit application; with soft neoprene washers, steel, hot dip galvanized. Fastener cap same color as exterior panel.
1. Products:
    - a. ITW Commercial Construction North America; Teks Select Series; [www.ITWBuildex.com](http://www.ITWBuildex.com).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- D. Field Touch-up Paint: As recommended by panel manufacturer.
- E. Bituminous Paint: Asphalt base.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that building framing members are ready to receive panels.
- B. Verify that weather barrier has been installed over substrate completely and correctly.

### **3.02 PREPARATION**

- A. Install subgirts perpendicular to panel length, securely fastened to substrates and shimmed and leveled to uniform plane. Space at 24 inches on center, maximum.

### **3.03 INSTALLATION**

- A. Install panels on walls in accordance with manufacturer's instructions.
- B. Protect surfaces in contact with cementitious materials and dissimilar metals with bituminous paint. Allow to dry prior to installation.
- C. Fasten panels to structural supports; aligned, level, and plumb.
- D. Locate joints over supports. Lap panel ends minimum 2 inches.
- E. Provide expansion and control joints where indicated.
- F. Use matching exposed fasteners unless otherwise approved by Architect.
- G. Seal and place gaskets to prevent weather penetration. Maintain neat appearance.

### **3.04 TOLERANCES**

- A. Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1/16 inch.
- B. Maximum Variation from Plane or Location Indicated on Drawings: 1/4 inch.

### **3.05 CLEANING**

- A. Remove site cuttings from finish surfaces.
- B. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

**END OF SECTION**

**SECTION 07 4646**  
**FIBER CEMENT SIDING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wood-fiber cement siding.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Siding substrate.
- B. Section 07 2500 - Weather Barriers: Weather barrier under siding.

**1.03 REFERENCE STANDARDS**

- A. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Manufacturer's requirements for related materials to be installed by others.
  - 2. Preparation instructions and recommendations.
  - 3. Storage and handling requirements and recommendations.
  - 4. Installation methods, including nail patterns.
- C. Maintenance Instructions: Periodic inspection recommendations and maintenance procedures.
- D. Warranty: Submit copy of manufacturer's warranty, made out in Iowa Department of Transportation's name, showing that it has been registered with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section with minimum 3 years of experience.

**PART 2 PRODUCTS**

**2.01 SIDING**

- A. Lap Siding: Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with machined edges, for nail attachment.
  - 1. Style: Standard lap style.
  - 2. Texture: Smooth.
  - 3. Length: 12 ft, nominal.
  - 4. Width (Height): 8-1/4 inches.
  - 5. Thickness: 5/16 inch, nominal.
  - 6. Finish: factory applied, baked-on.
  - 7. Color: As selected by Architect from manufacturers full range of available colors.
  - 8. Warranty: 30 year limited; transferable.
  - 9. Lap Siding Manufacturers:
    - a. James Hardie Building Products, Inc : [www.jameshardie.com](http://www.jameshardie.com).

**2.02 ACCESSORIES**

- A. Trim: Same material and texture as siding.
- B. Fasteners: Galvanized or corrosion resistant; length as required to penetrate minimum 1-1/4 inch.

**PART 3 EXECUTION**

**3.01 PREPARATION**

- A. Examine substrate and clean and repair as required to eliminate conditions that would be detrimental to proper installation.

- B. Verify that weather barrier has been installed over substrate completely and correctly.
- C. Do not begin until unacceptable conditions have been corrected.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions and recommendations.
  - 1. Read warranty and comply with all terms necessary to maintain warranty coverage.
  - 2. Use trim details indicated on drawings.
  - 3. Touch up all field cut edges before installing.
  - 4. Pre-drill nail holes if necessary to prevent breakage.
- B. Over Wood and Wood-Composite Sheathing: Fasten siding through sheathing into studs.
- C. Allow space for thermal movement between both ends of siding panels that butt against trim; seal joint between panel and trim with specified sealant.
- D. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.
- E. Do not install siding less than 6 inches from surface of ground nor closer than 1 inch to roofs, patios, porches, and other surfaces where water may collect.
- F. After installation, seal all joints except lap joints of lap siding. Seal around all penetrations. Paint all exposed cut edges.
- G. Touch up Paint: per manufacturer's recommendation

### **3.03 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

**END OF SECTION**

**SECTION 07 6200**  
**SHEET METAL FLASHING AND TRIM**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fabricated sheet metal items, including other items indicated in Schedule.
- B. Sealants for joints within sheet metal fabrications.

**1.02 RELATED REQUIREMENTS**

**1.03 REFERENCE STANDARDS**

- A. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
- B. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
- C. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- E. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- F. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric].
- G. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- H. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- I. SMACNA (ASMM) - Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on manufactured components metal types, finishes, and characteristics.
- C. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

**1.05 QUALITY ASSURANCE**

- A. Perform work in accordance with SMACNA 1793 and CDA A4050 requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 3 years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

**PART 2 PRODUCTS**

**2.01 SHEET MATERIALS**

- A. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 0.02 inch thick base metal, shop pre-coated with PVDF coating.
  - 1. PVDF (Polyvinylidene Fluoride) Coating: Superior Performance Organic Finish, AAMA 2605; multiple coat, thermally cured fluoropolymer finish system.
  - 2. Color: As selected by Architect from manufacturer's standard colors.

- B. Pre-Finished Aluminum: ASTM B209 (ASTM B209M); 0.032 inch thick; plain finish shop pre-coated with modified silicone coating.
  - 1. Modified Silicone Polyester Coating: Pigmented Organic Coating System, AAMA 2603; baked enamel finish system.
  - 2. Color: As selected by Architect from manufacturer's standard colors.

## **2.02 ACCESSORIES**

- A. Fasteners: Same material and finish as flashing metal .
- B. Primer: Zinc chromate type.
- C. Protective Backing Paint: Zinc molybdate alkyd.
- D. Sealant to be Concealed in Completed Work: Non-curing butyl sealant.
- E. Sealant to be Exposed in Completed Work: ASTM C920; elastomeric sealant, 100 percent silicone with minimum movement capability of plus/minus 25 percent and recommended by manufacturer for substrates to be sealed; clear.
- F. Plastic Cement: ASTM D4586, Type I.

