

# PROJECT MANUAL

**PROJECT NAME:**

## DVA IVC Columbarium & Irrigation System Expansion

**PROJECT ADDRESS:**

34024 Veterans Memorial Dr  
Van Meter, Iowa 50003

**PROJECT DATE:** June 12, 2026

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**OWNER:**

Iowa Department of Administrative Services  
109 Southeast 13<sup>th</sup> Street  
Des Moines, Iowa 50319



**OWNER PROJECT NUMBER:** 9517.00

**OWNER REQUEST FOR BID NUMBER:** RFB951700-01

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**CONSTRUCTION MANAGER:**

DCI Group  
220 SE 6th Street, Suite 200  
Des Moines, Iowa 50309



**CONSTRUCTION MANAGER PROJECT NUMBER:** 9517.00

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**ARCHITECT:**

Shive Hattery  
4125 Westown Pkwy, Suite 100  
West Des Moines, Iowa 50226



**ARCHITECT PROJECT NUMBER:** 2250022390


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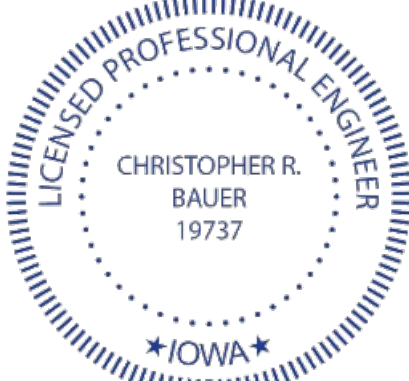
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SECTION 00 0105

CERTIFICATIONS PAGE

STATE OF IOWA

	<p>I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Architect under the laws of the State of Iowa.</p> <p><b>Printed or typed name:</b> Michael J. Kleene</p> <p><i>MJ Kleene</i> _____ <b>Date</b> 06/12/2026</p> <p><b>Signature</b></p> <p>License Expires: 6-30-2026</p> <p>Pages, Sheets, or Divisions covered by this Seal: Divisions 03, 04, 07, 10, and 12</p>
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	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p> <p><i>Chris Bauer</i> _____ <b>Date</b> 06/12/2026</p> <p><b>Signature</b></p> <p>Printed or typed name: Chris R. Bauer</p> <p>License Number: 19737</p> <p>My license renewal date is: 12-31-2027</p> <p>Pages, Sheets, or Divisions covered by this Seal: Division 32</p>
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END OF SECTION

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**END OF SECTION**

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O.	L101	LANDSCAPE PLAN
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**END OF SECTION**

**SECTION 00 0116**

**BID SUBMITTAL CHECKLIST**

**PART 1 - GENERAL**

**1.01 BID SUBMITTAL CHECKLIST**

- A. The Bidder is responsible to see that the bid is submitted online at [IMPACS Electronic Procurement System](#) on or before the due date and time specified. Late bids shall not be accepted.
- B. Bids shall be typewritten or in ink. All information requested shall accompany the bid. All blocks shall be completed. Errors shall be lined out and initialed.
- C. The right is reserved to reject any or all bids. The State may waive minor deficiencies or informalities in the best interest of the State of Iowa.
- D. A properly prepared and submitted bid document is the bidder's responsibility.
- E. Bids cannot be changed after the bid opening.
- F. In all cases, no verbal communications by any party will override written communications from the issuing office.
- G. The Bid Form shall be completed in full and signed and submitted by an officer of the bidder with authority to bind in a contract.
- H. If Bid Bond is called for, it shall accompany the Bid submission.
- I. If Non-discrimination Clause information is called for, it shall accompany the Bid submission.
- J. If Targeted Small Business Pre-bid Contact information is called for, it shall accompany the Bid submission.
- K. If Certificate of Site Visit form is called for, it shall accompany the Bid submission.

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

**SECTION 00 1113**

**NOTICE TO BIDDERS**

**RFB #951700-01**

The Iowa Department of Administrative Services will be receiving bids for at Iowa Veterans Cemetery, 3424 Veterans Memorial Dr. Van Meter, Iowa 50003.

The Iowa Department of Administrative Services anticipates that the Grant Approval Process will be completed by August 28<sup>th</sup> and NOI's sent to contractors by August 31<sup>st</sup>, 2026. Construction to begin on April 12<sup>th</sup>, 2027, and ends on June 7<sup>th</sup>, 2027.

Bids must be received no later than **2:00 pm, Thursday July 30<sup>th</sup>, 2026**. Late bids will not be considered. Bids shall be submitted on [IMPACS Electronic Procurement System](#). The Bid shall be accompanied by a Bid Security as set forth in the Instructions to Bidders in the amount of 5% of the total bid amount. Each bid shall be accompanied by a bid bond, cashier's check or a certified check drawn upon a solvent bank chartered under the laws of the United States of America.

**Bid Opening**

The time and place of bid opening will be held at the Microsoft Teams link below and Meeting ID: 226 794 715 744 483, Passcode: 2d9j9u8S at **3:30 pm, Thursday July 30<sup>th</sup>, 2026**

<https://teams.microsoft.com/meet/226794715744483?p=5V7st6ejZuEREhEobm>

The Iowa Department of Administrative Services reserves the right to reject any and all bids, and to waive irregularities and to accept a bid that is deemed in the best interest of the State of Iowa.

Bidders must comply with all affirmative action/equal employment opportunity provisions of the State of Iowa and the Federal Government.

This project is exempt from Iowa Sales Tax. Davis Bacon Wages **will** apply to this project.

Questions must be submitted by 11:00 am Monday July 20<sup>th</sup>, 2026, to the Issuing Officer.

Bidding documents may stipulate a specific product. Substitute product will be considered if a written request is received by 11:00 am Monday July 20<sup>th</sup>, 2026, prior to bid opening. Substitution requests will be considered for all products per Section 01 2500 Substitution Procedures, even if the specification does not include a statement such as "or equal," "equal to," "equivalent to," or "basis of design," unless otherwise noted.

An **optional** Pre-Bid meeting will be held on Thursday July 16<sup>th</sup>, 2026 at 10:30 am at Iowa Veterans Cemetery, Administrative Building conference room located at 34024 Veterans Memorial Dr. Van Meter, IA. This meeting is not mandatory but is highly recommended.

Bidding Documents, including drawing sheets bearing the project name IVC Columbarium and Irrigation Package 1, Dated 6/12/2026 and the Project Manual prepared by Shive Hattery dated 6/12/2026, may be obtained from Rapids Reproduction by visiting [www.rapidsrepro.com](http://www.rapidsrepro.com) or by calling (515) 251-3222 on Wednesday July, 1<sup>st</sup>, 2026.

For further information regarding this project contact:

Katelyn Howells – Issuing Officer

Phone: (515) 721-7856

E-Mail: [construction.procurement@das.iowa.gov](mailto:construction.procurement@das.iowa.gov)

**END OF SECTION**

**SECTION 00 2113**  
**INSTRUCTIONS TO BIDDERS**  
**RFB #951700-01**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Project Description
- B. Owner
- C. State Agency Representatives and Contacts
- D. Proposal Form and Submissions
- E. Taxes
- F. Alternate Bids
- G. Drawings
- H. Bid Security
- I. Due Date and Time for Receipt of Bids
- J. Commencement and Completion Date
- K. Site Visit
- L. Pre-bid Meeting
- M. Questions
- N. Addenda and Interpretations of the Contract Documents
- O. Substitutions
- P. Obligation of Bidder
- Q. Public Records and Requests for Confidential Treatment
- R. Withdrawal of Bid
- S. Bid Closing
- T. Basis of Bids
- U. Informalities/Rejection of Bids
- V. Consideration of Bids
- W. Preference
- X. Qualifications
- Y. Insurance
- Z. Form of Agreement between Owner and Contractor
- AA. Execution of Contract
- BB. Laws and Regulations
- CC. Contract Documents and Order of Precedence
- DD. Conditions of the Work
- EE. Subcontracts
- FF. Project Manual/Drawings

**1.02 PROJECT DESCRIPTION**

- A. Project Description: Construction of new columbarium's and Irrigation System improvements at the Iowa Veterans Cemetery.

**1.03 OWNER**

- A. State of Iowa, Department of Administrative Services, 109 SE 13th St, Des Moines, IA 50319

**1.04 STATE AGENCY REPRESENTATIVES AND CONTACTS**

- A. PURCHASING AGENT: Katelyn Howells – Issuing Officer, State of Iowa, Department of Administrative Services, Hoover State Office Building, 3<sup>rd</sup> floor, 1305 East Walnut Street, Des Moines, IA 50319-0105, Phone: 515-721-7856; email: [construction.procurement@iowa.gov](mailto:construction.procurement@iowa.gov)
- A. OWNER REPRESENTATIVE: Brad Tonyan, State of Iowa, Department of Administrative Services, 109 SE 13<sup>th</sup> Street, Des Moines, IA 50319, Phone: 515-360-7718; email: [brad.tonyan@iowa.gov](mailto:brad.tonyan@iowa.gov)
- A. ON-SITE COORDINATOR: David Haines, Facilities Director, 1301 Summit Street, Marshalltown, IA 50158, Phone: 641-750-6022; email: [david.haines@ivh.state.ia.us](mailto:david.haines@ivh.state.ia.us)
- B. CONSTRUCTION MANAGER CONTACT: Travis Hoyle, DCI Group, 220 SE 6<sup>th</sup> Street, Phone: 641-485-7057 email: [travish@dcigroup-us.com](mailto:travish@dcigroup-us.com)
- C. DESIGN PROFESSIONAL CONTACT: Chris Bauer, Shive Hattery, 4125 Westown Pkwy. #100, Phone: (515) 223-8104; email: [cbauer@shive-hattery.com](mailto:cbauer@shive-hattery.com)

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION**

**3.01 PROPOSAL FORM AND SUBMISSION**

- A. A properly prepared and submitted bid is the bidder's responsibility. Bids are to be made in accordance with these Instructions to Bidders and items included on the Bid submission. Failure to comply may be cause for rejection.
- B. The Bid is to consist of the required Bid information, together with the other information specified below to be submitted with the Bid, in which copies are included with these Bidding Documents.
  - 1. The total bid package submitted is required to include the following:
    - a. An online submission including:
      - 1) Required Bid Form (To be uploaded online)
      - 2) Required Non-discrimination Clause Information
      - 3) Required Targeted Small Business Pre-bid Contact Information
      - 4) Bid Security (documentation provided by Bidder) (To be uploaded online) (Required)
      - 5) Certification of Site Visit (To be uploaded online if Pre-Bid is Mandatory)
- C. Include the amount for performing all work described in the drawings and specifications for Base Bid and for each Alternate Bid requested.
- D. Acknowledge receipt of all Addenda issued, where so indicated on the Bid Form
- E. All required information to be submitted, by an officer of the company having authority to bind the company in a contract.
- F. Commencement of the work of the contract shall begin with the Contractor's receipt of a fully executed contract (signed by both parties).
- G. The Owner reserves the right to award a contract for Base Bid only, or for Base Bid in combination with any, or all, identified Alternate Bids. The Owner reserves the right to award a contract for individual Bid Packages, or any combination of Bid Packages. Each Bidder must comply with all of the General Requirements of the project and any requirements of the Project manual that apply to their scope of work.
- H. The company's Federal I.D. Number and the Iowa Contractors Registration Number shall be included in the Bid Form.
- I. Unless indicated otherwise, the Bid shall be for a single responsibility contract for all work as indicated on the Drawings and specified in the Project Manual, and shall be a lump sum amount. If no change in the Base Bid amount is required with respect to consideration of a particular Alternate Bid, enter "No Change" in the blank for that Alternate Bid.
- J. Where so requested, provide Unit Prices for the designated types of work and in the units specified, in which the Unit Prices would be used as adjustments to the quantities described in the instructions as the basis for the Base Bid and any Alternate Bid work. A Unit Price would be

applicable in the event the Owner should request additional work of that type beyond the extent and quantity that has been established as the scope of the work by graphic delineation and notations on the Drawings, or by otherwise stipulating in the Bidding Documents a numerical quantity of the work, for the Bidder's use in determining the lump sum bid amount for the Base Bid and any requested Alternate Bid containing such work. The Unit Prices shall also be used to adjust the Contract Amount for actual quantities of work involved when the work subject to Unit Price adjustment differs by being less in quantity than that contemplated by the original scope of work for the respective Base Bid or Alternate Bid.

- K. Completed State of Iowa Nondiscrimination Clause information and Subcontractor Targeted Small Business Enterprise Pre-Bid Contact Information, included in these Bidding Documents, are to accompany the Bid submission. Bidders shall comply with all affirmative action/equal opportunity provisions of State and Federal laws. The Owner seeks to provide opportunities for Targeted Small Businesses in accordance with the provisions of Chapter 73 of the Code of Iowa.
- L. All Bid information is to be submitted online. Any required Bid Security shall be provided, in the form and amount specified elsewhere in these Instructions to Bidders, at the time of submission of the Bid. When a site visit is mandatory as specified elsewhere in these Instructions to Bidders, and a Certificate of Site Visit is required to be submitted with the Bid as evidence of such visit having occurred for purposes of observing the conditions of the site and the work proposed therein, the Certificate shall be uploaded with the bid submission.

### **3.02 TAXES**

- A. In accordance with Section 423 of the Code of Iowa and 701-19 of the Iowa Administrative Rules, Iowa Construction Sales Tax Exemption Certificates for this project will be issued. Do not include Iowa sales tax or use tax, or any local option sales tax, on construction materials in determining your bid prices. The successful Contractor will be required to notify the Department of Administrative Services project manager of all Subcontractors within forty-eight (48) hours after the published date and time by which bids must be submitted. Information on the Contractor and each Subcontractor shall include the firms' name, address, contact person, federal tax identification number, and the Iowa contractor registration number. For the Contractor and each Subcontractor, designate the type of trade or category of work that is to be provided on the project. The Construction Manager for the Department of Administrative Services must be informed when any Subcontractor is added to the project. Following receipt of the information, the Construction Manager for the Department of Administrative Services will arrange to have an authorization letter and certificate (please see sample, included in the Project Manual) issued on behalf of the Contractor and each Subcontractor and will forward the documents to the Contractor for distribution and use by each in purchasing construction materials for this project. Certificates issued for this project shall be used for tax-exempt purchasing construction materials for this project only.

### **3.03 ALTERNATE BIDS**

- A. Bidders are to bid all Alternates requested on the Bid Form. Alternates quoted will be reviewed and accepted or rejected at the option of the Department of Administrative Services. Accepted Alternates will be identified in the Owner-Contractor agreement. Indicate the price for Alternates described, as shown on the Drawings and specified in the Project Manual, and identify in the correct location on the Bid Form.

### **3.04 DRAWINGS AND PROJECT MANUAL**

- A. Drawings and Project Manual are specified in the Notice to Bidders or any extension thereof made by Addendum.

### **3.05 BID SECURITY**

- A. Each Bid shall be accompanied by Bid Security.