## **2.03 FABRICATION**

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- F. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- G. Seal metal joints water tight.
- H. Modify and extend scuppers, downspouts and roof cap to allow for new exterior insulation and wall. Provide new to matching existing, as necessary.
- I. Flash all openings per manufacturers details. Extend flashing to interior face or framing.

## **2.04 GUTTER AND DOWNSPOUT RELOCATION**

- A. Accessories: Profiled to suit gutters and downspouts.
  - 1. Anchorage Devices: In accordance with SMACNA requirements.
  - 2. Downspout Supports: Brackets.
- B. Downspout Boots: Rigid PVC.
- C. Seal joints.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify roof openings, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

### **3.02 PREPARATION**

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

### **3.03 INSTALLATION**

- A. Secure flashings in place using concealed fasteners. Use exposed fasteners only where permitted.

- B. Apply plastic cement compound between metal flashings and felt flashings.
- C. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- D. Seal metal joints watertight.
- E. Secure gutters and downspouts in place using fasteners.
- F. Connect downspouts to downspout boots. Seal connection watertight.

**3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for field inspection requirements.
- B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

**3.05 SCHEDULE**

- A. Fabricate accessories in profile and size to suit gutters and downspouts.
  - 1. Anchorage Devices: In accordance with SMACNA.
  - 2. Downspout Supports: Brackets
- B. Scuppers: 24-gauge Pre-finished Galvanized steel or aluminum, color to match existing downspouts, bituminous back-paint.
- C. Coping, Cap, Parapet, Sill and Ledge Flashings, Door and Window surrounds: 24-gauge Pre-finished Galvalume steel or aluminum, bituminous back-paint.

**END OF SECTION**

**SECTION 07 9005**  
**JOINT SEALERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Sealants and joint backing.
- B. Precompressed foam sealers.

**1.02 REFERENCE STANDARDS**

- A. ASTM C834 - Standard Specification for Latex Sealants.
- B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- C. ASTM C1193 - Standard Guide for Use of Joint Sealants.
- D. ASTM D1667 - Standard Specification for Flexible Cellular Materials--Poly(Vinyl Chloride) Foam (Closed-Cell).
- E. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; [www.aqmd.gov](http://www.aqmd.gov).

**1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate the work with other sections referencing this section.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- C. Manufacturer's Installation Instructions: Indicate surface preparation and perimeter conditions requiring special attention.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years documented experience and approved by manufacturer.

**1.06 FIELD CONDITIONS**

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a one year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Gunnable and Pourable Sealants:
  - 1. Adhesives Technology Corporation: [www.atc.ws](http://www.atc.ws).
  - 2. BASF Construction Chemicals-Building Systems: [www.buildingsystems.basf.com](http://www.buildingsystems.basf.com).
  - 3. Bostik Inc: [www.bostik-us.com](http://www.bostik-us.com).
  - 4. ARDEX Engineered Cements: [www.ardexamericas.com](http://www.ardexamericas.com).
  - 5. Dow Corning Corporation: [www.dowcorning.com](http://www.dowcorning.com).
  - 6. Hilti, Inc: [www.us.hilti.com](http://www.us.hilti.com).
  - 7. Momentive Performance Materials, Inc (formerly GE Silicones): [www.momentive.com](http://www.momentive.com).
  - 8. Pecora Corporation: [www.pecora.com](http://www.pecora.com).

9. The QUIKRETE Companies: [www.quikrete.com](http://www.quikrete.com).
10. Tremco Global Sealants: [www.tremcosealants.com](http://www.tremcosealants.com).
11. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
12. Sika Corporation: [www.usa-sika.com](http://www.usa-sika.com).
13. W.R. Meadows, Inc: [www.wrmeadows.com](http://www.wrmeadows.com).
14. Substitutions: See Section 01 6000 - Product Requirements.

- B. Preformed Compressible Foam Sealers:
  1. EMSEAL Joint Systems, Ltd: [www.emseal.com](http://www.emseal.com).
  2. Sandell Manufacturing Company, Inc: [www.sandellmfg.com](http://www.sandellmfg.com).
  3. Dayton Superior Corporation: [www.daytonsuperior.com](http://www.daytonsuperior.com).
  4. Tremco Global Sealants: [www.tremcosealants.com](http://www.tremcosealants.com).
  5. Substitutions: See Section 01 6000 - Product Requirements.

## 2.02 SEALANTS

- A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
- B. Type 2 - Concrete Paving Joint Sealant: Polyurethane, self-leveling; ASTM C920, Class 25, Uses T, I, M and A; single component.
  1. Color: Gray.
  2. Applications: Use for:
    - a. Joints in sidewalks and vehicular paving.
  3. Products:
    - a. Bostik Inc; [www.bostik-us.com](http://www.bostik-us.com).
    - b. Pecora Corporation; NR-201 Self-Leveling Traffic and Loop Sealant: [www.pecora.com](http://www.pecora.com).
    - c. BASF Construction Chemicals-Building Systems; [www.buildingsystems.basf.com](http://www.buildingsystems.basf.com).
    - d. Sherwin-Williams Company; Stampede 1SL Polyurethane Sealant: [www.sherwin-williams.com](http://www.sherwin-williams.com).
    - e. Sherwin-Williams Company; Stampede 2SL Polyurethane Sealant: [www.sherwin-williams.com](http://www.sherwin-williams.com).
    - f. Substitutions: See Section 01 6000 - Product Requirements.

## 2.03 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
- C. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

### 3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.

### 3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

- B. Perform installation in accordance with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.

**3.04 CLEANING**

- A. Clean adjacent soiled surfaces.

**3.05 PROTECTION**

- A. Protect sealants until cured.

**END OF SECTION**

**SECTION 08 3100**  
**ACCESS DOORS AND PANELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wall access door and frame units.

**1.02 RELATED REQUIREMENTS**

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- C. Manufacturer's Installation Instructions: Indicate installation requirements.

**PART 2 PRODUCTS**

**2.01 ACCESS DOOR AND PANEL APPLICATIONS**

- A. Walls, Unless Otherwise Indicated:
  - 1. Material: Stainless steel.
  - 2. Size: 24"W x 20"H (field verify) inches, unless otherwise indicated.
  - 3. Standard duty, hinged door.
  - 4. Tool-operated spring or cam lock; no handle.
  - 5. In Masonry: Surface mounted frame with door surface flush with frame surface.

**2.02 WALL AND CEILING UNITS**

- A. Manufacturers:
  - 1. Acudor Products Inc: [www.acudor.com](http://www.acudor.com).
    - a. Units in Walls, Unless Otherwise Indicated: UF-5000
  - 2. Babcock-Davis: [www.babcockdavis.com](http://www.babcockdavis.com).
  - 3. Cendrex, Inc: [www.cendrex.com](http://www.cendrex.com).
    - a. Units in Walls, Unless Otherwise Indicated: Cendrex AHD, flush door, face frame, hinged.
  - 4. Substitutions: See Section 01 6000 - Product Requirements.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that rough openings are correctly sized and located.

**3.02 INSTALLATION**

- A. Install units in accordance with manufacturer's instructions.
- B. Install frames plumb and level in openings. Secure rigidly in place.
- C. Position units to provide convenient access to the concealed work requiring access.

**END OF SECTION**

**SECTION 08 3613  
SECTIONAL DOORS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Weather-stripping at Overhead sectional doors

**1.02 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Show component construction and anchorage method.
- C. Manufacturer's Installation Instructions: Include any special procedures required by project conditions.

**1.03 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years of experience.

**1.04 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for warranty requirements.

**PART 2 PRODUCTS**

**2.01 DOOR COMPONENTS**

- A. Provide complete perimeter jamb-mounted weather stripping, 2" vinyl stop w/weatherseal. One piece, full length. Color: As selected by Architect from manufacturer's standard range.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that existing weatherstripping has been removed and wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

**3.02 PREPARATION**

- A. Prepare opening to permit correct installation of weatherstripping.

**3.03 INSTALLATION**

- A. Install weather stripping.

**3.04 PROTECTION**

- A. Protect installed products from damage during subsequent construction.
- B. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

**END OF SECTION**

**SECTION 09 9000**  
**PAINTING AND COATING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
  - 1. Exposed surfaces of steel lintels and ledge angles.
  - 2. Downspout fasteners, any exposed sheet metal due to gutter and downspout modification.
- D. Do Not Paint or Finish the Following Items:
  - 1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
  - 2. Items indicated to receive other finishes.
  - 3. Items indicated to remain unfinished.
  - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
  - 5. Non-metallic roofing and flashing.
  - 6. Stainless steel, anodized aluminum, bronze, terne, and lead items.
  - 7. Glass.
  - 8. Concealed pipes, ducts, and conduits.

**1.02 REFERENCE STANDARDS**

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.

**1.03 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. If proposal of substitutions is allowed under submittal procedures, explanation of all substitutions proposed.
- C. Samples: Submit two paper chip samples, 8 1/2" X 11" inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
- D. Manufacturer's Instructions: Indicate special surface preparation procedures.
- E. Maintenance Materials: Furnish the following for Iowa Department of Transportation's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.
  - 2. Extra Paint and Coatings: 1 gallon of each color; store where directed.
  - 3. Label each container with color in addition to the manufacturer's label.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience.

### **1.05 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 and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

### **1.06 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.
- C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

## **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. Behr Process Corporation: [www.behr.com](http://www.behr.com).
  - 2. Diamond Vogel Paints: [www.diamondvogel.com](http://www.diamondvogel.com).
  - 3. Duron, Inc: [www.duron.com](http://www.duron.com).
  - 4. Glidden Professional, a product of PPG Architectural Coatings: [www.gliddenprofessional.com](http://www.gliddenprofessional.com).
  - 5. Benjamin Moore & Co: [www.benjaminmoore.com](http://www.benjaminmoore.com).
  - 6. PPG Architectural Finishes, Inc: [www.ppgaf.com](http://www.ppgaf.com).
  - 7. Pratt & Lambert Paints: [www.prattandlambert.com](http://www.prattandlambert.com).
  - 8. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
- C. Primer Sealers: Same manufacturer as top coats.
- D. 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: As follows unless other primer is required or recommended by manufacturer of top coats; where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
  - 1. Steel, Uncoated: Anti-Corrosive Alkyd Primer for Metal; MPI #79.
  - 2. Steel, Uncoated: Interior Rust-Inhibitive Water Based Primer; MPI #107.
  - 3. Steel -- Shop Primer: Interior/Exterior Quick Dry Alkyd Primer for Metal; MPI #76.
  - 4. Galvanized Steel: Interior Water Based Galvanized Primer; MPI #134.

5. Galvanized Steel: Cementitious primer.
  6. Aluminum: Interior/Exterior Quick Dry Primer for Aluminum; MPI #95.
  7. Products:
    - a. Behr Premium Plus Exterior Multi-Surface Primer and Sealer [No. 436]. (MPI #3, 107, 134)
- C. Volatile Organic Compound (VOC) Content:
1. Provide coatings that comply with the most stringent requirements specified in the following:
    - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
  2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Colors: To be selected from manufacturer's full range of available colors.
1. Selection to be made by Architect after award of contract.

### **2.03 PAINT SYSTEMS - EXTERIOR**

- A. Paint E-OP - All Exterior Surfaces Indicated to be Painted, Unless Otherwise Indicated: Including primed metal.
1. Preparation as specified by manufacturer.
  2. Two top coats and one coat primer recommended by manufacturer.
  3. Primer(s): As recommended by manufacturer of top coats.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin application of coatings until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. Test shop-applied primer for compatibility with subsequent cover materials.

### **3.02 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 repair existing coatings that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- G. Aluminum Surfaces to be Painted: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- H. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- I. Corroded Steel and Iron Surfaces to be Painted: Prepare using at least SSPC-SP 2 (hand tool cleaning) or SSPC-SP 3 (power tool cleaning) followed by SSPC-SP 1 (solvent cleaning).
- J. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand or power tool wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of

phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.