- B. The Bid Security shall be in the form of a Bid Bond, Certified check, or Cashier's check in an amount not less than five percent (5%) of the maximum value of the Bid, including any additive Alternates. NOTE: Checks other than Certified checks and Cashier's checks will not be accepted. Bonds shall be issued by a bonding company licensed to transact business in the State of Iowa. The Attorney in Fact who signs the Bond shall file with the Bond a certified and effectively dated copy of their Power of Attorney. The Bid Security shall be made payable to the Iowa Department of Administrative Services, and shall accompany the Bid. If a Bid Bond is not used, copies of Certified checks or Cashier's checks must be uploaded and hand delivered, in a sealed envelope, or mailed upon request. The Bid Security shall serve as a guarantee that a Bidder who is offered a contract will enter into an Agreement with the State of Iowa and will file an approved surety company's Performance Bond, Payment Bond and the Insurance Certificates as evidence of the required Insurance prior to execution of the contract. Upon failure to comply, the Bid Security shall be forfeited as liquidated damages. The governmental entity shall retain the bid security furnished by the successful bidder until the approved contract form has been fully executed, a bond has been filed by the bidder guaranteeing the performance of the contract, and the contract and bond have been approved by the governmental entity. The provisions of chapter 573, where applicable, apply to contracts awarded under this chapter. The governmental entity shall promptly return the checks or bidder's bonds of unsuccessful bidders to the bidders once the Notice of Intent to Award is issued.

### **3.06 DUE DATE AND TIME FOR RECEIPT OF BIDS**

- A. Properly completed Bids shall be submitted online through [IMPACS Electronic Procurement System](#), no later than the time and date specified in the Notice to Bidder or any extension thereof made by Addendum. Written, emailed, oral or telephonic Bids are invalid, and will not receive consideration. The Bidder shall assume full responsibility for the timely online submission of the Bid. Late bids will not be accepted.

### **3.07 COMMENCEMENT AND COMPLETION DATES**

- A. Commencement of the Work of the Contract shall be the day of receipt by the selected Contractor of the fully-executed contract. Final completion of the Work of the contract shall be acknowledged as a part of the Contractor's proposal.

### **3.08 SITE VISIT**

- A. A site visit by the prospective bidder is highly recommended at the time of the Pre-Bid Meeting of this project.

### **3.09 PRE-BID MEETING**

- A. Pre-Bid Meeting will be specified in the Notice to Bidders or any extension thereof made by Addendum.

### **3.010 QUESTIONS**

- A. Questions on this project may be raised and discussed at the time of the Pre-Bid Meeting or by submitting in writing to the issuing officer as specified in the Notice to Bidders or any extension thereof made by Addendum.

### **3.011 ADDENDA AND INTERPRETATIONS OF THE CONTRACT DOCUMENTS**

- A. Any person contemplating submitting a proposal for the proposed Contract, who is in doubt as to the true meaning of any part of the Bidding Documents, shall submit a written request for an interpretation thereof. The person submitting a request will be responsible for its prompt delivery. Every request for such interpretation should reference the Bid Number specified in the Bidding Documents, and shall be made in writing (email preferred). Questions shall be submitted to the

previously identified Purchasing Agent for the Department of Administrative Services. To be given consideration, requests shall be received as specified in the Notice to Bidders or any extension thereof made by Addendum. Replies, which revise or correct the Bidding Documents, or provide necessary clarifications, will be issued in the form of a written Addendum to the Bidding Documents. Interpretations, corrections or changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretations, corrections, or changes. The Bidder is to include any resultant cost changes in the Bid Sum. Addenda will be posted electronically at the respective bid site where the bid is initially posted. Acknowledgment by the Bidder of each issued Addendum shall be noted in the location so indicated on the Bid. All Addenda issued shall become part of the Contract Documents.

### **3.012 SUBSTITUTIONS**

- A. Where the Bidding Documents stipulate a specific product be provided by naming one or more manufacturer and model, a substitute product will be considered when a written request is received as specified in the Notice to Bidders or any extension thereof made by Addendum prior to bid opening. Substitution requests will be considered for all products per Section 01 2500 Substitution Procedures, even if the specification does not include a statement such as “or equal,” “equal to,” “equivalent to,” or “basis of design,” unless otherwise noted. Substitution requests shall be emailed to the Issuing Officer at the email address provided in Instructions to Bidders Section 1.04.

### **3.013 OBLIGATION OF BIDDER**

- A. It shall be the responsibility of each Bidder contemplating the submission of a Bid for the proposed Contract to fully acquaint himself/herself with conditions at the work site, project requirements, and to become acquainted thoroughly with the work, and all conditions that may be related to it. No considerations or revision in the contract price or scope of the project will be considered by the Owner for any item that could have been revealed by a thorough on-site inspection and examination.
- B. By submission of a Bid, it shall be understood that the Bidder assures that he/she has reviewed and is thoroughly familiar with the project requirements, contract conditions and supplementary conditions, the drawings, specifications, addenda, and that the bidder is aware of the conditions existing at the site that may relate to the work of this project. Failure of any Bidder to examine any form, document, or other instrument shall in no way relieve the Bidder from any obligation in respect to his/her Bid.

### **3.014 PUBLIC RECORDS AND REQUESTS FOR CONFIDENTIAL TREATMENT**

- A. The Agency’s release of public records is governed by Iowa Code chapter 22. Contractors are encouraged to familiarize themselves with Chapter 22 before submitting a Proposal. The Agency will copy and produce public records upon request as required to comply with Chapter 22 and will treat all information submitted by a Contractor as non-confidential records unless Contractor requests specific parts of the Proposal be treated as confidential at the time of the submission as set forth herein AND the information is confidential under Iowa or other applicable law.
- B. A Contractor requesting confidential treatment of specific information must: (1) fully complete Form 22 (Available at <https://das.iowa.gov/sites/default/files/procurement/pdf/Form%2022-ConfidentialityRequest-RFB.pdf>), (2) identify the request in the transmittal letter with the Contractor’s Proposal, (3) conspicuously mark the outside of its Proposal as containing confidential information, (4) mark each page upon which confidential information appears, and (5) submit a “Public Copy” from which the confidential information has been excised.
- C. Form 22 will not be considered fully complete unless, for each confidentiality request, the Contractor: (1) enumerates the specific grounds in Iowa Code chapter 22 or other applicable law that supports treatment of the material as confidential, (2) justifies why the material should be maintained in confidence, (3) explains why disclosure of the material would not be in the best interest of the public, and (4) sets forth the name, address, telephone, and e-mail for the person

- authorized by Contractor to respond to inquiries by the Agency concerning the confidential status of such material.
- D. The Public Copy from which confidential information has been excised is in addition to the number of copies requested in Section 3 of this RFP. The confidential material must be excised in such a way as to allow the public to determine the general nature of the material removed and to retain as much of the Proposal as possible.
  - E. **Failure to request information be treated as confidential as specified herein shall relieve Agency and State personnel from any responsibility for maintaining the information in confidence. Contractors may not request confidential treatment with respect to pricing information and transmittal letters. A contractor's request for confidentiality that does not comply with this section or a contractor's request for confidentiality on information or material that cannot be held in confidence as set forth herein are grounds for rejecting contractor's Proposal as non-responsive. Requests to maintain an entire Proposal as confidential will be rejected as non-responsive.**
  - F. If Agency receives a request for information that Contractor has marked as confidential and if a judicial or administrative proceeding is initiated to compel the release of such material, Contractor shall, at its sole expense, appear in such action and defend its request for confidentiality. If Contractor fails to do so, Agency may release the information or material with or without providing advance notice to Contractor and with or without affording Contractor the opportunity to obtain an order restraining its release from a court possessing competent jurisdiction. Additionally, if Contractor fails to comply with the request process set forth herein, if Contractor's request for confidentiality is unreasonable, or if Contractor rescinds its request for confidential treatment, Agency may release such information or material with or without providing advance notice to Contractor and with or without affording Contractor the opportunity to obtain an order restraining its release from a court possessing competent jurisdiction.

### **3.015 WITHDRAWAL OF BID**

- A. A Bid may be modified or withdrawn only before the time and date for receipt of Bids. Said request for modification or withdrawal of a bid must be completed online through [IMPACS Electronic Procurement System](#). A Bid shall remain valid for consideration by the Owner for the following period(s) of time after the date specified for receipt of Bids, or until such time following that period that the apparent low bidder requests in writing that the Bid be withdrawn, after which the Bid may be withdrawn without forfeiture of any required Bid Security. The Bid shall be valid for not less than thirty (30) calendar days after the date Bids are specified to be due. With the approval of the Department of Administrative Services, a bid may be withdrawn after opening, but only if the bidder provides prompt written notification that adequately documents the commission of an honest error that may cause undue financial loss.

### **3.016 BID OPENING**

- A. All bids received on or before the due date and time specified in the Notice to Bidder or any extension thereof made by Addendum will be opened and the name of the Bidder and the amount of their Bid will be announced.

### **3.017 BASIS OF BIDS**

- A. The Bidder shall include all additional documents or appendices that are requested to be submitted concurrent with the Bid submission; failure to comply may be cause for rejection.
- B. In accordance with Iowa law, Section 8A.311: A bidder, to be considered for an award of a state construction contract, shall disclose to the state agency awarding the contract the names of all subcontractors and suppliers who will work on the project being bid, within forty-eight (48) hours after the published date and time by which bids must be submitted. A bidder shall not replace a subcontractor or supplier disclosed without the approval of the state agency awarding the contract.
  - 1. A bidder, prior to an award or who is awarded a state construction contract, shall disclose all of the following, as applicable:

- a. If a subcontractor or supplier disclosed (under the preceding) by a bidder is replaced, the reason for replacement and the name of the new subcontractor or supplier;
  - b. If the cost of work to be done by a subcontractor or supplier is changed or if the replacement of a subcontractor or supplier results in a change in the cost, the amount of the change in cost.
  - c. Any reduction in subcontractor or supplier price as a result of the change, if the change is approved by the Owner, shall be deducted from the Trade Contract via a deductive Change Order. Any such changes, if approved by the Owner, which result in an increase in the Trade Contract Price shall be borne by the Trade Contractor.
- C. The Bidder is specifically advised that any person, firm or other party to whom it is proposed to award a subcontract under this contract must:
- 1. Be registered in the State of Iowa and have an Iowa Contractor's Registration number, and
  - 2. Be acceptable to the Owner.

### **3.018 INFORMALITIES/ REJECTION OF BIDS**

- A. The Iowa Department of Administrative Services reserves the right to waive any irregularities or informalities and to enter into a Contract with a Bidder, or to reject any or all bids as it deems to be in the best interest of the State, without penalty.

### **3.019 CONSIDERATION OF BIDS**

- A. It is the intent of the Department of Administrative Services to award a Contract to the lowest responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and is determined to be compliant with all Bidding Requirements, and does not exceed the funds available for construction.
- B. Bidder is to bid on each Alternate Bid requested. Failure to do so may result in disqualification of the bid. The Department of Administrative Services reserves the right to accept any, or no, Alternate Bid. Alternate Bids may be considered in any order or combination, and the low successful Bidder will be determined on the basis of the sum of the Base Bid and the Alternate(s) accepted at the time of the Contract award.
- C. In evaluating Bids, any proposal offered by a Bidder for an alternate design, or for materials other than those shown or specified for the Base Bid or for Alternate Bid construction under the proposed Construction Documents or called for by any issued Addenda to those Construction Documents, will not be considered in determining the low successful Bidder. However, the Department of Administrative Services reserves the right to consider any such Bidder-proposed (Contractor's Alternate) alternate designs or materials with the low successful Bidder, after the low successful Bidder is determined in the manner described above (A and B).
- D. Notice of Intent to Award the Bid(s) will be sent to all Respondents submitting a timely Bid and may be posted at the website shown on the RFB cover sheet. Negotiation and execution of the Contract(s) shall be completed no later than fifteen (15) days from the date of the Notice of Intent to Award or such other time as designated by Agency. If the successful Bidder fails to negotiate and deliver an executed Contract, including all required documents such as payment and performance bonds and insurance certificate, by that date, the Agency, in its sole discretion, may cancel the award and award the Contract to the remaining Bidder the Agency believes will provide the best value to the State.

### **3.020 PREFERENCE**

- A. By virtue of statutory authority, a preference shall be given to Iowa domestic labor, products produced and provisions grown within the state of Iowa, in accordance with the provisions of Chapter 73, Code of Iowa and any amendments thereto.
- B. Enforcement of reciprocal resident bidder preference and resident labor force preference codified at Iowa Code Section 73A.21.
  - 1. NOTICE: Failure on the part of the bidder to carefully read the following paragraphs and to provide the information requested below may make the bidder's bid materially nonresponsive

and therefore ineligible for contract award. Violations of Iowa Code Section 73A.21 may, among other things, result in civil penalties assessed by the Commissioner of the Division of Labor of Iowa Workforce Development. The bidder should seek out the advice of an attorney if he or she has questions about Iowa Code Section 73A.21. As a part of the competitive procurement of contracts for Public Improvements that must be awarded to the low bidder (if the bid is responsive and the bidder is deemed responsible), Public Bodies shall allow a preference to Resident Bidders if a Nonresident Bidder places a bid for the contract for the Public Improvement and that Nonresident Bidder's state or foreign country gives resident bidders of that state or foreign country a preference (including a labor force preference or any type of preferential treatment). The preference allowed, or reciprocally applied, shall be equal to the preference given or required by the state or foreign country in which the Nonresident Bidder is a resident bidder.

"Public Body" means the State of Iowa (and its agencies) and any of its political subdivisions, including school districts, public utilities, and the state board of regents.

"Public Improvement" means a building or other construction work to be paid for in whole or in part by the use of funds of the State of Iowa, its agencies, and any of its political subdivisions and includes road construction, reconstruction, and maintenance projects.

"Resident Bidder" means a person or entity authorized to transact business in of the State of Iowa and having a place of business for transacting business within the State of Iowa at which it is conducting and has conducted business for at least three years prior to the date of the first advertisement for the public improvement. Note, however, that if a nonresident bidder's state or foreign country has a more stringent definition of a resident bidder, the more stringent definition is applicable as to bidders from that state or foreign country.

"Nonresident Bidder" means a person or entity who does not meet the definition of a resident bidder.

- C. Nonresident bidders shall be required to certify on the Bid submission, where so indicated, the state or foreign country in which the firm is a resident, and if that state or foreign country uses a percentage for in-state bidders and the amount of the preference.
- D. If it is determined that this may cause denial of federal funds which would otherwise be available, or would otherwise be inconsistent with requirements of federal law, this section shall be suspended, but only to the extent necessary to prevent denial of the funds or to eliminate the inconsistency with federal requirements.

### **3.021 QUALIFICATIONS**

- A. In accordance with Iowa Code 26.9(2) and 26.16, no potential bidder shall be required to provide confidential or proprietary information or meet any class requirements as a precondition to submitting a responsive bid. However, as noted in Iowa Code 26.9(2), the lowest responsive bidder may be required to provide additional information to verify responsibility prior to and as a condition of obtaining final award of the contract. Any qualification requirements contained in any bid document indicates only preferred qualifications, not a precondition to bid, and the lowest responsive bidder's qualifications will be evaluated individually based on all information provided.
- B. The Owner may make such investigations as he or she deems necessary to determine the ability of the awarded Bidder to perform the required work, and the awarded Bidder shall furnish to the Owner all such information and data for this purpose. The Owner reserves the right to rescind any awarded Bid if the evidence submitted by, or in investigation of, such Bidder fails to satisfy the Owner that the Bidder is properly qualified to carry-out the obligations of the Contract and to complete the Work contemplated therein.
- C. Bidders shall be registered as a Construction Contractor with the Labor Commissioner, Iowa Workforce Development Department, as required by Chapter 91C of the Code of Iowa. Bidder's Iowa Contractor Registration Number shall be included in the location provided in the Bid Form.
- D. Non-resident corporations submitting bids must be in compliance with Section 490.1501 of the Code of Iowa and legally authorized thereby to carry-on such business in the State of Iowa as is required by the Contract Documents.
- E. An out-of-state Bidder, if awarded a contract, will be required to submit evidence of authorization to do business in the State of Iowa.

### **3.022 INSURANCE**

- A. Insurance Requirements
  - 1. The Contractor shall maintain in effect, with insurance companies of recognized responsibility, at its expense, insurance covering its work of the type and in amounts required by this Contract. The Contractor's insurance shall, among other things, insure against any loss or damage resulting from the Contractor's performance of this Contract. All such insurance policies shall remain in full force and effect for the entire life of this Contract and shall not be canceled or changed except after thirty (30) days written notice to the Owner.
  - 2. **Amounts of Insurance Required – Refer to ConsensusDOCS 802 (see template in Project Manual)**
- B. Certificates of Coverage
  - 1. Certificates of the insurance described above shall be submitted to the Owner before starting any construction activities and shall be subject to approval by the Owner. The Contractor shall provide certificates for the insurance required. The insurer shall state in the certificate that no cancellation of the insurance will be made without at least thirty (30) days prior written notice to the Contractor. Upon receipt of any notice of cancellation or alteration, Contractor shall within ten (10) days procure other policies of insurance, similar in all respects to the policy or policies, about to be canceled or altered, and, if the Contractor fails to provide, procure, and deliver acceptable policies of insurance, or satisfactory evidence thereof, in accordance with the terms hereof then, at the Owner's option, Owner may obtain such insurance at the cost and expense of Contractor, without the need of any notice to Contractor.
- C. No Limitation of Liability
  - 1. Acceptance of the insurance certificates by the Owner shall not act to relieve the Contractor of any obligation under this Contract. All insurance policies and certificates shall be issued only by companies authorized to transact business in the State of Iowa. It shall be the responsibility of the Contractor to keep the respective insurance policies and coverage's current and in force during the life of this agreement.
  - 2. A Sample Certificate of Insurance is attached for reference following this Section.

### **3.023 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR**

- A. The Agreement for the Work will be written on ConsensusDOCS 802 Form of Agreement between Owner and Contractor (sample of the document with modifications incorporated is bound in this Project Manual).

### **3.024 EXECUTION OF CONTRACT**

- A. Contract documents shall mean and include the following:
  - 1. Contract: ConsensusDOCS 802
  - 2. Performance and Payment Bonds
  - 3. Project Manual
  - 4. Drawings
  - 5. Numbered Addenda issued after initial publication of Bid Documents
  - 6. Numbered Modifications (Change Orders) issued after Contract is signed

### **3.025 LAWS AND REGULATIONS**

- A. The Bidder's attention is directed to the fact that all applicable laws and regulations of Federal and State agencies having jurisdiction over the construction of this project shall apply to any contract resulting from this proposal, and it shall be deemed that those rules and regulations are made a part of such contract the same as if set forth in their entirety therein. By submitting a Bid, the Bidder confirms that he/she is familiar with and understands the Contractor's responsibility under all Federal and State of Iowa laws and regulations with respect to the Work described by the proposed Contract Documents.

### **3.026 CONTRACT DOCUMENTS AND ORDER OF PRECEDENCE**

- A. Where an irreconcilable conflict exists among Applicable Legal Requirements, this Contract, the specifications in the Materials and the Drawings, the earliest item mentioned in this sentence involving a conflict shall control over any later mentioned item or items subject to such conflict unless doing so would result in reducing the Bidder's duty of care or obligations under this Contract, in which case the terms resulting in the highest requirements for Bidder performance shall control.

### **3.027 CONDITIONS OF THE WORK**

- A. Each bidder must fully inform him/herself of the conditions under which the work is to be performed at the site of the work, the obstacles which may be encountered, and all other relevant matters concerning the work to be performed. Failure to do so will not relieve a successful bidder of the obligation to furnish all material and labor necessary to carry out the provisions of the contract. When a site visit is required by provisions located elsewhere in these Instructions to Bidders, as a site tour in conjunction with a mandatory Pre-Bid Meeting, it shall be the Bidder's responsibility to fulfill this obligation as a condition of bidding the Work described in the Bidding Documents.
- B. No allowance will be made for any additional compensation by reason of any matter or condition with which the bidder might have fully informed him/herself, but failed to do so prior to bidding. Insofar as possible, the Contractor and all subcontractors shall employ such methods or means in carrying out the work so as not to cause any interruption of, or interference with, the work of any other subcontractor or trade.

### **3.028 SUBCONTRACTS**

- A. The Prime Contractor shall be responsible for notifying all subcontractors and suppliers and informing them that they are bound in each case by all applicable provisions of the bidding information and those of the proposed Form of Agreements as defined in the Contract Documents.

**END OF SECTION**

## SECTION 00 2113.01

### IMPACS Public Construction Bidders User Guide

Public construction bids must be submitted on-line at [IMPACS Electronic Procurement System](#).

Bidders must be registered in IMPACS to submit a Bid.

To create an account, enter your email address and click on “Next” and click “Create Account”. Bidder must enter all fields noted with \* including legal company name, contact first and last name, phone number, confirm email address, password, re-enter password, select account recovery question including answer, confirm answer, select box accepting websites use terms and conditions and select security check box “I’m not a robot”.

On the [IMPACS Electronic Procurement System](#) Customer Portal Home page, Bidder selects “View Event” in the Sourcing Events section.

**Sourcing Events** ?

Show Opening or Closing Soon ▾ [Go to Public Opportunities](#)

Event Number	Status	Event Title	Dates	Action
RFB923700-02	Open	Hoover East Side Pavers	Open: 4/27/2022 12:00:00 PM CDT Close: 5/5/2022 12:00:00 PM CDT	<a href="#">View Event</a> ▾

Bidders can view event details including description, prerequisites, buyer attachments, questions and answers.

To submit a Bid, Bidder must select “**Yes, I intend to Bid**”. Bidder must complete the following sections.

**Prerequisites** - Bidder must complete all prerequisites.

- Bidder must upload a file of the Bid Security/Bond for 5% of total Bid Amount and certify that if they are awarded the construction contract they will enter into the contract at the Bid Amount submitted.
- Bidder must upload the completed and signed Bid Form.  
**NOTE: Bids are to be entered on the Bid Form only; not in the IMPACS. As a result, IMPACS will display a bid amount of \$0.**

**Questions** - Bidder must complete all questions.

**Review & Submit** - Bidder must select the certification box certifying that the statements and information in response are true and correct to the best of their knowledge and belief.

SECTION 00 2113.02

**SAMPLE**



**CERTIFICATE OF LIABILITY INSURANCE**

DATE (MM/DD/YYYY)  
xx/xx/xxxx

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER <b>Agent's Name</b> <b>Agent's Address</b>	CONTACT NAME: <b>Agent's Information</b>	
	PHONE (A/C, No. Ext): E-MAIL ADDRESS:	FAX (A/C, No):
INSURED <b>Trade Contractor's Name</b> <b>Trade Contractor's Mailing Address</b>	INSURER(S) AFFORDING COVERAGE	
	INSURER A: <b>Company A (AM Best Rated A/VI or Better)</b>	
	INSURER B:	
	INSURER C:	
	INSURER D:	
	INSURER E:	
		NAIC # <b>Admitted Carriers</b>

COVERAGES CERTIFICATE NUMBER: REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	Minimum
* A	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC OTHER:	X X	#TBD-CGL	3/1/17	3/1/18	EACH OCCURRENCE \$ <b>1,000,000</b> DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ <b>1,000,000</b> GENERAL AGGREGATE \$ <b>2,000,000</b> PRODUCTS - COM/POP AGG \$ <b>1,000,000</b> \$	
B	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> NON-OWNED AUTOS	X X	#TBD-AL	3/1/17	3/1/18	COMBINED SINGLE LIMIT (Ea accident) \$ <b>1,000,000</b> BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$	amount varies based on paragraph 10.2.2 of the ConsensusDocs 802 contract
C	UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$	X X	#TBD-UMB	3/1/17	3/1/18	EACH OCCURRENCE \$ <b>10,000,000</b> AGGREGATE \$	
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y/N N/A X	#TBD-WC	3/1/17	3/1/18	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ <b>500,000</b> E.L. DISEASE - EA EMPLOYEE \$ <b>500,000</b> E.L. DISEASE - POLICY LIMIT \$ <b>500,000</b>	
* E	<b>Owners Contrators</b> <b>Protective Liability</b>		#TBD-OCF	3/1/17	3/1/18	*Limits equal to CGL (or) as required by owner (Note- Would be either CGL or OCF, not both)	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Additional Insured on a Primary & Non-Contributory basis (CGL;AL;UMB/Excess) in favor of : (Owner) Iowa Department of Administrative Services (DAS), Officers, Directors, Members, Consultants, Agents, and Employees.

Waiver of Subrogation (CGL;AL;WC/EL;UMB/Excess) in favor of: (Owner) Iowa Department of Administrative Services (DAS), Officers, Directors, Members, Consultants, Agents, and Employees.

Project XXXX.XX (Number varies by project)

CERTIFICATE HOLDER <b>Iowa Department of Administrative Services (DAS)</b> 109 SE 13th Street Des Moines, IA 50319	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.  AUTHORIZED REPRESENTATIVE <b>Signature</b>
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**SECTION 00 3113**

**PRELIMINARY SCHEDULE**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Preliminary Construction Schedule
- B. Schedule Durations

**1.02 PRELIMINARY SCHEDULE**

- A. A preliminary schedule has been identified by the Owner for the implementation of the Project. Refer to the schedule following this Section for references to anticipated milestones and construction duration.
- B. Each step of the Preliminary Schedule is subject to receipt of acceptable bids, Owner's decision process and date of commencement.
- C. A proposed construction schedule shall be submitted by all Trade Contractors to the Construction Manager no later than 48 hours prior to the pre-construction meeting. A revised Construction Schedule will be submitted by the Construction Manager once all preliminary schedules are reviewed and approved by the Owner.
- D. The final construction schedule will be established post award of bids with the cooperation of all contractors.

**1.03 SCHEDULE DURATIONS**

- A. Anticipated Notice of Intent to Award – 8/31/2026
- B. Anticipated Date of Commencement – 4/12/2027
- C. Substantial Completion by – 6/7/2027

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

Activity ID	Activity Name	Planned Duration	Remaining Duration	Start	Finish	DCI Responsibility	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N
<b>9517.00 IVC Columbarium &amp; Irrigation Expansion</b>																								
<b>Milestones</b>																								
A1670	NPDES Permit	0	0	16-Jun-26			◆																	
A1110	100% Bid Documents	0	0		24-Jun-26		◆																	
A1830	Building Permit	0	0	25-Jun-26			◆																	
A1230	Contractors under Contract	0	0	17-Sep-26			◆																	
A1240	Construction Start	0	0	12-Apr-27			◆																	
A1340	Final Completion	0	0		11-May-27		◆																	
A4090	Owner Closeout Conference	0	0		08-Jun-27		◆																	
A4100	Owner Occupancy	0	0		17-Jun-27		◆																	
A1680	Submit NPDES Permit Dicontinuation or Renewal	0	0		19-Nov-27		◆																	
<b>Preconstruction</b>																								
A1000	Submit CM Proposal	2	2	16-Jun-26*	17-Jun-26		█																	
<b>Design</b>																								
A1500	100% Bid Doc Coordination	7	7	16-Jun-26	24-Jun-26		█																	
A1160	100% Bid Doc Submittal	0	0		24-Jun-26		◆																	
<b>Bid Letting</b>																								
A1560	Issue RFB to Procurement (State)	1	1	25-Jun-26	25-Jun-26																			
A1120	Post RFB to TSB (State), MBI, Planrooms	2	2	26-Jun-26	27-Jun-26																			
A1170	RFB Procurement	21	21	29-Jun-26	28-Jul-26		█																	
A1570	RFB Pre-bid Meeting	0	0	16-Jul-26			◆																	
A1590	RFB Questions Due	0	0		20-Jul-26		◆																	
A1600	RFB Final Addendum	0	0		24-Jul-26		◆																	
A1180	Bids Due	0	0		28-Jul-26		◆																	
A1450	Submit Grant For Approval VCGP	3	3	29-Jul-26	31-Jul-26		█																	
A1460	Grant Approval Process with VCGP	20	20	03-Aug-26	28-Aug-26		█																	
A1190	Contractor NOIs	0	0	31-Aug-26			◆																	
A1200	Contractor 5 Day Appeal Period	5	5	31-Aug-26	04-Sep-26		█																	
A1210	Contractor Contract Execution	12	12	31-Aug-26	16-Sep-26		█																	
<b>Construction</b>																								
<b>Administrative</b>																								
A1760	Bid Package Scope Review (Each Prime)	10	10	31-Aug-26	14-Sep-26		█																	
A1750	Contractor Site Specific Safety Plans Submitted	15	15	17-Sep-26	07-Oct-26		█																	
A1770	Construction Kick-Off Meeting	1	1	17-Sep-26	17-Sep-26																			
A1890	DNR Notification of Demolition & Renovation	10	10	29-Mar-27	12-Apr-27		█																	
A1950	Iowa Division of Labor Asbestos Abatement Notification	10	10	29-Mar-27	12-Apr-27		█																	
<b>Procurement</b>																								
A1700	Submittal Development	15	15	17-Sep-26	07-Oct-26		█																	
A1710	Submittal Review	15	15	08-Oct-26	28-Oct-26		█																	
A1720	Product Ordered	5	5	29-Oct-26	04-Nov-26		█																	
A1740	Field Measurement	5	5	05-Nov-26	11-Nov-26		█																	
A1780	Pre-cast Columbarium Procurement	50	50	05-Nov-26	19-Jan-27		█																	
A1790	Limestone Cap Procurement	50	50	05-Nov-26	19-Jan-27		█																	

█ Primary Baseline    █ Critical Remaining Work  
█ Actual Work    ◆ Milestone  
█ Remaining Work    ◆ CRIT MILESTONE