- K. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

### **3.03 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.
- D. Sand metal surfaces lightly between coats to achieve required finish.
- E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection.

### **3.05 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

### **3.06 PROTECTION**

- A. Protect finished coatings until completion of project.
- B. Touch-up damaged coatings after Substantial Completion.

**END OF SECTION**

**SECTION 22 1005  
PLUMBING PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Pipe, pipe fittings, valves, and connections for piping systems.
  - 1. Domestic water.
  - 2. Storm water.
  - 3. Gas.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2316.13 - Trenching.

**1.03 REFERENCE STANDARDS**

- A. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; The American Society of Mechanical Engineers.
- B. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers (ANSI B16.18).
- C. ASME B16.22 - Wrought Copper and Copper Alloy Solder Joint Pressure Fittings; The American Society of Mechanical Engineers.
- D. ASME B31.9 - Building Services Piping; The American Society of Mechanical Engineers (ANSI/ASME B31.9).
- E. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications; The American Society of Mechanical Engineers.
- F. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- G. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
- H. ASTM B32 - Standard Specification for Solder Metal.
- I. ASTM B88 - Standard Specification for Seamless Copper Water Tube.
- J. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric).
- K. ASTM B813 - Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube.
- L. ASTM B828 - Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings.
- M. MSS SP-110 - Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends; Manufacturers Standardization Society of the Valve and Fittings Industry, Inc..
- N. NFPA 54 - National Fuel Gas Code; National Fire Protection Association.
- O. NFPA 58 - Liquefied Petroleum Gas Code; National Fire Protection Association.
- P. NSF 61 - Drinking Water System Components - Health Effects.
- Q. NSF 372 - Drinking Water System Components - Lead Content.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

**1.05 QUALITY ASSURANCE**

- A. Perform work in accordance with applicable codes.

- B. Welding Materials and Procedures: Conform to ASME BPVC-IX and applicable state labor regulations.
- C. Welder Qualifications: Certified in accordance with ASME BPVC-IX.
- D. Identify pipe with marking including size, ASTM material classification, ASTM specification, potable water certification, water pressure rating.

#### **1.06 REGULATORY REQUIREMENTS**

- A. Conform to applicable code for installation of backflow prevention devices.
- B. Provide certificate of compliance from authority having jurisdiction indicating approval of installation of backflow prevention devices.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

#### **1.08 FIELD CONDITIONS**

- A. Verify field measurements prior to fabrication.

### **PART 2 PRODUCTS**

#### **2.01 GENERAL REQUIREMENTS**

- A. Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

#### **2.02 WATER PIPING, ABOVE GRADE**

- A. Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).
  1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
  2. Joints: ASTM B32, alloy Sn95 solder.
  3. All piping extensions to match existing materials and sizes.

#### **2.03 STORM WATER PIPING, BURIED WITHIN 5 FEET OF BUILDING**

- A. Plastic Pipe: ASTM D2729. polyvinyl chloride (PVC) material; inside nominal diameter of 8, 10 and 12 inches, bell and spigot solvent sealed ends.
  1. Fittings: PVC
  2. Joints: ASTM D2855, solvent weld with ASTM D2564 solvent cement.
  3. All piping extensions to match existing materials and sizes.

#### **2.04 NATURAL GAS PIPING, ABOVE GRADE**

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
  1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
  2. Joints: NFPA 54, threaded or welded to ASME B31.1.
  3. All piping extensions to match existing materials and sizes.

#### **2.05 PROPANE GAS PIPING, ABOVE GRADE**

- A. Steel Pipe: ASTM A53/A53M Schedule 40 black.
  1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
  2. Joints: NFPA 58, threaded or welded to ASME B31.1.
  3. All piping extensions to match existing materials and sizes.

#### **2.06 FLANGES, UNIONS, AND COUPLINGS**

- A. Unions for Pipe Sizes 3 Inches and Under:
  1. Ferrous pipe: Class 150 malleable iron threaded unions.
  2. Copper tube and pipe: Class 150 bronze unions with soldered joints.
  3. All piping extensions to match existing materials and sizes.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

### **3.02 PREPARATION**

- A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
- B. Remove scale and dirt, on inside and outside, before assembly.
- C. Prepare piping connections to equipment with flanges or unions.

### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- C. Install piping to maintain headroom, conserve space, and not interfere with use of space.
- D. Group piping whenever practical at common elevations.
- E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- F. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- G. Provide support for utility meters in accordance with requirements of utility companies.
- H. Install water piping to ASME B31.9.
- I. Install fuel oil piping to ASME B31.9.
- J. Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.
- K. Install storm sewer pipe, fittings, and accessories with Iowa DOT SSHBC - Section 2416.0. Seal joints watertight.

### **3.04 TOLERANCES**

- A. Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/4 inch per foot slope.
- B. Water Piping: Slope at minimum of 1/32 inch per foot and arrange to drain at low points.

### **3.05 PROTECTION OF FINISHED WORK**

- A. Repair or replace pipe that is damaged or displaced from construction operations.

**END OF SECTION**

**SECTION 23 3100**  
**HVAC DUCTS AND CASINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Metal ductwork.
- B. Duct cleaning.

**1.02 REFERENCE STANDARDS**

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- D. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric].
- E. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; National Fire Protection Association.
- F. SMACNA (LEAK) - HVAC Air Duct Leakage Test Manual; Sheet Metal and Air Conditioning Contractors' National Association.
- G. SMACNA (DCS) - HVAC Duct Construction Standards; Sheet Metal and Air Conditioning Contractors' National Association.
- H. UL 181 - Standard for Factory-Made Air Ducts and Air Connectors; Underwriters Laboratories Inc..

**1.03 PERFORMANCE REQUIREMENTS**

- A. No variation of duct configuration of sizes permitted except by written permission. Size round duct installed in place of rectangular ducts in accordance with ASHRAE table of equivalent rectangular and round ducts.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for duct materials.
- C. Project Record Documents: Record actual locations of ducts and duct fittings. Record changes in fitting location and type. Show additional fittings used.

**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.
- B. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum 3 years of documented experience.

**1.06 REGULATORY REQUIREMENTS**

- A. Construct ductwork to NFPA 90A standards.

**1.07 FIELD CONDITIONS**

- A. Do not install duct sealants when temperatures are less than those recommended by sealant manufacturers.
- B. Maintain temperatures within acceptable range during and after installation of duct sealants.

**PART 2 PRODUCTS**

**2.01 DUCT ASSEMBLIES**

- A. Regulatory Requirements: Construct ductwork to NFPA 90A standards.
- B. All Ducts: Galvanized steel, unless otherwise indicated.

- C. Outside Air Intake: 1/2 inch w.g. pressure class, galvanized steel.

## **2.02 MATERIALS**

- A. Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.
- B. Aluminum for Ducts: ASTM B209 (ASTM B209M); aluminum sheet, alloy 3003-H14. Aluminum Connectors and Bar Stock: Alloy 6061-T651 or of equivalent strength.
- C. General Exhaust: 1/2 inch w.g. pressure class, aluminum.

## **2.03 DUCTWORK FABRICATION**

- A. Fabricate and support in accordance with SMACNA (DCS) and as indicated.
- B. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.
- C. Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).

## **2.04 MANUFACTURED DUCTWORK AND FITTINGS**

- A. Manufacture in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible. Provide duct material, gages, reinforcing, and sealing for operating pressures indicated.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install, support, and seal ducts in accordance with SMACNA (DCS).
- B. Install in accordance with manufacturer's instructions.
- C. During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- D. Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- E. Install and seal metal and flexible ducts in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible.
- F. Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.
- G. Use double nuts and lock washers on threaded rod supports.

### **3.02 SCHEDULES**

- A. Ductwork Material:
  - 1. General Exhaust: Steel, Aluminum, Type T. Match existing.
- B. Ductwork Pressure Class:
  - 1. General Exhaust: 1/2 inch.

**END OF SECTION**

## SECTION 26 0534

### CONDUIT

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Conduit fittings and conduit bodies.

##### 1.02 REFERENCE STANDARDS

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC).
- B. ANSI C80.3 - American National Standard for Steel Electrical Metallic Tubing (EMT).
- C. ANSI C80.5 - American National Standard for Electrical Rigid Aluminum Conduit (ERAC).
- D. NECA 1 - Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association.
- E. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT); National Electrical Contractors Association.
- F. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; National Electrical Manufacturers Association (ANSI/NEMA FB 1).
- G. NEMA RN 1 - Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal Conduit; National Electrical Manufacturers Association.
- H. NEMA TC 2 - Electrical Polyvinyl Chloride (PVC) Conduit; National Electrical Manufacturers Association.
- I. NEMA TC 3 - Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; National Electrical Manufacturers Association.
- J. NFPA 70 - National Electrical Code; National Fire Protection Association.

##### 1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittals procedures.
- B. Project Record Documents: Record actual routing for conduits 1/2 trade size and larger.

##### 1.04 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

##### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.
- B. Protect conduit from corrosion and entrance of debris by storing above grade. Provide appropriate covering.
- C. Protect PVC conduit from sunlight.

#### PART 2 PRODUCTS

##### 2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, match existing. Where conduit type for a particular application is not specified, contact architect.

## 2.02 CONDUIT REQUIREMENTS

- A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.
- B. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) or testing firm acceptable to authority having jurisdiction as suitable for the purpose intended.
- C. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that field measurements are as shown on drawings.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify routing and termination locations of conduit prior to rough-in.
- E. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in a neat and workmanlike manner in accordance with NECA 1.
- C. Conduit Support:
  - 1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction.
  - 2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- D. Connections and Terminations:
  - 1. Use suitable adapters where required to transition from one type of conduit to another.
  - 2. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
  - 3. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- E. Penetrations:
  - 1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
  - 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
  - 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
  - 4. Conceal bends for conduit risers emerging above ground.
  - 5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
  - 6. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.
  - 7. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals.
  - 8. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified.

- F. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
  - 1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
  - 2. Where conduits are subject to earth movement by settlement or frost.
- G. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
  - 1. Where conduits pass from outdoors into conditioned interior spaces.
  - 2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
- H. Provide grounding and bonding.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Correct deficiencies and replace damaged or defective conduits.

### **3.04 ADJUSTING**

- A. Install conduit to preserve fire resistance rating of partitions and other elements.
- B. Adjust flush mounting outlets to make front flush with finished wall material.
- C. Install knockout closures in unused openings in boxes.

### **3.05 CLEANING**

- A. Section 01 7000 - Execution Requirements: Final cleaning.
- B. Clean interior of conduits to remove moisture and foreign matter.
- C. Clean exposed surfaces and restore finish.

### **3.06 PROTECTION**

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

**END OF SECTION**

## SECTION 31 2316.13

### TRENCHING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Backfilling and compacting for utilities outside the building to utility main connections.
- B. Excavating trenches for utilities from 5 feet outside building to utility service.
- C. Compacted fill from top of utility bedding to subgrade elevations.

##### 1.02 REFERENCES

- A. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- B. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
- C. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method.
- D. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

##### 1.03 DEFINITIONS

- A. Utility: Any buried pipe, duct, conduit, or cable.

##### 1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Excavation Protection Plan: Describe sheeting, shoring, and bracing materials and installation required to protect excavations and adjacent structures and property; include structural calculations to support plan.
- C. Product Data: Submit data for geotextile fabric indicating fabric and construction.
- D. Materials Source: Submit name of imported fill materials suppliers.
- E. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.
- F. Compaction Density Test Reports.

##### 1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with Iowa Department of Transportation: Standard Specifications for Highway and Bridge Construction - Series 2001.

##### 1.06 QUALIFICATIONS

- A. Prepare excavation protection plan under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of Iowa.

#### PART 2 PRODUCTS

##### 2.01 ACCESSORIES

- A. Geotextile Fabric: Non-biodegradable, woven.
  - 1. Alkzo Nobel Geosynthetic Co.
  - 2. Huesker, Inc.
  - 3. TC Mirafi
  - 4. Tenax Corp.
  - 5. Tensar Earth Technologies, Inc.
  - 6. Substitutions: Section 01600 - Product Requirements.