Activity ID	Activity Name	Planned Duration	Remaining Duration	Start	Finish	DCI Responsibility	Gantt Chart																											
							J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N										
A1730	Product Delivery	5	5	12-Nov-26	18-Nov-26		Product Delivery																											
<b>Site Development</b>																																		
A1220	Mobilization	2	2	12-Apr-27	13-Apr-27		Mobilization																											
A1470	Spring 2027 Start	0	0	12-Apr-27*			Spring 2027 Start																											
A1250	Staking / Silt Fence	2	2	13-Apr-27	14-Apr-27		Staking / Silt Fence																											
A1260	Site Clearing	2	2	15-Apr-27	16-Apr-27		Site Clearing																											
A1270	Chain Link Fence Install	2	2	19-Apr-27	20-Apr-27		Chain Link Fence Install																											
A1280	Excavation at Columbariums	5	5	21-Apr-27	27-Apr-27		Excavation at Columbariums																											
A1290	Concrete Footings at Columbariums	5	5	28-Apr-27	04-May-27		Concrete Footings at Columbariums																											
A1480	Irrigation Filters and Pumps	10	10	28-Apr-27	11-May-27		Irrigation Filters and Pumps																											
A1490	Irrigation Controls	7	7	28-Apr-27	06-May-27		Irrigation Controls																											
A1300	Cylinder Testing	1	1	04-May-27	04-May-27		Cylinder Testing																											
A1310	7-Day break results	7	7	05-May-27	11-May-27		7-Day break results																											
A1320	Drainage Work	5	5	05-May-27	11-May-27		Drainage Work																											
A1360	Set Columbariums	5	5	12-May-27	18-May-27		Set Columbariums																											
A1370	Concrete Prep	2	2	17-May-27	18-May-27		Concrete Prep																											
A1380	Concrete Pour	2	2	19-May-27	20-May-27		Concrete Pour																											
A1390	Cylinder Testing	1	1	20-May-27	20-May-27		Cylinder Testing																											
A1350	Sprinkler Head & Line Modifications	3	3	21-May-27	25-May-27		Sprinkler Head & Line Modifications																											
A1400	7-Day break results	7	7	21-May-27	27-May-27		7-Day break results																											
A1410	Saw cutting	1	1	21-May-27	21-May-27		Saw cutting																											
A1420	Columbarium Stone Installation	10	10	21-May-27	04-Jun-27		Columbarium Stone Installation																											
A1430	Landscaping - grading, trees, sod, mulch	5	5	24-May-27	28-May-27		Landscaping - grading, trees, sod, mulch																											
A1440	Niche Cover Plate Installation	5	5	24-May-27	28-May-27		Niche Cover Plate Installation																											
<b>Closeout</b>																																		
A1870	Building Final Inspection	0	0		13-Apr-27		Building Final Inspection																											
A1330	O&M & Attic Stock Procurement	20	20	14-Apr-27	11-May-27		O&M & Attic Stock Procurement																											
A2020	Initial Construction Clean	3	3	21-May-27	25-May-27		Initial Construction Clean																											
A1910	DCI Group Punch List	1	1	26-May-27	26-May-27		DCI Group Punch List																											
A1920	DCI Punch List Correction	5	5	27-May-27	03-Jun-27		DCI Punch List Correction																											
A2030	Construction Clean	3	3	04-Jun-27	08-Jun-27		Construction Clean																											
A1930	Owner & Design Team Punch List	1	1	07-Jun-27	07-Jun-27		Owner & Design Team Punch List																											
A2010	Substantial Completion	0	0		07-Jun-27		Substantial Completion																											
A1900	Owner Training	1	1	08-Jun-27	08-Jun-27		Owner Training																											
A1940	Owner & Design Team Punch List Corrections	5	5	08-Jun-27	14-Jun-27		Owner & Design Team Punch List Corrections																											
A2000	Owner Closeout Conference	0	0		08-Jun-27		Owner Closeout Conference																											
A2040	Final Clean	3	3	15-Jun-27	17-Jun-27		Final Clean																											
A1980	Owner Occupancy	0	0		17-Jun-27		Owner Occupancy																											

Primary Baseline    
  Critical Remaining Work  
 Actual Work    
 ◆ Milestone  
 Remaining Work    
 ◆ CRIT MILESTONE

**SECTION 00 3143**

**PERMIT APPLICATION**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Permit Application Information
- B. Licenses, Permits, and Related Inspections

**1.02 PERMIT APPLICATION INFORMATION**

- A. Electrical Permit and Inspections: Trade Contractor is responsible for permits and inspections.
- B. Other Applicable inspections: Trade Contractor is responsible for any other applicable project specific permits and inspections.

**1.03 LICENSES, PERMITS, AND RELATED INSPECTIONS**

- A. The Bidder shall comply with all codes, laws, ordinances, rules and regulations of any public authority having jurisdiction that bears on the performance of its work. All construction, materials and methods shall comply with the State Building Codes, except where plans and specifications establish a higher standard.

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

**SECTION 00 4116**

**BID FORM**

**The Bid Form must be submitted online through the State's [IMPACS Electronic Procurement System](#).**

RFB #951700-01

BID FORM for CONSTRUCTION CONTRACT  
for  
DVA IVC Columbarium & Irrigation Expansion  
34024 Veterans Memorial Dr  
Van Meter, Iowa 50003  
Project 9517.00

Iowa Department of Administrative Services  
Hoover State Office Building, Level 3  
1305 East Walnut Street  
Des Moines, Iowa 50319-0105

The following information is to be completed and submitted with your bid..

1. Bid Form - Completed and Signed (to be uploaded with bid submission)
2. Non Discrimination Clause Information
3. Contractor Targeted Small Business Enterprise Pre-Bid Contract Information
4. Bid Security – 5% of total Bid amount (to be uploaded with bid submission)

**Authorized Representative:**

The undersigned Bidder, in response to your Request for Bid for construction of the above project, having examined the Drawings, Specifications, and other Bidding Documents dated June 12<sup>th</sup>, 2026, and Addenda issued and acknowledged below as received and being familiar with all the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, equipment and supplies to perform all work to construct the project in strict accordance with the proposed Contract Documents, within the time and at the prices stated below. Prices are to cover all expenses incurred in performing the work required under the proposed Contract Documents, of which this bid is a part.

Bidder acknowledges receipt of the following Addenda which are a part of the Bidding Documents and for which any effect on cost of the Work is included in the bid amounts indicated:

Number \_\_\_\_\_

Dated \_\_\_\_\_

Note that the State of Iowa is exempt from State and Local sales and use taxes (including local option and school option) for this project. Taxes on construction materials shall NOT be included in the bid amounts.

Amounts shall be indicated in both words and figures. In case of discrepancy, the amount indicated in words shall govern.

BID PACKAGES:

BP 01

Description: Columbarium and Irrigation Expansion

Bidder proposes and agrees to perform all work as described in the Construction Documents for the sum of:

---

Dollars

---

(\$ \_\_\_\_\_).

Bidder hereby certifies that:

1. This bid is genuine and is not made in the interest of or on behalf of any undisclosed person, firm or corporation;
2. Bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid; Bidder has not solicited or induced any person, firm or corporation to refrain from bidding; and Bidder has not sought by collusion to obtain any advantage over any other bidder or over the Owner.
3. Bidder hereby certifies that the Bidder is registered with the Iowa Labor Commissioner as a Contractor as required by Chapter 91C, Code of Iowa.
4. Bidder agrees to comply with all Federal and State Affirmative Action/Equal Employment Opportunity requirements concerning fair employment and will not discriminate between or among them by reason of race, color, religion, sex, national origin or physical handicap.
5. All construction under this Contract shall conform to the requirements of the *Iowa State Building Code*.
6. Bidder agrees that this bid shall remain valid and shall not be withdrawn for a period of thirty (30) calendar days after the date for receipt of bids.
7. Bidder agrees that if written notice of acceptance of this bid is mailed, emailed, or delivered to the undersigned within thirty (30) days after the date in which bids are due, or at any time thereafter before it is withdrawn, the undersigned will sign and return the Contract Agreement, prepared in accord with the Bidding Documents and this bid as accepted; and will also provide proof of insurance coverage and required surety bonds.
8. Bidder understands that the Owner reserves the right to reject any and all bids, and to waive irregularities or informalities and enter into a contract for the work, as the Owner deems to be in the best interest of the State.
9. Bidder understands that the Owner reserves the right to accept any, or no, Alternate Bid, if requested, and that the Alternate Bids may be considered in any order or combination, and the low Bidder shall be determined on the basis of the sum of the base bid and any Alternate(s) accepted.

Subcontractors:

The Trade Contractor must identify all Subcontractors and Suppliers within 48 hours of the published date and time for which bids must be submitted, in accordance with Iowa Code Section 8A311, as amended by House File 646 in 2011. Subcontractors and suppliers may not be changed without the approval of the Owner. Requests for changing a Subcontractor or supplier must identify the reason for the proposed change, the name of the new Subcontractor or supplier, and the change in the subcontractor or supplier price as a result of the change. Any reduction in subcontractor or supplier price as a result of the change, if the change is approved by the Owner, shall be deducted from the Trade Contract Price via a deductive Change Order. Any such changes, if approved by the Owner, which result in an increase in the Trade

Contract Price shall be borne by the Trade Contractor.

**Enforcement of Reciprocal Resident Bidder Preference, per Iowa Code 73A.21.**

All bidders shall either check the box next to "Resident Bidder" or check the box next to "Nonresident Bidder" and by doing so and signing thereafter certifies and attests to the same. All information requested must be provided. Seek out the advice of an attorney if you have questions.

"Resident Bidder" means a person or entity authorized to transact business in of the State of Iowa and having a place of business for transacting business within the State of Iowa at which it is conducting and has conducted business for at least three years prior to the date of the first advertisement for the public improvement. Note, however, that if a nonresident bidder's state or foreign country has a more stringent definition of a resident bidder, the more stringent definition is applicable as to bidders from that state or foreign country.

Resident Bidder

Name of Resident Bidder: \_\_\_\_\_

By: \_\_\_\_\_  
Authorized Agent and Signatory of Resident Bidder

**OR:**

Nonresident Bidder

Name of Nonresident Bidder: \_\_\_\_\_

Name of State or Foreign Country of Nonresident Bidder: \_\_\_\_\_

Particularly identify and describe any preference, labor preference, or any other type of preferential treatment, in effect in the nonresident bidder's state or foreign country at the time of this bid:

\_\_\_\_\_  
\_\_\_\_\_

NOTICE: Nonresident Bidders domiciled in a state or country with a resident labor force preference shall make and keep, for a period of not less than three years, accurate records of all workers employed on the public improvement. The records shall include each worker's name, address, telephone number when available, social security number, trade classification, and the starting ending time of employment.

By: \_\_\_\_\_  
Authorized Agent and Signatory of Nonresident Bidder

---

**REQUIRED: Bid Form shall be signed by an officer of the company with authority to bind in a contract.** Notice of acceptance of this bid, or request for additional information by the Department of Administrative Services, may be addressed to the undersigned at the address set forth below:

Legal Name of Firm: \_\_\_\_\_

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

Signature of Bidder: \_\_\_\_\_

Title: \_\_\_\_\_

Typed Name of Signatory: \_\_\_\_\_

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

Business Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Federal Tax Identification Number: \_\_\_\_\_

Iowa Contractor Registration Number: \_\_\_\_\_

Bidder Safety Manager Name: \_\_\_\_\_

For an out-of-state Bidder, Bidder certifies that the Resident Preference given by the State or Foreign Country of Bidder's residence, \_\_\_\_\_, is \_\_\_\_\_ %.

**END OF SECTION**

## SECTION 00 4116.01

### NON-DISCRIMINATION CLAUSE

This Section is for informational purposes only. All information will be submitted online through the State's [IMPACS Electronic Procurement System](#).

#### PART 1 - GENERAL

All contractors, subcontractors, vendors and suppliers of goods and services doing business with the State of Iowa and value of said business equals or exceeds \$10,000 annually, agree as stated below.

#### 1.01 NONDISCRIMINATION CLAUSE

- A. The contractor, subcontractor, vendor and supplier of goods and services will not discriminate against an employee or applicant for employment because of race, creed, color, sex, national origin, ancestry, religion, economic status, age, disability, political opinion, or affiliations of an applicant or employee based upon the nature of the job occupation. The contractor, subcontractor, vendor and supplier will develop an Affirmative Action Program to insure that applicants are employed and that employees are treated during employment without regard to their race, creed, color, sex, national origin, ancestry, religion, economic status, age, disability, political opinions or affiliations. Such action shall include, but not be limited to the following:
  - 1. Employment.
  - 2. Upgrading.
  - 3. Demotion or transfer.
  - 4. Recruitment and advertising.
  - 5. Layoff or termination.
  - 6. Rates of pay or other forms of compensation.
  - 7. Selection for training, including apprenticeship.
- B. The contractor, subcontractor, vendor and supplier of goods and services will, in all solicitations or advertisements for employees, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, sex, national origin, ancestry, religion, economic status, age, disability, political opinion or affiliations.
- C. The contractor, subcontractor, vendor and supplier or their collective bargaining representative will send to each labor union or representative or workers with which they have a collective bargaining agreement or other contract or understanding, a notice advising the said labor union or workers' representative of the contractor's commitments under this section.
- D. The contractor, subcontractor, vendor and supplier of goods and services will comply with all published rules, regulations, directives and orders of the State of Iowa Affirmative Action Program Contract Compliance Provisions.
- E. The contractor, subcontractor, vendor and supplier of goods and services will furnish and file compliance reports within such time and upon such forms as provided by the Equal Employment Opportunity Officer, said forms may elicit information as to the policies, procedures, patterns, and practices of each subcontractor as state as the contractor themselves and said contractor, subcontractor, vendor and supplier will permit access to their employment books, records and accounts to the State's Equal Employment Opportunity Officer, for the purpose of investigation to ascertain compliance with this Contract and with rules regulations of the State's Affirmative Action Program.
- F. In the event of the contractor's noncompliance with the nondiscrimination clauses of this Contract or with any of such rules, regulations and orders; this Contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further contracts in accordance with procedures authorized by the State of Iowa.

- G. The contractor, subcontractor, vendor and supplier of goods and services will include, or incorporate by reference, the provisions of the nondiscrimination clause in every contract, subcontract or purchase order unless exempted by the rules, regulations or orders of the State's Affirmative Action Program, and will provide in every subcontract or purchase order that said provisions will be binding upon each contractor, subcontractor or seller.
- H. The parties agree to comply with "Compliance with the Law; Nondiscrimination in Employment" of the current Terms and Conditions at the award of this contract. Current Terms and Conditions may be found on the following web site and are, by this reference, made a part of this Agreement. <https://das.iowa.gov/procurement/terms-and-conditions>
- I. We certify and recognize that we are morally and legally committed to nondiscrimination in employment. Any person who applies for employment with our company will not be discriminated against because of race, creed, color, sex, national origin, ancestry, religion, economic status, age or disabilities, unless disabilities are based upon the nature of the job occupation.