##### 2.02 FILL MATERIALS

- A. General Fill: Conforming to State of Iowa Highway Department standard.

## **PART 3 EXECUTION**

### **3.01 LINES AND GRADES**

- A. Lay pipes to lines and grades indicated on Drawings.
  - 1. Architect/Engineer reserves right to make changes in lines, grades, and depths of utilities when changes are required for Project conditions.
- B. Use laser-beam instrument with qualified operator to establish lines and grades.

### **3.02 PREPARATION**

- A. Contact Iowa One Call location service at (800) 292-8989 not less than three working days before performing Work.
  - 1. Request underground utilities to be located and marked within and surrounding construction areas.
- B. Identify required lines, levels, contours, and datum locations.
- C. Locate, identify, and protect utilities that remain and protect from damage.
- D. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- E. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- F. Notify utility company to remove and relocate utilities.
- G. Protect bench marks, survey control points, existing structures, and paving from excavating equipment and vehicular traffic.
- H. Do not interfere with 45 degree bearing splay of foundations.
- I. Protect plants, lawns, and other features to remain.
- J. Cut trenches wide enough to allow inspection of installed utilities.
- K. Hand trim excavations. Remove loose matter.
- L. Establish temporary traffic control and detours when trenching is performed in public right-of-way. Relocate controls and reroute traffic as required during progress of Work.
- M. Remove lumped subsoil, boulders, and rock up to 1/6 cu yd measured by volume.

### **3.03 TRENCHING**

- A. Remove excavated material that is unsuitable for re-use from site.
- B. Excavate subsoil required for utilities to utility service.
- C. Remove excess excavated material from site.
- D. Do not advance open trench more than 200 feet ahead of installed pipe.
- E. Remove lumped subsoil, boulders, and rock up of 1/6 cubic yard, measured by volume. Remove larger material as specified in Section 02316.
- F. Excavate bottom of trenches maximum 2 feet wider than outside diameter of pipe.
- G. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and utilities.
- H. Do not interfere with 45 degree bearing splay of foundations.
- I. When Project conditions permit, slope side walls of excavation starting 2 feet above top of pipe. When side walls can not be sloped, provide sheeting and shoring to protect excavation as specified in this section.
- J. When subsurface materials at bottom of trench are loose or soft, notify Architect/Engineer, and request instructions.
- K. Cut out soft areas of subgrade not capable of compaction in place. Backfill with Fill Type S1 and compact to density equal to or greater than requirements for subsequent backfill material.
- L. Trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.

- M. Correct areas over excavated areas with compacted backfill as specified for authorized excavation or replace with fill concrete as directed by Architect/Engineer.
- N. Stockpile excavated material in area designated on site in accordance with Section 02055.

### **3.04 SHEETING AND SHORING**

- A. Sheet, shore, and brace excavations to prevent danger to persons, structures and adjacent properties and to prevent caving, erosion, and loss of surrounding subsoil.
- B. Support trenches more than 5 feet deep excavated through unstable, loose, or soft material. Provide sheeting, shoring, bracing, or other protection to maintain stability of excavation.
- C. Design sheeting and shoring to be removed at completion of excavation work.
- D. Repair damage caused by failure of the sheeting, shoring, or bracing and for settlement of filled excavations or adjacent soil.
  - 1. Repair damage to new and existing Work from settlement, water or earth pressure or other causes resulting from inadequate sheeting, shoring, or bracing.
- E. Cut trenches sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.

### **3.05 PREPARATION FOR UTILITY PLACEMENT**

- A. Excavate bottom of trenches maximum 2 feet wider than outside diameter of pipe.
- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- C. Excavate trenches to depth indicated on Drawings. Provide uniform and continuous bearing and support for bedding material and utilities.
- D. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- E. Until ready to backfill, maintain excavations and prevent loose soil from falling into excavation.
- F. Do not interfere with 45 degree bearing splay of foundations.

### **3.06 BACKFILLING**

- A. When subsurface materials at bottom of trench are loose or soft, notify Architect/Engineer, and request instructions.
- B. Backfill to contours and elevations indicated using unfrozen materials.
- C. Fill up to subgrade elevations unless otherwise indicated.
- D. Cut out soft areas of subgrade not capable of compaction in place. Backfill with Fill Type S1 and compact to density equal to or greater than requirements for subsequent backfill material.
- E. Employ a placement method that does not disturb or damage other work.
- F. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- G. Stockpile excavated material in area designated on site in accordance with Section 02055.
- H. Maintain optimum moisture content of fill materials to attain required compaction density.
- I. Slope grade away from building minimum 2 inches in 10 ft, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- J. Correct areas that are over-excavated.
  - 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.
- K. Compaction Density Unless Otherwise Specified or Indicated:
  - 1. Under paving, slabs-on-grade, and similar construction: 97 percent of maximum dry density.
  - 2. At other locations: 95 percent of maximum dry density.
- L. Reshape and re-compact fills subjected to vehicular traffic.
- M. Do not leave more than 50 feet of trench open at end of working day.

### **3.07 BEDDING AND FILL AT SPECIFIC LOCATIONS**

- A. Protect open trench to prevent danger to the public.
  - 1. Over Subdrainage Piping at Foundation Perimeter and Under Slabs:
    - a. Drainage fill and geotextile fabric.
    - b. Cover drainage fill with general fill.
    - c. Compact to 95 percent of maximum dry density.
- B. TOLERANCES
  - 1. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.
  - 2. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.
- C. FIELD QUALITY CONTROL
  - 1. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.
- D. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D3017, or ASTM D6938.
  - 1. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D3017 for moisture testing.
  - 2. If tests indicate work does not meet specified requirements, remove work, replace and retest.
  - 3. Perform laboratory material tests in accordance with Iowa DOT SSHBC - Series 2001
- E. CLEANING
  - 1. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

**END OF SECTION**

**SECTION 32 1123**  
**AGGREGATE & AGGREGATE BASE COURSE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Aggregate Base Course.

**1.02 REFERENCE STANDARDS**

- A. AASHTO M 147 - Standard Specification for Materials for Aggregate and Soil-Aggregate Subbase, Base and Surface Courses; American Association of State Highway and Transportation Officials.
- B. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54 kg (10-lb) Rammer and a 457 mm (18 in.) Drop; American Association of State Highway and Transportation Officials
- C. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
- D. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)).
- E. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN m/m<sup>3</sup>)).
- F. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
- G. ASTM D4318 - Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Materials Sources: Submit name of imported materials source.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements

**1.04 QUALITY ASSURANCE**

- A. Furnish each aggregate material from single source throughout the Work.
- B. Perform Work in accordance Iowa DOT SSHBC Series 2012.
- C. Maintain one copy of document on site.

**PART 2 PRODUCTS**

**2.01 COARSE AGGREGATE MATERIALS**

- A. Coarse Aggregate : (Gravel) Choke stone conforming to Iowa DOT SSHBC - Series 2012, Section 4122.02.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify substrate has been inspected, gradients and elevations are correct, and is dry.

**3.02 PREPARATION**

- A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place aggregate on soft, muddy, or frozen surfaces.

**3.03 AGGREGATE PLACEMENT**

- A. Spread aggregate over prepared substrate to a total compacted thickness of 6 inches.
- B. Level and contour surfaces to elevations and gradients indicated.
- C. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

### **3.04 INSTALLATION**

- A. Spread aggregate over prepared substrate to a total compacted thickness of 6 inches.
- B. Level and contour surfaces to elevations and gradients indicated.
- C. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- D. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

### **3.05 TOLERANCES**

- A. Scheduled Compacted Thickness: Within 1/4 inch.

### **3.06 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.

### **3.07 CLEANING**

- A. Leave unused materials in a neat, compact stockpile.

### **3.08 STOCKPILING**

- A. Stockpile materials on site at locations designated by Architect/Engineer.
- B. Stockpile in sufficient quantities to meet Project schedule and requirements.
- C. Separate different aggregate materials with dividers or stockpile individually to prevent mixing.
- D. Direct surface water away from stockpile site to prevent erosion or deterioration of materials.
- E. Stockpile unsuitable materials on impervious material and cover to prevent erosion and leaching, until disposed of.

### **3.09 STOCKPILE CLEANUP**

- A. Leave unused materials in neat, compact stockpile.
- B. When borrow area is indicated, leave area in clean and neat condition. Grade site surface to prevent free standing surface water.

### **3.10 SCHEDULES**

- A. Around entire perimeter of building that is not paved.
  - 1. Place and compact continuous rock, 2'-0" wide around perimeter.

**END OF SECTION**

**SECTION 32 1313  
CONCRETE PAVING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Concrete sidewalks, integral curbs, and parking areas.

**1.02 RELATED REQUIREMENTS**

- A. Section 32 1123 - Aggregate & Aggregate Base Course: gravel base course.

**1.03 REFERENCE STANDARDS**

- A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International.
- B. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International.
- C. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International.
- D. ACI 305R - Hot Weather Concreting; American Concrete Institute International.
- E. ACI 306R - Cold Weather Concreting; American Concrete Institute International.
- F. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.
- G. ASTM C33/C33M - Standard Specification for Concrete Aggregates.
- H. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
- I. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete.
- J. ASTM C150/C150M - Standard Specification for Portland Cement.
- K. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method.
- L. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
- M. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing.
- N. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
- O. ASTM D1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

**PART 2 PRODUCTS**

**2.01 PAVING ASSEMBLIES**

- A. Comply with applicable requirements of ACI 301.
- B. Concrete Sidewalks and Median Barrier: 3,000 psi 28 day concrete, 4 inches thick, buff color Portland cement, exposed aggregate finish.
- C. Parking Area Pavement: 4,000 psi 28 day concrete, 5 inches thick, 6 x 6 - W2.9 x W2.9 mesh reinforcement, wood float finish.

**2.02 FORM MATERIALS**

- A. Form Materials: Conform to ACI 301.

- B. Joint Filler: Preformed; non-extruding bituminous type (ASTM D1751) or sponge rubber or cork (ASTM D1752).
  - 1. Thickness: 1/2 inch.

### **2.03 REINFORCEMENT**

- A. Reinforcing Steel: ASTM A615/A615M, Grade 40 - 40,000 psi yield strength; deformed billet steel bars; unfinished.
- B. Dowels: ASTM A615/A615M, Grade 40 - 40,000 psi yield strength; deformed billet steel bars; unfinished finish.
- C. Accessories:
  - 1. Tie Wire: Annealed, minimum 16 gage.
  - 2. Charis, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

### **2.04 CONCRETE MATERIALS**

- A. Obtain cementitious materials from same source throughout.
- B. Cement: ASTM C150/C150M Normal - Type I portland type, grey color.
- C. Fine and Coarse Mix Aggregates: ASTM C33/C33M.
- D. Fly Ash: ASTM C618, Class C or F.
- E. Calcined Pozzolan: ASTM C618, Class N.
- F. Silica Fume: ACI 211.1
- G. Water: Clean, and not detrimental to concrete.

### **2.05 ACCESSORIES**

### **2.06 CONCRETE MIX DESIGN**

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
  - 1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- C. Concrete Properties:
  - 1. Compressive strength, when tested in accordance with ASTM C39/C39M at 28 days; 4000 psi.
    - a. Add air-entraining agent to normal weight concrete mix for work exposed to exterior.
    - b. Slump may be increased for improved workability to a maximum of 5 inches by adding a mid-range water reducer at the ready-mix plant. Concrete shall not be less than 4 inches.
    - c. No water shall be added to the mix on site.

### **2.07 MIXING**

- A. Transit Mixers: Comply with ASTM C94/C94M.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify compacted subgrade is acceptable and ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.

### **3.02 SUBBASE**

- A. See Section 32 1123 for construction of base course for work of this Section.

### **3.03 PREPARATION**

- A. Moisten base to minimize absorption of water from fresh concrete.

- B. Notify Architect minimum 24 hours prior to commencement of concreting operations.