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

**SECTION 00 4116.02**

**TARGETED SMALL BUSINESS INFORMATION**

**This Section is for informational purposes only. All information will be submitted online through the State's [IMPACS Electronic Procurement System](#).**

**PART 1 - GENERAL**

**1.01 TARGETED SMALL BUSINESS INFORMATION**

- A. Subcontractor Targeted Small Business Enterprise Pre-Bid Contact Information, including subcontractor and dollar amount to be subcontracted, is to accompany the Bid submission. Bidders shall comply with all affirmative action/equal opportunity provisions of State and Federal laws. The Owner seeks to provide opportunities for Targeted Small Businesses in accordance with the provisions of Chapter 73 of the Code of Iowa.
  
- B. [Search the Targeted Small Business Directory](#) for certified State of Iowa Targeted Small Businesses.

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

IOWA DEPARTMENT OF ADMINISTRATIVE SERVICES  
 SUBCONTRACTOR  
 TARGETED SMALL BUSINESS ENTERPRISE  
 PRE-BID CONTRACT INFORMATION

<b>CONTRACTOR</b>	<b>BID NO.</b>
(to be completed by bidder)	
<b>PAGE #</b>	

*You are requested to provide the information on this form showing your targeted Small Business enterprises contracts made prior to your bid submission. This information is subject to verification and confirmation. NOTE: The Department of General Services will not regard your acceptance or use of a low quote or bid from a non-targeted Small Business Enterprise on any subcontract item as evidence itself of any lack of good faith effort to solicit targeted Small Business Enterprise subcontractors on this project. However, every effort shall be made to solicit quotes or bids on as many subcontractable items as necessary to evidence affirmative action in contracting.*

**TABLE OF INFORMATION SHOWING BIDDER'S PRE-BID TARGETED SMALL BUSINESS ENTERPRISE CONTACTS**

SUBCONTRACTOR	TSB	DATES CONTACTED	QUOTES RECEIVED		QUOTATION USED IN BID	
			YES/NO	DATES	YES/NO	DOLLAR AMOUNT PROPOSED TO BE SUBCONTRACTED

Total dollar amount proposed to be subcontracted to TSB on this project \$ \_\_\_\_\_  
 List items to be subcontracted. (If more space is needed, use reverse side.)

**SECTION 00 4313**

**BID SECURITY FORMS**

**PART 1 - GENERAL**

**1.01 BID SECURITY FORMS**

- A. A Bid Bond form will be required on this project. An amended ConsensusDocs 262 is attached for reference following this page. ConsensusDocs bid bond form is not required (other standard forms are acceptable to the State of Iowa).

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**



**CONSENSUSDOCS 262  
 BID BOND  
 (AMENDED BY STATE OF IOWA)**

This document was developed through a collaborative effort of organizations representing a wide cross-section of the design and construction industry. The organizations endorsing this document believe it represents a fair allocation of risk and responsibilities for all project participants.

Endorsing organizations recognize that this document must be reviewed and adapted to meet specific needs and applicable laws. This document has important legal and insurance consequences. You are encouraged to consult legal, insurance and surety advisors before completing or modifying this document. The software includes a notes section indicating where information is to be inserted to complete this document. Further information and endorsing organizations' perspectives are available at [www.consensusdocs.org/guidebook](http://www.consensusdocs.org/guidebook).

For Use with ConsensusDOCS 200, Standard Form of Agreement and General Conditions Between Owner and Constructor (Where the Contract Price is a Lump Sum) and ConsensusDOCS 500, Standard Agreement and General Conditions Between Owner and Construction Manager.

The Trade Contractor, \_\_\_\_\_ (the "Trade Contractor") has submitted a Bid to the Owner, \_\_\_\_\_ (the "Owner") for the \_\_\_\_\_ (the "Project") in accordance with the Bidding Documents, including Drawings and Specifications prepared by \_\_\_\_\_ (the "Design Professional").

---

**IMPORTANT:** A vertical line in the margin indicates a change has been made to the original text. Prior to signing, recipients may wish to request from the party producing the document a "redlined" version indicating changes to the original text. Consultation with legal and insurance counsel and careful review of the entire document are strongly encouraged.  
 ConsensusDOCS 262 • BID BOND Copyright © 2007, Revised 2009 and 2011, ConsensusDOCS LLC. AN INDIVIDUAL PURCHASE OF THIS DOCUMENT PERMITS THE USER TO PRINT ONE CONTRACT FOR ONE PROJECT ONLY. YOU MAY ONLY MAKE COPIES OF A COMPLETED DOCUMENT FOR DISTRIBUTION TO PARTIES IN DIRECT CONNECTION WITH THE SPECIFIC CONSTRUCTION PROJECT. ANY OTHER USES, INCLUDING COPYING THE DOCUMENT, ARE STRICTLY PROHIBITED.

By virtue of this Bid Bond (the "Bond"), the Constructor as Principal and \_\_\_\_\_ as Surety ("Surety"), are bound to the Owner as Oblige in the maximum amount \_\_\_\_\_, Dollars (\$\_\_\_\_\_) (the "Bond Sum"). The Constructor and Surety hereby bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein.

1. If the Oblige shall accept the bid of the Constructor, the Constructor shall enter into an Agreement with the Oblige in accordance with the terms of such Bid.
2. Constructor shall procure such bond or bonds as are specified in the Contract Documents for the faithful performance of the Work and for the prompt payment of labor and materials furnished in the performance of the Work.
3. If the Constructor fails to enter such Agreement and give such bonds, the Constructor shall pay to the Oblige the difference between the amount of Constructor's bid and the amount of such agreement the Oblige in good faith executes with another Party to perform the Work covered by Constructor's Bid, not to exceed the Bond Sum stated above.
4. If the Constructor shall fulfill its obligation under Articles 1 through 3, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

This Bond is entered into as of \_\_\_\_\_ (date)

SURETY: \_\_\_\_\_ (seal)

BY: .....

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_ (Attach Power of Attorney)

Witness: .....

(Additional signatures, if any, appear on attached page)

Constructor: \_\_\_\_\_ (seal)

BY: .....

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

Witness: .....

(Additional signatures, if any, appear on attached page)

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**IMPORTANT:** A vertical line in the margin indicates a change has been made to the original text. Prior to signing, recipients may wish to request from the party producing the document a "redlined" version indicating changes to the original text. Consultation with legal and insurance counsel and careful review of the entire document are strongly encouraged.  
ConsensusDOCS 262 • BID BOND Copyright © 2007, Revised 2009 and 2011, ConsensusDOCS LLC, AN INDIVIDUAL PURCHASE OF THIS DOCUMENT PERMITS THE USER TO PRINT ONE CONTRACT FOR ONE PROJECT ONLY, YOU MAY ONLY MAKE COPIES OF A COMPLETED DOCUMENT FOR DISTRIBUTION TO PARTIES IN DIRECT CONNECTION WITH THE SPECIFIC CONSTRUCTION PROJECT, ANY OTHER USES, INCLUDING COPYING THE DOCUMENT, ARE STRICTLY PROHIBITED.

**SECTION 00 5200**

**AGREEMENT FORM**

**PART 1 - GENERAL**

**1.01 AGREEMENT FORM**

- A. The Form of Agreement to be used on this project is a modified ConsensusDocs 802. A sample is attached following this page.

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

# ConsensusDocs 802

## STANDARD FORM OF AGREEMENT BETWEEN OWNER AND TRADE CONTRACTOR

(Where the Construction Manager Is the Owner's Agent)



### TABLE OF ARTICLES

1. AGREEMENT
2. GENERAL PROVISIONS
3. TRADE CONTRACTOR'S OBLIGATIONS
4. OWNER'S RESPONSIBILITIES
5. SUBCONTRACTS
6. TRADE CONTRACT TIME
7. TRADE CONTRACT PRICE
8. CHANGES
9. PAYMENT
10. INDEMNITY, INSURANCE, WAIVERS AND BONDS
11. SUSPENSION, NOTICE TO CURE AND TERMINATION OF AGREEMENT
12. DISPUTE MITIGATION AND RESOLUTION
13. MISCELLANEOUS PROVISIONS
14. TRADE CONTRACT DOCUMENTS

This Agreement has important legal and insurance consequences. Consultations with an attorney and with insurance and surety consultants are encouraged with respect to its completion or modification. Notes indicate where information is to be inserted to complete this Agreement.



## ARTICLE 1 AGREEMENT

This Trade Contractor Agreement is made effective as of the XX day of Month, Year , by and between the

OWNER

State of Iowa - DAS, Department of Administrative Services ("DAS"). DAS's principal office is located: 109 SE 13th Street, Des Moines, IA 50319-0120.

and the

TRADE CONTRACTOR

*Contractor Name*

*Address*

*City, State, Zip*

for work in connection with the following

PROJECT

*XXXX.XX - Project Name*

The CONSTRUCTION MANAGER is

*Construction Manager Name*

*Address*

*City, State, Zip*

The DESIGN PROFESSIONAL for the Project is

*Designer Name*

*Address*

*City, State, Zip*

Notice to the Parties shall be given at the above addresses.

## ARTICLE 2 GENERAL PROVISIONS

2.1 RELATIONSHIP OF PARTIES The Owner and the Trade Contractor agree to proceed with this Agreement on the basis of mutual trust, good faith and fair dealing and shall cooperate with each other and with the Construction Manager and Design Professional in furthering the Owner's interests. The Trade Contractor shall use its diligent efforts to perform the work in an expeditious manner consistent with the Trade Contract Documents. The Owner and the Trade Contractor will endeavor to promote harmony and cooperation among all Project participants.

2.1.1 The Owner and the Trade Contractor shall perform their obligations with integrity, ensuring at a minimum that

2.1.1.1 conflicts of interest shall be avoided or disclosed promptly to the other Party; and

2.1.1.2 the Trade Contractor and the Owner warrant that they have not and shall not pay nor receive any contingent fees or gratuities to or from the other Party, including its agents, officers and employees, Subcontractors or others for whom they may be liable, to secure preferential



treatment.

**2.2 PROJECT ORGANIZATION** This Agreement is for the performance of work described herein in connection with the construction of the Project. The Owner also may enter into separate agreements with other trade contractors for other portions of the Project. The Owner has entered or will enter into a Construction Management Agreement with the Construction Manager, and a design agreement with the Design Professional.

**2.3 INDEPENDENT CONTRACTOR** The Trade Contractor represents that it is an independent contractor and that its performance of the Trade Contract Work it shall act as an independent contractor. Neither Trade Contractor nor any of its agents or employees shall act on behalf of the Owner except as provided in this Agreement or unless authorized in writing by the Owner.

**2.4 CONSTRUCTION MANAGER IS OWNER'S AGENT** The Construction Manager will represent the Owner as its agent in the administration and management of this Agreement. Any instructions, reviews, approvals, orders or directions given to the Trade Contractor by the Construction Manager will be given on behalf of and as agent for the Owner. The Trade Contractor shall be obligated to respond or perform as if the same were given directly by the Owner. The Trade Contractor shall communicate and provide all requests and concerns regarding the Trade Contract Work to the Construction Manager. The Trade Contractor shall provide copies to the Construction Manager of all notices to the Owner required by and regarding this Agreement.

**2.5 CONSTRUCTION MANAGER NOT IN PRIVITY WITH TRADE CONTRACTOR** This Agreement shall not give the Trade Contractor any claim or right of action against the Construction Manager. The Trade Contractor and its subcontractors shall not be beneficiaries of any obligations of the Construction Manager. This Agreement shall not create a contractual relationship between any parties except the Owner and the Trade Contractor.

**2.5A NO THIRD-PARTY BENEFICIARY** There are no third-party beneficiaries of this Agreement.

**2.6 DESIGN PROFESSIONAL** The Owner, through its Design Professional, shall provide all architectural and engineering design services necessary for the completion of the Work, except the following:

#### No exceptions

The Trade Contractor shall not be required to provide professional services which constitute the practice of architecture or engineering except as otherwise provided in section 3.15.

2.6.1 The Owner shall obtain from the Design Professional either a license for Trade Contractor and Subcontractors to use the design documents prepared by the Design Professional or ownership of the copyrights for such design documents, and shall defend, indemnify and hold harmless the Trade Contractor against any suits or claims of infringement of any copyrights or licenses arising out of the use of the design documents. To the extent portions of this paragraph are in conflict with SF 396 (codified at Iowa Code Section 537A.5) said portions are void and unenforceable.

**2.7 EXTENT OF AGREEMENT** This Agreement is solely for the benefit of the Parties, represents the entire integrated agreement between the Parties, and supersedes all prior negotiations, representations and agreements, either written or oral. This Agreement and each and every provision is for the exclusive benefit of the Owner and the Trade Contractor and not for the benefit of any third party except to the extent expressly provided in this Agreement. In the event of conflict between this Agreement and any of the Exhibits or any other documents incorporated into this Agreement, the terms and provisions of this Agreement shall control.

#### 2.8 DEFINITIONS



2.8.1 Agreement means this ConsensusDocs 802 Standard Form of Agreement Between Owner and Trade Contractor (Where the Construction Manager is the Owner's Agent), as modified by the Parties, and Exhibits and Attachments made part of this Agreement upon its execution.

2.8.2 Design Professional means the Architect, Design Professional or Engineer identified in ARTICLE 1 and its consultants, retained by Owner to perform design services for the Project, and licensed in the State in which the Project is located. The use of the term Design Professional in this Agreement is for convenience and is not intended to imply or infer that the individual or entity named in ARTICLE 1 will provide design professional services in a discipline in which it is not licensed.

2.8.3 Construction Manager means the Construction Manager identified in ARTICLE 1 and its authorized representative.

2.8.4 The Construction Schedule is the document initially prepared by and updated by the Construction Manager and approved by the Owner that indicates proposed activity sequences, durations, or milestone dates for such activities as receipt and approval of pertinent information, issuance of the Construction Documents, the preparation and processing of shop drawings and samples, delivery of materials or equipment requiring long-lead-time procurement, Owner's occupancy requirements and estimated dates of Substantial Completion and Final Completion of the Project.

2.8.5 The term Day shall mean calendar day unless otherwise specifically defined.

2.8.6 Final Completion occurs on the date when the Trade Contractor's obligations under this Agreement are complete and accepted by the Owner and final payment becomes due and payable, as established in ARTICLE 6. This date shall be confirmed by a Certificate of Final Completion signed by the Owner and the Trade Contractor.

2.8.7 A Hazardous Material is any substance or material identified now or in the future as toxic or hazardous under any federal, state or local law or regulation, or any other substance or material which may be considered hazardous or otherwise subject to statutory or regulatory requirements governing handling, disposal or clean-up.

2.8.8 A Material Supplier is a person or entity retained by the Trade Contractor to provide material or equipment for the Trade Contract Work. This definition is not intended to, and shall not be interpreted to, expand or modify the definition(s) of materials or material suppliers contained in Iowa Code Chapter 573.

2.8.9 Others means other contractors, material suppliers, and persons at the Worksite who are not employed by the Trade Contractor or Subcontractors.

2.8.10 The term Overhead shall mean a) payroll costs and other compensation of Trade Contractor employees in the Trade Contractor's principal and branch offices; b) general and administrative expenses of the Trade Contractor's principal and branch offices including deductibles paid on any insurance policy and c) the Trade Contractor's capital expenses, including interest on capital used for the Work.