### **3.04 FORMING**

- A. Place and secure forms to correct location, dimension, profile, and gradient.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint filler vertical in position, in straight lines. Secure to formwork during concrete placement.

### **3.05 REINFORCEMENT**

- A. Place reinforcement at top of slabs-on-grade.
- B. Place dowels to achieve pavement and curb alignment as detailed.
- C. Maintain concrete cover around reinforcing of slabs on fill at 2 inch.

### **3.06 COLD AND HOT WEATHER CONCRETING**

- A. Follow recommendations of ACI 305R when concreting during hot weather.
- B. Follow recommendations of ACI 306R when concreting during cold weather.
- C. Do not place concrete when base surface temperature is less than 40 degrees F, or surface is wet or frozen.

### **3.07 PLACING CONCRETE**

- A. Place concrete in accordance with State of Iowa Highways standards.
- B. Ensure reinforcement, inserts, embedded parts, formed joints are not disturbed during concrete placement.

### **3.08 JOINTS**

- A. Align curb, gutter, and sidewalk joints.
- B. Place 3/8 inch wide expansion joints at 20 foot intervals and to separate paving from vertical surfaces and other components .
  - 1. Form joints with joint filler extending from bottom of pavement to within 1/2 inch of finished surface.
  - 2. Secure to resist movement by wet concrete.
- C. Provide scored joints.
  - 1. At 3 feet intervals.
  - 2. Between sidewalks and curbs.
  - 3. Between curbs and pavement.
- D. Saw cut contraction joints 3/16 inch wide at an optimum time after finishing. Cut 1/3 into depth of slab.

### **3.09 FINISHING**

- A. Area Paving: Light broom, texture perpendicular to pavement direction.
- B. Sidewalk Paving: Light broom, texture perpendicular to direction of travel with troweled and radiused edge 1/4 inch radius.

### **3.10 TOLERANCES**

- A. Maximum Variation of Surface Flatness: 1/4 inch in 10 ft.
- B. Maximum Variation From True Position: 1/4 inch.

### **3.11 PROTECTION**

- A. Immediately after placement, protect pavement from premature drying, excessive hot or cold temperatures, and mechanical injury.
- B. Do not permit pedestrian traffic over pavement for 7 days minimum after finishing.

**END OF SECTION**

## SECTION 32 9219

### SEEDING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Seeding, mulching and fertilizer.
- B. Maintenance.

##### 1.02 DEFINITIONS

- A. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

##### 1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

##### 1.04 REGULATORY REQUIREMENTS

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

##### 1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

#### PART 2 PRODUCTS

##### 2.01 SEED MIXTURE

- A. Seed Mixture:
  - 1. Fescue, tall (Fineleaf-Revel, Olympic or equiv): 70 percent.
  - 2. Creeping Red Fescue Grass: 20 percent.
  - 3. Perennial Rye (Fineleaf Var-Pennfine, Derby, Manhattan or equiv): 10 percent.

##### 2.02 SOIL MATERIALS

- A. Topsoil: Excavated from site and free of weeds.

##### 2.03 ACCESSORIES

- A. Mulching Material: Dry cereal straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Fertilizer: 13-13-13; recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, to the following proportions:
  - 1. Nitrogen: 13 percent.
  - 2. Phosphoric Acid: 13 percent.
  - 3. Soluble Potash: 13 percent.
- C. Water: Clean, fresh and free of substances or matter that could inhibit vigorous growth of grass.
- D. Erosion Fabric: Jute matting, open weave.
- E. Stakes: Softwood lumber, chisel pointed.
- F. String: Inorganic fiber.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that prepared soil base is ready to receive the work of this Section.

### **3.02 FERTILIZING**

- A. Apply fertilizer at a rate of 600 lbs per acre.
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

### **3.03 SEEDING**

- A. Apply seed at a rate of 3 lbs per 1000 sq ft. Seed shall be drilled with native grass. Drill with no till attachment in April or May of following spring. May be drilled in Fall if construction allows.
- B. Do not seed areas in excess of that which can be mulched on same day.
- C. Planting Season: April - May or Oct - Nov 15.
- D. Do not sow immediately following rain, when ground is too dry, or during windy periods.
- E. Roll seeded area with roller not exceeding 112 lbs.
- F. Immediately following seeding and compacting, apply mulch to a thickness of 1/8 inches. Maintain clear of shrubs and trees.
- G. Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches of soil.
- H. Following germination, immediately re-seed areas without germinated seeds that are larger than 4 by 4 inches.

### **3.04 PROTECTION**

- A. Identify seeded areas with stakes and string around area periphery. Set string height to 36 inches. Space stakes at 48 inches.
- B. Cover seeded slopes where grade is 4 inches per foot or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling.
- C. Lay fabric smoothly on surface, bury top end of each section in 6 inch deep excavated topsoil trench. Provide 12 inch overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil.
- D. Secure outside edges and overlaps at 36 inch intervals with stakes.
- E. Lightly dress slopes with topsoil to ensure close contact between fabric and soil.
- F. At sides of ditches, lay fabric laps in direction of water flow. Lap ends and edges minimum 6 inches.

### **3.05 MAINTENANCE**

- A. Provide maintenance at no extra cost to Iowa Department of Transportation; Iowa Department of Transportation will pay for water.
- B. See Section 01 7000 - Execution Requirements, for additional requirements relating to maintenance service.
- C. Provide maintenance of seeded areas for three months from Date of Substantial Completion.
- D. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- E. Neatly trim edges and hand clip where necessary.
- F. Immediately remove clippings after mowing and trimming.
- G. Water to prevent grass and soil from drying out.

- H. Roll surface to remove minor depressions or irregularities.
- I. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- J. Immediately reseed areas that show bare spots.
- K. Protect seeded areas with warning signs during maintenance period.

**END OF SECTION**



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

Bidder \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## SEALED BID

LETTING DATE: June 17, 2015  
PROPOSAL NO: 14400  
PROPOSAL DESCRIPTION: Fairfield Maintenance Facility new exterior  
wall and insulation

Iowa Department of Transportation  
PURCHASING - SEALED BID PROPOSAL  
800 Lincoln Way  
Ames, IA 50010