2.8.11 Owner is the person or entity identified in ARTICLE 1 as Owner, and includes the Owner's representative.

2.8.12 The Project, as identified in ARTICLE 1, is the building, facility or other improvements for which the Trade Contractor is to perform the Trade Contract Work.

2.8.13 A Subcontractor is a person or entity retained by the Trade Contractor as an independent contractor to provide the labor, materials, equipment or services necessary to complete a specific



portion of the Work. This definition is not intended to, and shall not be interpreted to, expand or modify the definition(s) of materials or material suppliers contained in Iowa Code Chapter 573.

2.8.14 Per Iowa Code Section 26.13, "substantially completed" means the first date on which any of the following occurs: (1) Completion of the Project (or Trade Contract Work, in the case of the multiple Trade Contractors) or when the Project (or Trade Contract Work in the case of multiple Trade Contractors) has been substantially completed in general accordance with the terms and provisions of the contract. (2) The work on the Project (or Trade Contract Work in the case of multiple Trade Contractors) or on the designated portion is substantially completed in general accordance with the terms of the contract so that the State Iowa can occupy or utilize the Project or designated portion of the Project for its intended purpose. (3) The Project (or Trade Contract Work in the case of multiple Trade Contractors) is certified as having been substantially completed by either of the following: (a) the architect or engineer authorized to make such certification (which is defined in this Agreement as the Design Professional). (b) The authorized contract representative (which is defined in this Agreement as the Owner's Representative). (4) The State of Iowa is occupying or utilizing the Project (or Trade Contract Work in the case of multiple Trade Contractors) for its intended purpose. This subparagraph shall not apply to highway, bridge, or culvert projects.

2.8.15 Terrorism means a violent act, or an act that is dangerous to human life, property or infrastructure, that is committed by an individual or individuals and that appears to be part of an effort to coerce a civilian population or to influence the policy or affect the conduct of any government by coercion. Terrorism includes, but is not limited to, any act certified by the United States government as an act of terrorism pursuant to the Terrorism Risk Insurance Act, as amended.

2.8.16 A Trade Contract Change Order is a written order signed by the Owner and the Trade Contractor after execution of this Agreement, indicating changes in the scope of the Trade Contract Work, the Trade Contract Price or Trade Contract Time, including substitutions proposed by the Trade Contractor and accepted by the Owner. Trade Contract Change Orders shall be executed using the ConsensusDOCS 813 Trade Contract Change Order (CM as Owner's Agent) form document with exhibits attached as necessary.

2.8.17 The Trade Contract Documents consist of this Agreement (as modified), the drawings, specifications, addenda issued prior to execution of this Agreement, approved submittals, information furnished by the Owner under subsection 4.1.3, the bid documents, other documents listed in this Agreement and any modifications issued after execution.

2.8.18 The Trade Contract Price is the amount indicated in section 7.1 of this Agreement.

2.8.19 The Trade Contract Time is the period between the Date of Commencement and Final Completion.

2.8.20 Trade Contract Work means the construction and services provided by the Trade Contractor.

2.8.20.1 Changed Work means work that is different from the original scope of Trade Contract Work; or work that changes the Trade Contract Price or Trade Contract Time.

2.8.20.2 Defective Work is any portion of the Trade Contract Work that is not in conformance with the Trade Contract Documents.

2.8.21 The Trade Contractor is the person or entity identified in ARTICLE 1 and includes the Trade Contractor's Representative.

2.8.22 The term Work means the construction and services necessary or incidental to fulfill the Trade



Contractors' obligations for the Project. The Work may refer to the whole Project or only a part of the Project.

2.8.23 Worksite means the geographical area at the location of the Project as identified in ARTICLE 1 where the Trade Contract Work is to be performed.

### ARTICLE 3 TRADE CONTRACTOR'S OBLIGATIONS

#### 3.1 GENERAL RESPONSIBILITIES

3.1.1 RESPONSIBILITIES The Trade Contractor shall provide all of the labor, materials, equipment and services necessary to complete the Trade Contract Work, all of which shall be provided in full accord with or as reasonably inferable from the Trade Contract Documents as being necessary to produce the indicated results.

3.1.2 The Trade Contractor shall be responsible for the supervision and coordination of the Trade Contract Work, including the construction means, methods, techniques, sequences and procedures utilized, unless the Trade Contract Documents give other specific instructions. In such case, the Trade Contractor shall not be liable to the Owner for damages resulting from compliance with such instructions unless the Trade Contractor recognized and failed to timely report to the Owner any error, inconsistency, omission or unsafe practice that it discovered in the specified construction means, methods, techniques, safety, sequences or procedures.

3.1.3 The Trade Contractor shall perform Trade Contract Work only within locations allowed by the Trade Contract Documents, applicable permits and applicable local law.

#### 3.2 COOPERATION WITH WORK OF OWNER AND OTHERS

3.2.1 The Owner may perform work at the Worksite directly or by Others. Any agreements with Others to perform construction or operations related to the Project shall include provisions pertaining to insurance, indemnification, waiver of subrogation, coordination, interference, clean up and safety which are substantively the same as the corresponding provisions of this Agreement.

3.2.2 In the event that the Owner elects to perform work at the Worksite directly or by Others, the Trade Contractor and the Owner shall, with the assistance of the Construction Manager, coordinate the activities of all forces at the Worksite and agree upon fair and reasonable schedules and operational procedures for Worksite activities. The Owner shall require each separate contractor to cooperate with the Trade Contractor and assist with the coordination of activities and the review of construction schedules and operations. The Trade Contract Price and Trade Contract Time shall be equitably adjusted, as mutually agreed by the Parties, for subsequent changes made necessary by the coordination of construction activities, and the Trade Contractor's construction schedule and the Construction Schedule shall be revised accordingly. The Trade Contractor, Owner and Others shall adhere to the revised Construction Schedule until it may subsequently be revised.

3.2.3 With regard to the work of the Owner and Others, the Trade Contractor shall (a) proceed with the Trade Contract Work in a manner which does not hinder, delay or interfere with the work of the Owner or Others or cause the work of the Owner or Others to become defective, (b) afford the Owner or Others reasonable access for introduction and storage of their materials and equipment and performance of their activities, and (c) coordinate the Trade Contractor's construction and operations with theirs as required by this section.

3.2.4 Before proceeding with any portion of the Trade Contract Work affected by the construction or operations of the Owner or Others, the Trade Contractor shall give the Owner and Construction



Manager prompt written notification of any defects the Trade Contractor discovers in their work which will prevent the proper execution of the Trade Contract Work. The Trade Contractor's obligations in this section do not create a responsibility for the work of the Owner or Others, but are for the purpose of facilitating the Trade Contract Work. If the Trade Contractor does not notify the Owner and Construction Manager of patent defects interfering with the performance of the Trade Contract Work, the Trade Contractor acknowledges that the work of the Owner or Others is not defective and is acceptable for the proper execution of the Trade Contract Work. Following receipt of written notice from the Trade Contractor of defects, the Owner, through the Construction Manager, shall promptly inform the Trade Contractor what action, if any, the Trade Contractor shall take with regard to the defects.

### 3.3 RESPONSIBILITY FOR PERFORMANCE

3.3.1 In order to facilitate its responsibilities for completion of the Work in accordance with and as reasonably inferable from the Trade Contract Documents, prior to commencing the Work the Trade Contractor shall examine and compare the drawings and specifications with information furnished by the Owner pursuant to subsection 4.1.3, relevant field measurements made by the Trade Contractor and any visible conditions at the Worksite affecting the Trade Contract Work.

3.3.2 If in the course of the performance of the obligations in subsection 3.3.1 the Trade Contractor discovers any errors, omissions or inconsistencies in the Contract Documents, the Trade Contractor shall promptly report them to the Owner and Construction Manager. It is recognized, however, that the Trade Contractor is not acting in the capacity of a licensed design professional, and that the Trade Contractor's examination is to facilitate construction and does not create an affirmative responsibility to detect errors, omissions or inconsistencies or to ascertain compliance with applicable laws, building codes or regulations. Following receipt of written notice from the Trade Contractor of defects, the Owner shall promptly inform the Trade Contractor what action, if any, the Trade Contractor shall take with regard to the defects.

3.3.3 The Trade Contractor shall have no liability for errors, omissions or inconsistencies discovered under subsections 3.3.1 and 3.3.2 unless the Trade Contractor fails to report a recognized problem to the Owner and Construction Manager.

3.3.4 The Trade Contractor may be entitled to additional costs or time if there are changes in the scope of the Trade Contract Work that increase the cost of the Work or increase the number of days required to perform the Work, respectively, because of clarifications or instructions arising out of the Trade Contractor's reports described in the three preceding Subsections.

### 3.4 CONSTRUCTION PERSONNEL AND SUPERVISION

3.4.1 The Trade Contractor shall provide competent supervision for the performance of the Trade Contract Work. Before commencing the Trade Contract Work, Trade Contractor shall notify Owner and Construction Manager in writing of the name and qualifications of its proposed superintendent(s) and project manager so Owner and Construction Manager may review the individual's qualifications. If, for reasonable cause, the Owner or Construction Manager refuses to approve the individual, or withdraws its approval after once giving it, Trade Contractor shall name a different superintendent or project manager for Owner's and Construction Manager's review. Any disapproved superintendent shall not perform in that capacity thereafter at the Worksite.

3.4.2 The Trade Contractor shall be responsible to the Owner for acts or omissions of parties or entities performing portions of the Trade Contract Work for or on behalf of the Trade Contractor or any of its Subcontractors.

3.4.3 The Trade Contractor shall permit only qualified persons to perform the Trade Contract Work. The



Trade Contractor shall enforce safety procedures, strict discipline and good order among persons performing the Trade Contract Work. If the Owner or Construction Manager determines that a particular person does not follow safety procedures, or is unfit or unskilled for the assigned work, the Trade Contractor shall immediately reassign the person on receipt of the Owner's or Construction Manager's written notice to do so.

3.4.4 TRADE CONTRACTOR'S REPRESENTATIVE The Trade Contractor's authorized representative is . The Trade Contractor's representative shall possess full authority to receive instructions from the Owner and to act on those instructions. The Trade Contractor shall notify the Owner and the Construction Manager in writing of a change in the designation of the Trade Contractor's representative. The Trade Contractor's representative is also authorized to bind the Trade Contractor in all matters relating to this Agreement including, without limitation, all matters requiring the Trade Contractor's approval, authorization, or written notice. The Trade Contractor's representative is also authorized to resolve disputes in accordance with Section 12.2 of this Agreement.

### 3.5 MATERIALS FURNISHED BY THE OWNER OR OTHERS

3.5.1 In the event the Trade Contract Work includes installation of materials or equipment furnished by the Owner or Others, it shall be the responsibility of the Trade Contractor to examine the items so provided and thereupon handle, store and install the items, unless otherwise provided in the Trade Contract Documents, with such skill and care as to provide a satisfactory and proper installation. Loss or damage due to acts or omissions of the Trade Contractor shall be the responsibility of the Trade Contractor and may be deducted from any amounts due or to become due the Trade Contractor. Any defects discovered in such materials or equipment shall be reported at once to the Owner and Construction Manager. Following receipt of written notice from the Trade Contractor of defects, the Owner shall promptly inform the Trade Contractor what action, if any, the Trade Contractor shall take with regard to the defects.

### 3.6 TESTS AND INSPECTIONS

3.6.1 The Trade Contractor shall schedule all required tests, approvals and inspections of the Trade Contract Work or portions thereof at appropriate times so as not to delay the progress of the Trade Contract Work or other work related to the Project. The Trade Contractor shall give proper notice to the Construction Manager and to all required parties of such tests, approvals and inspections. If feasible, the Owner and Others may timely observe the tests at the normal place of testing. Except as provided in subsection 3.6.3, the Owner shall bear all expenses associated with tests, inspections and approvals required by the Trade Contract Documents, which, unless otherwise agreed to, shall be conducted by an independent testing laboratory or entity retained by the Owner. Unless otherwise required by the Trade Contract Documents, required certificates of testing, approval or inspection shall be secured by the Trade Contractor and promptly delivered to the Owner and Construction Manager.

3.6.2 If the Owner, Construction Manager or appropriate authorities determine that tests, inspections or approvals in addition to those required by the Trade Contract Documents will be necessary, the Trade Contractor shall arrange for the procedures and give timely notice to the Owner, Construction Manager and Others who may observe the procedures. Costs of the additional tests, inspections or approvals are at the Owner's expense except as provided in subsection 3.6.3.

3.6.3 If the procedures described in subsections 3.6.1 and 3.6.2 indicate that portions of the Trade Contract Work fail to comply with the Trade Contract Documents, the Trade Contractor shall be responsible for costs of correction and retesting.

### 3.7 WARRANTY



3.7.1 The Trade Contract Work shall be executed in accordance with the Trade Contract Documents in a workmanlike manner. The Trade Contractor warrants that all materials and equipment shall be furnished in sufficient quantities to facilitate the proper and expeditious execution of the Trade Contract Work and shall be new unless otherwise specified, of good quality, in conformance with the Trade Contract Documents, and free from defective workmanship and materials. At the Owner's or Construction Manager's request, the Trade Contractor shall furnish satisfactory evidence of the quality and type of materials and equipment furnished. The Trade Contractor further warrants that the Trade Contract Work shall be free from material defects not intrinsic in the design or materials required in the Trade Contract Documents. The Trade Contractor's warranty does not include remedies for defects or damages caused by normal wear and tear during normal usage, use for a purpose for which the Project was not intended, improper or insufficient maintenance, modifications performed by the Owner or Others, or abuse. The Trade Contractor's warranty pursuant to this section shall commence on the Date of Substantial Completion.

3.7.2 The Trade Contractor shall obtain from its Subcontractors and material suppliers any special or extended warranties required by the Trade Contract Documents. All such warranties shall be listed in an attached Exhibit to this Agreement.

### 3.8 CORRECTION OF TRADE CONTRACT WORK WITHIN ONE YEAR

3.8.1 If, prior to Substantial Completion and within one year after the date of Substantial Completion of the Trade Contract Work, any Defective Work is found, the Owner shall promptly notify the Trade Contractor in writing. Unless the Owner provides written acceptance of the condition, the Trade Contractor shall promptly correct the Defective Work at its own cost and time and bear the expense of additional services required for correction of any Defective Work for which it is responsible. If within the one-year correction period the Owner discovers and does not promptly notify the Trade Contractor or give the Trade Contractor an opportunity to test or correct Defective Work as reasonably requested by the Trade Contractor, the Owner waives the Trade Contractor's obligation to correct that Defective Work as well as the Owner's right to claim a breach of the warranty with respect to that Defective Work.

3.8.2 With respect to any portion of Trade Contract Work first performed after Substantial Completion, the one-year correction period shall be extended by the period of time between Substantial Completion and the actual performance of the later Trade Contract Work. Correction periods shall not be extended by corrective work performed by the Trade Contractor.

3.8.3 If the Trade Contractor fails to correct Defective Work within a reasonable time after receipt of written notice from the Owner prior to final payment, the Owner may correct it in accordance with the Owner's right to carry out the Trade Contract Work in section 11.2. In such case, an appropriate Trade Contract Change Order shall be issued deducting the cost of correcting such deficiencies from payments then or thereafter due the Trade Contractor. If payments then or thereafter due Trade Contractor are not sufficient to cover such amounts, the Trade Contractor shall pay the difference to the Owner.

3.8.4 If after the one-year correction period but before the applicable limitation period the Owner discovers any Defective Work, the Owner shall, unless the Defective Work requires emergency correction, promptly notify the Trade Contractor. If the Trade Contractor elects to correct the Defective Work, it shall provide written notice of such intent within fourteen (14) Days of its receipt of notice from the Owner. The Trade Contractor shall complete the correction of Defective Work within a time frame mutually agreed upon by the Trade Contractor and the Owner. If the Trade Contractor does not elect to correct the Defective Work, the Owner may have the Defective Work corrected by itself or Others and charge the Trade Contractor for the reasonable cost of the correction and other directly related



expenses. Owner shall provide Trade Contractor with an accounting of correction costs it incurs.

3.8.5 If the Trade Contractor's correction or removal of Defective Work causes damage to or destroys other completed or partially completed Work or existing buildings, the Trade Contractor shall be responsible for the cost of correcting the destroyed or damaged property.

3.8.6 The one-year period for correction of Defective Work does not constitute a limitation period with respect to the enforcement of the Trade Contractor's other obligations under the Trade Contract Documents.

3.8.7 Prior to final payment, at the Owner's option and with the Trade Contractor's agreement, the Owner may elect to accept Defective Work rather than require its removal and correction. In such case the Contract Price shall be equitably adjusted for any diminution in the value of the Project caused by such Defective Work. Before the Owner accepts any such change it must be documented in writing with a Change Order signed by both the Trade Contractor and Owner.

### 3.9 CORRECTION OF COVERED TRADE CONTRACT WORK

3.9.1 On request of the Owner or Construction Manager, Trade Contract Work that has been covered without a requirement that it be inspected prior to being covered may be uncovered for the Owner's or Construction Manager's inspection. The Owner shall pay for the costs of uncovering and replacement if the Work proves to be in conformance with the Trade Contract Documents, or if the defective condition was caused by the Owner or Others. If the uncovered Trade Contract Work proves to be defective, the Trade Contractor shall pay the costs of uncovering and replacement.

3.9.2 If contrary to specific requirements in the Trade Contract Documents or contrary to a specific request from the Owner or Construction Manager, a portion of the Trade Contract Work is covered, the Owner or Construction Manager, by written request, may require the Trade Contractor to uncover the Trade Contract Work for the Owner's or Construction Manager's observation. In this circumstance the Trade Contract Work shall be uncovered and recovered at the Trade Contractor's expense and with no adjustment to the Trade Contract Time. Costs incurred by the Owner as a direct result of the above shall be deducted from the Trade Contract Price.

### 3.10 SAFETY OF PERSONS AND PROPERTY

3.10.1 SAFETY PRECAUTIONS AND PROGRAMS The Trade Contractor shall have overall responsibility for safety precautions and programs in the performance of the Trade Contract Work. While this section establishes the responsibility for safety between the Owner and Trade Contractor, it does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with the provisions of applicable laws and regulations.

3.10.2 The Trade Contractor shall seek to avoid injury, loss or damage to persons or property by taking reasonable steps to protect:

3.10.2.1 its employees and other persons at the Worksite;

3.10.2.2 materials and equipment stored at on-site or off-site locations for use in the Trade Contract Work; and

3.10.2.3 property located at the site and adjacent to Trade Contract Work areas, whether or not the property is part of the Trade Contract Work.

3.10.3 TRADE CONTRACTOR'S SAFETY REPRESENTATIVE The Trade Contractor's Worksite Safety Representative is who shall act as the Trade Contractor's authorized safety representative with a duty



to prevent accidents in accordance with subsection 3.10.2 If no individual is identified in this section, the authorized safety representative shall be the Trade Contractor's Representative. The Trade Contractor shall report immediately in writing to the Owner and Construction Manager all recordable accidents and injuries occurring at the Worksite. When the Trade Contractor is required to file an accident report with a public authority, the Trade Contractor shall furnish a copy of the report to the Owner and Construction Manager.

3.10.4 The Trade Contractor shall provide the Owner and Construction Manager with copies of all notices required of the Trade Contractor by law or regulation. The Trade Contractor's safety program shall comply with the requirements of governmental and quasi-governmental authorities having jurisdiction.

3.10.5 Damage or loss not insured under property insurance which may arise from the Trade Contract Work, to the extent caused by the negligent acts or omissions of the Trade Contractor, or anyone for whose acts the Trade Contractor may be liable, shall be promptly remedied by the Trade Contractor.

3.10.6 If the Owner or Construction Manager deems any part of the Trade Contract Work or Worksite unsafe, the Owner or Construction Manager, without assuming responsibility for the Trade Contractor's safety program, may require the Trade Contractor to stop performance of the Trade Contract Work or take corrective measures satisfactory to the Owner, or both. If the Trade Contractor does not adopt corrective measures, the Owner may perform them and deduct their cost from the Trade Contract Price. The Trade Contractor agrees to make no claim for damages, for an increase in the Trade Contract Price or for a change in the Trade Contract Time based on the Trade Contractor's compliance with the Owner's or Construction Manager's reasonable request.

### 3.11 EMERGENCIES

3.11.1 In an emergency, the Trade Contractor shall act in a reasonable manner to prevent personal injury or property damage. Any change in the Trade Contract Price or Trade Contract Time resulting from the actions of the Trade Contractor in an emergency situation shall be determined as provided in ARTICLE 8.

### 3.12 HAZARDOUS MATERIALS

3.12.1 The Trade Contractor shall not be obligated to commence or continue Trade Contract Work until any Hazardous Material discovered at the Worksite has been removed, rendered or determined to be harmless by the Owner as certified by an independent testing laboratory and approved by the appropriate government agency.

3.12.2 If after the commencement of the Trade Contract Work a Hazardous Material is discovered at the Worksite, the Trade Contractor shall be entitled to immediately stop Trade Contract Work in the affected area. The Trade Contractor shall report the condition to the Owner, the Construction Manager, and, if required, the government agency with jurisdiction.

3.12.3 The Trade Contractor shall not be required to perform any Trade Contract Work relating to or in the area of Hazardous Material without written mutual agreement.

3.12.4 The Owner shall be responsible for retaining an independent testing laboratory to determine the nature of the Hazardous Material encountered and whether the material requires corrective measures or remedial action. Such measures shall be the sole responsibility of the Owner, and shall be performed in a manner minimizing any adverse effects upon the Trade Contract Work. The Trade Contractor shall resume Trade Contract Work in the area affected by any Hazardous Material only upon written agreement between the Parties after the Hazardous Material has been removed or rendered harmless



and only after approval, if necessary, of the governmental agency with jurisdiction.

3.12.5 If the Trade Contractor incurs additional costs or is delayed due to the presence or remediation of Hazardous Material, the Trade Contractor shall be entitled to an equitable adjustment in the Trade Contract Price or the Trade Contract Time.

3.12.6 To the extent not caused by the negligent acts or omissions of the Trade Contractor, its Subcontractors and Sub-subcontractors, and the agents, officers, directors and employees of each of them, the Owner shall defend, indemnify and hold harmless the Trade Contractor, its Subcontractors and Sub-subcontractors, and the agents, officers, directors and employees of each of them, from and against any and all direct claims, damages, losses, costs and expenses, including but not limited to attorney's fees, costs and expenses incurred in connection with any dispute resolution process, to the extent permitted pursuant to section 6.6, arising out of or relating to the performance of the Trade Contract Work in any area affected by Hazardous Material. To the extent portions of this paragraph are in conflict with SF 396 (codified at Iowa Code Section 537A.5) said portions are void and unenforceable.

### 3.12.7 MATERIALS BROUGHT TO THE WORKSITE

3.12.7.1 Material Safety Data (MSD) sheets as required by law and pertaining to materials or substances used or consumed in the performance of the Trade Contract Work, whether obtained by the Trade Contractor, Subcontractors, the Owner or Others, shall be maintained at the Worksite by the Trade Contractor and made available to the Owner, Construction Manager, Subcontractors and Others.

3.12.7.2 The Trade Contractor shall be responsible for the proper delivery, handling, application, storage, removal and disposal of all materials and substances brought to the Worksite by the Trade Contractor in accordance with the Trade Contract Documents and used or consumed in the performance of the Trade Contract Work.

3.12.7.3 The Trade Contractor shall indemnify and hold harmless the Owner, Construction Manager, their agents, officers, directors and employees, from and against any and all claims, damages, losses, costs and expenses, including but not limited to attorney's fees, costs and expenses incurred in connection with any dispute resolution procedure, arising out of or relating to the delivery, handling, application, storage, removal and disposal of all materials and substances brought to the Worksite by the Trade Contractor in accordance or not in accordance with the Trade Contract Documents. To the extent portions of this paragraph are in conflict with SF 396 (codified at Iowa Code Section 537A.5) said portions are void and unenforceable.

3.12.8 The terms of this section shall survive the completion of the Trade Work or any termination of this Agreement.

### 3.13 SUBMITTALS

3.13.1 The Trade Contractor shall submit to the Construction Manager, and the Design Professional, for review and approval all shop drawings, samples, product data and similar submittals required by the Trade Contract Documents. Submittals may be submitted in electronic form if required in accordance with ConsensusDocs 200.2 and subsection 4.4.1. The Trade Contractor shall be responsible to the Owner for the accuracy and conformity of its submittals to the Trade Contract Documents. The Trade Contractor shall prepare and deliver its submittals in a manner consistent with the Construction Schedule and in such time and sequence so as not to delay the performance of the Trade Contract Work or the work of the Owner and Others. When the Trade Contractor delivers its submittals the Trade Contractor shall identify in writing for each submittal all changes, deviations or substitutions from the requirements of the Trade Contract Documents. The review and approval of any Trade Contractor



submittal shall not be deemed to authorize changes, deviations or substitutions from the requirements of the Trade Contract Documents unless express written approval is obtained from the Owner specifically authorizing such deviation, substitution or change. To the extent a change, deviation or substitution causes an impact to the Contract Price or Contract Time, such approval shall be promptly memorialized in a Change Order. Further, the Construction Manager and Design Professional shall not make any change, deviation or substitution through the submittal process without specifically identifying and authorizing such deviation to the Trade Contractor. In the event that the Trade Contract Documents do not contain submittal requirements pertaining to the Trade Contract Work, the Trade Contractor agrees upon request to submit in a timely fashion to the Construction Manager and the Design Professional for review and approval any shop drawings, samples, product data, manufacturers' literature or similar submittals as may reasonably be required by the Owner, Construction Manager, or Design Professional.

3.13.2 The Owner shall be responsible for review and approval of submittals with reasonable promptness to avoid causing delay.

3.13.3 The Trade Contractor shall perform all Trade Contract Work strictly in accordance with approved submittals. Approval of shop drawings is not authorization to Trade Contractor to perform Changed Work, unless the procedures of ARTICLE 8 are followed. Approval does not relieve the Trade Contractor from responsibility for Defective Work resulting from errors or omissions of any kind on the approved Shop Drawings.

3.13.4 Record copies of the following, incorporating field changes and selections made during construction, shall be maintained by the Trade Contractor at the Project site and available to the Owner upon request: drawings, specifications, addenda, Trade Contract Change Order and other modifications, and required submittals including product data, samples and shop drawings.

3.13.5 No substitutions shall be made in the Trade Contract Work unless permitted in the Trade Contract Documents and then only after the Trade Contractor obtains approvals required under the Trade Contract Documents for substitutions. All such substitutions shall be promptly memorialized in a Change Order no later than seven (7) Days following approval by the Owner and, if applicable, provide for an adjustment in the Contract Price or Contract Time.

3.13.6 The Trade Contractor shall prepare and submit to the Construction Manager for submission to the Owner

(Check one only)

- final marked up as-built drawings
- updated electronic data, in accordance with ConsensusDocs 200.2 and section 4.4.1
- such documentation as defined by the Parties by attachment to this Agreement,

in general documenting how the various elements of the Trade Contract Work were actually constructed or installed.

### 3.14 PROFESSIONAL SERVICES

3.14.1 The Trade Contractor may be required to procure professional services in order to carry out its responsibilities for construction means, methods, techniques, sequences and procedures for such services specifically called for by the Contract Documents. The Trade Contractor shall obtain these professional services and any design certifications required from State of Iowa licensed design professionals. All drawings, specifications, calculations, certifications and submittals prepared by such



design professionals shall bear the signature and seal of such design professionals and the Owner and the Design Professional shall be entitled to rely upon the adequacy, accuracy and completeness of such design services. If professional services are specifically required by the Contract Documents, the Owner shall indicate all required performance and design criteria. The Trade Contractor shall not be responsible for the adequacy of such performance and design criteria. The Trade Contractor shall not be required to provide such services in violation of existing laws, rules and regulations in the jurisdiction where the Project is located.

### 3.15 WORKSITE CONDITIONS

3.15.1 WORKSITE VISIT The Trade Contractor acknowledges that it has visited, or has had the opportunity to visit, the Worksite to visually inspect the general and local conditions which could affect the Trade Contract Work.

3.15.2 CONCEALED OR UNKNOWN SITE CONDITIONS If the conditions at the Worksite are (a) subsurface or other concealed physical conditions which are materially different from those indicated in the Trade Contract Documents, or (b) unusual and unknown physical conditions which are materially different from conditions ordinarily encountered and generally recognized as inherent in Trade Contract Work provided for in the Trade Contract Documents, the Trade Contractor shall stop Trade Contract Work and give immediate written notice of the condition to the Owner, Construction Manager and the Design Professional. The Trade Contractor shall not be required to perform any work relating to the unknown condition without the written mutual agreement of the Parties. Any change in the Contract Price or the Contract Time as a result of the unknown condition shall be determined as provided in this article. The Trade Contractor shall provide the Owner and the Construction Manager with written notice of any claim as a result of unknown conditions within the time period set forth in section 8.4.

### 3.16 PERMITS AND TAXES

3.16.1 Trade Contractor shall give public authorities all notices required by law and, except for permits and fees which are the responsibility of the Owner pursuant to section 4.2, shall obtain and pay for all necessary permits, licenses and renewals pertaining to the Trade Contract Work. Trade Contractor shall provide to Owner copies of all notices, permits, licenses and renewals required under this Agreement.

3.16.2 Trade Contractor shall pay all applicable taxes legally enacted when bids are received or negotiations concluded for the Trade Contract Work provided by the Trade Contractor.

3.16.3 The Contract Price or Contract Time shall be equitably adjusted by Trade Contract Change Order for additional costs resulting from any changes in laws, ordinances, rules and regulations enacted after the date of this Agreement, including increased taxes.

3.16.3 (Deleted)

### 3.17 CUTTING, FITTING AND PATCHING

3.17.1 The Trade Contractor shall perform cutting, fitting and patching necessary to coordinate the various parts of the Trade Contract Work and to prepare its Trade Contract Work for the work of the Owner or Others.

3.17.2 Cutting, patching or altering the work of the Owner or Others shall be done with the prior written approval of the Owner. Such approval shall not be unreasonably withheld.

### 3.18 CLEANING UP

3.18.1 The Trade Contractor shall regularly remove debris and waste materials at the Worksite resulting



from the Trade Contract Work. Prior to discontinuing Trade Contract Work in an area, the Trade Contractor shall clean the area and remove all rubbish and its construction equipment, tools, machinery, waste and surplus materials. The Trade Contractor shall minimize and confine dust and debris resulting from construction activities. At the completion of the Trade Contract Work, the Trade Contractor shall remove from the Worksite all construction equipment, tools, surplus materials, waste materials and debris.

3.18.2 If the Trade Contractor fails to commence compliance with cleanup duties within two (2) business Days after written notification from the Owner or the Construction Manager of noncompliance, the Owner may implement appropriate cleanup measures without further notice and the cost shall be deducted from any amounts due or to become due the Trade Contractor in the next payment period.

3.19 ACCESS TO TRADE CONTRACT WORK The Trade Contractor shall facilitate the access of the Owner, Construction Manager, Design Professional and Others to Trade Contract Work in progress.

3.20 COST MONITORING The Trade Contractor shall provide the Construction Manager with cost monitoring information appropriate for the manner of Trade Contractor's compensation, to enable the Construction Manager to develop and track construction and project budgets, including amounts for work in progress, uncompleted work and proposed changes.

3.21 ROYALTIES, PATENTS AND COPYRIGHTS The Trade Contractor shall pay all royalties and license fees which may be due on the inclusion of any patented or copyrighted materials, methods or systems selected by the Trade Contractor and incorporated in the Trade Contract Work. The Trade Contractor shall defend, indemnify and hold the Owner harmless from all suits or claims for infringement of any patent rights or copyrights arising out of such selection. The Owner agrees to indemnify and hold the Trade Contractor harmless from any suits or claims of infringement of any patent rights or copyrights arising out of any patented or copyrighted materials, methods or systems specified by the Owner, Construction Manager and Design Professional. To the extent portions of this paragraph are in conflict with SF 396 (codified at Iowa Code Section 537A.5) said portions are void and unenforceable.

3.22 CONFIDENTIALITY The Owner shall treat as confidential information all of the Trade Contractor's estimating systems and historical and parameter cost data that may be disclosed to the Owner in connection with the performance of this Agreement if they are specified and marked as confidential and shall mark them. If a document is not marked as "Confidential" it will not be treated as such. Nothing contained herein, however, shall be interpreted in a manner that modifies or is in conflict with the purpose and application of the open records laws contained in the Code of Iowa.

## ARTICLE 4 OWNER'S RESPONSIBILITIES

### 4.1 INFORMATION SERVICES

4.1.1 FULL INFORMATION Any information or services to be provided by the Owner shall be provided in a timely manner so as not to delay the Trade Contract Work.

4.1.2 FINANCIAL INFORMATION Upon the written request of the Trade Contractor, the Owner shall provide the Trade Contractor with evidence of Project financing. If requested in writing, evidence of such financing shall be a condition precedent to the Trade Contractor's commencing or continuing the Trade Contract Work. The Trade Contractor shall be notified by the Owner prior to any material change in Project financing.

4.1.3 WORKSITE INFORMATION Except to the extent that the Trade Contractor knows of any inaccuracy, the Trade Contractor is entitled to rely on Worksite information furnished by the Owner pursuant to this subsection. To the extent the Owner has obtained, or is required elsewhere in the



Trade Contract Documents to obtain, the following Worksite information, the Owner shall provide at the Owner's expense and with reasonable promptness:

4.1.3.1 information describing the physical characteristics of the site, including surveys, site evaluations, legal descriptions, data or drawings depicting existing conditions, subsurface conditions and environmental studies, reports and investigations;

4.1.3.2 tests, inspections and other reports dealing with environmental matters, Hazardous Material and other existing conditions, including structural, mechanical and chemical tests, required by the Trade Contract Documents or by law; and

4.1.3.3 any other information or services requested in writing by the Trade Contractor which are relevant to the Trade Contractor's performance of the Trade Contract Work and under the Owner's control. The information required by subsection 4.1.3 shall be provided in reasonable detail. Legal descriptions shall include easements, title restrictions, boundaries, and zoning restrictions. Worksite descriptions shall include existing buildings and other construction and all other pertinent site conditions. Adjacent property descriptions shall include structures, streets, sidewalks, alleys, and other features relevant to the Trade Contract Work. Utility details shall include available services, lines at the Worksite and adjacent and connection points. The information shall include public and private information, subsurface information, grades, contours, and elevations, drainage data, exact locations and dimensions, and benchmarks that can be used by the Trade Contractor in laying out the Trade Contract Work. The Trade Contractor shall in writing request from the Owner any information identified in Paragraph 4.1.3 that the Trade Contractor believes the Owner has obtained but has not provided to the Trade Contractor.

4.1.3.4 OWNER'S REPRESENTATIVE The Owner's representative is test. The Owner's representative shall have authority to bind the Owner in all matters relating to this Agreement including, without limitation, all matters requiring the Owner's approval, authorization or written notice. If the Owner changes its representative as listed above, the Owner shall notify the Trade Contractor in advance in writing. The Owner's Representative is also authorized to resolve disputes in accordance with Section 12.2 of this Agreement. The Construction Manager, while unauthorized to modify the Agreement or settle a dispute without the Owner's approval, however, does have the requisite authority to act as the Owner's agent throughout the construction of the Project in accordance with the contract between the Owner and the Construction Manager (ConsensusDOCS 801 as modified by the State of Iowa).

4.2 BUILDING PERMIT, FEES AND APPROVALS Except for those permits and fees related to the Trade Contract Work which are the responsibility of the Trade Contractor pursuant to subsection 3.16.1, the Owner shall secure and pay for all other permits, approvals, easements, assessments and fees required for the development, construction, use or occupancy of permanent structures or for permanent changes in existing facilities, including the building permit.

4.3 Deleted

4.4 TRADE CONTRACT DOCUMENTS Unless otherwise specified, Owner shall provide One (1) copies of the Trade Contract Documents to the Trade Contractor without cost. Additional copies will be provided to the Trade Contractor at cost. This paragraph is not intended to be in conflict with Iowa Code Section 26.3 requirement that a sufficient number of copies of the contract documents be made available to bidders without charge (but a deposit not to exceed \$250 per set may be required). If the Trade Contractor was required to make a deposit for a set of Trade Contract Documents for purposes of bidding then the Trade Contractor may elect to have the deposit returned instead of being provided with an additional copy.



4.4.1 DIGITIZED DOCUMENTS If the Owner requires that the Owner, Design Professional, Construction Manager and Trade Contractor exchange documents and data in electronic or digital form, prior to any such exchange, the Owner, Design Professional, Construction Manager and Trade Contractor shall agree on a written protocol governing all exchanges in ConsensusDocs 200.2 or a separate Agreement, which, at a minimum, shall specify: (a) the definition of documents and data to be accepted in electronic or digital form or to be transmitted electronically or digitally; (b) management and coordination responsibilities; (c) necessary equipment, software and services; (d) acceptable formats, transmission methods and verification procedures; (e) methods for maintaining version control; (f) privacy and security requirements; and (g) storage and retrieval requirements. Except as otherwise agreed to by the Parties in writing, the Parties shall each bear their own costs as identified in the protocol. In the absence of a written protocol, use of documents and data in electronic or digital form shall be at the sole risk of the recipient.

4.5 OWNER'S CUTTING AND PATCHING Cutting, patching or altering the Trade Contract Work by the Owner or Others shall be done with the prior written approval of the Trade Contractor, which approval shall not be unreasonably withheld.

4.6 OWNER'S RIGHT TO CLEAN UP In case of a dispute between the Trade Contractor and Others with regard to respective responsibilities for cleaning up at the Worksite, the Owner may implement appropriate cleanup measures after two (2) business Days' notice and allocate the cost among those responsible during the following pay period.

4.7 COST OF CORRECTING DAMAGED OR DESTROYED WORK With regard to damage or loss attributable to the acts or omissions of the Owner or Others and not to the Trade Contractor, the Owner may either (a) promptly remedy the damage or loss or (b) accept the damage or loss. If the Trade Contractor incurs additional costs or is delayed due to such loss or damage, the Trade Contractor shall be entitled to an equitable adjustment in the Trade Contract Price or Trade Contract Time.

## ARTICLE 5 SUBCONTRACTS

5.1 SUBCONTRACTORS The Trade Contract Work not performed by the Trade Contractor with its own forces shall be performed by Subcontractors.

### 5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE TRADE CONTRACT WORK

5.2.0 The Trade Contractor must identify all Subcontractors and suppliers within 48 hours of the published date and time for which bids must be submitted, in accordance with Iowa Code Section 8A.311, as amended by House File 646 in 2011. Subcontractors and suppliers may not be changed without the approval of the Owner. Requests for changing a Subcontractor or supplier must identify the reason for the proposed change, the name of the new Subcontractor or supplier, and the change in the subcontractor or supplier price as a result of the change. Any reduction in subcontractor or supplier price as a result of the change, if the change is approved by the Owner, shall be deducted from the Trade Contract Price via a deductive Change Order. Any such changes, if approved by the Owner, which result in an increase in the Trade Contract Price shall be borne by the Trade Contractor.

5.2.1 If the Owner has a reasonable objection to any proposed subcontractor or material supplier, the Owner shall notify the Trade Contractor in writing.

5.2.2 If the Owner has reasonably and promptly objected as provided in subsection 5.2.1, the Trade Contractor shall not contract with the proposed subcontractor or material supplier, and the Trade Contractor shall propose another Subcontractor acceptable to the Owner. To the extent the substitution results in an increase or decrease in the Trade Contract Price or Trade Contract Time, an appropriate



Trade Contract Change Order shall be issued as provided in ARTICLE 8.

5.3 BINDING OF SUBCONTRACTORS The Trade Contractor agrees to bind every Subcontractor (and require every Subcontractor to so bind its subcontractors) to all the provisions of this Agreement and the Trade Contract Documents as they apply to the Subcontractor's portion of the Trade Contract Work.

5.4 Deleted

#### 5.5 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.5.1 If this Agreement is terminated, each subcontract agreement shall be assigned by the Trade Contractor to the Owner, subject to the prior rights of any surety, provided that:

5.5.1.1 this Agreement is terminated by the Owner pursuant to sections 11.3 or 11.4; and

5.5.1.2 the Owner accepts such assignment after termination by notifying the Subcontractor and Trade Contractor in writing, and assumes all rights and obligations of the Contractor pursuant to each subcontract agreement.

5.5.2 If the Owner accepts such an assignment, and the Work has been suspended for more than thirty (30) consecutive Days, following termination, if appropriate, the Subcontractor's compensation shall be equitably adjusted as a result of the suspension.

### ARTICLE 6 TRADE CONTRACT TIME

#### 6.1 PERFORMANCE OF THE TRADE CONTRACT WORK

6.1.1 DATE OF COMMENCEMENT The Date of Commencement is the date of Owner's written notice to proceed unless otherwise set forth below:

6.1.2 TIME Substantial Completion of the Trade Contract Work shall be achieved in xxx (xx) Days from the Date of Commencement. Unless otherwise specified in the Certificate of Substantial Completion, the Trade Contractor shall achieve Final Completion within 30 Days after the date of Substantial Completion, subject to adjustments as provided for in the Trade Contract Documents.

6.1.3 Time limits stated above are of the essence of this Agreement.

6.1.4 Unless instructed by the Owner in writing, the Trade Contractor shall not knowingly commence the Trade Contract Work before the effective date of insurance to be provided by the Trade Contractor and Owner as required by the Trade Contract Documents.

6.2 CONSTRUCTION SCHEDULE Prior to the commencement of the construction of the Trade Contract Work, the Trade Contractor shall submit a copy of its critical path method (CPM) construction schedule showing the completion of the Trade Contract Work within the allowable number of days identified above. The Trade Contractor shall regularly update its CPM construction schedule for the Trade Contract Work and promptly furnish the Construction Manager on an ongoing basis scheduling information requested by the Construction Manager for the Trade Contract Work. In consultation with the Trade Contractor, the Construction Manager shall incorporate the Trade Contract Work and work of other trade contractors into an overall Construction Schedule for the entire Project. The Trade Contractor shall be bound by the Construction. Nothing in this Trade Contractor Agreement shall relieve the Trade Contractor of any liability for any unexcused failure to comply with its original schedule, the Construction Schedule, or any completion dates. The Construction Manager shall have the right to coordinate the Trade Contractors, including the right, if necessary, to change the time, order and priority in which the various portions of the Trade Contract Work and the other work associated with the Project shall be performed.



### 6.3 DELAYS AND EXTENSIONS OF TIME

6.3.1 If the Trade Contractor is delayed at any time in the commencement or progress of the Work by any cause beyond the control of the Trade Contractor, the Trade Contractor shall be entitled to an equitable extension of the Trade Contract Time if the Trade Contractor is able to show that the critical path of the Trade Contract Work was delayed by causes beyond the control of the Trade Contractor. Examples of causes beyond the control of the Trade Contractor include, but are not limited to, the following: acts or omissions of the Owner, the Design Professional, Construction Manager or Others; changes in the Work or the sequencing of the Work ordered by the Owner, or arising from decisions of the Owner that impact the time of performance of the Work; transportation delays not reasonably foreseeable; labor disputes not involving the Trade Contractor; general labor disputes impacting the Project but not specifically related to the Worksite; fire; terrorism, epidemics, adverse governmental actions, unavoidable accidents or circumstances; adverse weather conditions not reasonably anticipated; encountering Hazardous Materials; concealed or unknown conditions; delay authorized by the Owner pending dispute resolution; and suspension by the Owner under section 11.1. The Trade Contractor shall submit any requests for equitable extensions of Contract Time in accordance with the provisions of ARTICLE 8.

6.3.2 In addition, if the Trade Contractor is able to show that it incurred additional costs because the critical path of the Trade Contract Work was delayed by acts or omissions of the Owner, the Design Professional, Construction Manager or Others, changes in the Work or the sequencing of the Work ordered by the Owner, or arising from decisions of the Owner that impact the time of performance of the Work, encountering Hazardous Materials, or concealed or unknown conditions, delay authorized by the Owner pending dispute resolution or suspension by the Owner under section 11.1, then the Trade Contractor shall be entitled to an equitable adjustment in the Trade Contract Price subject to section 6.6.

6.3.3 NOTICE OF DELAYS In the event delays to the Trade Contract Work are encountered for any reason, the Trade Contractor shall provide prompt written notice to the Owner and the Construction Manager of the cause of such delays after Trade Contractor first recognizes the delay. The Owner and Trade Contractor agree to undertake reasonable steps to mitigate the effect of such delays.

6.4 NOTICE OF DELAY CLAIMS If the Trade Contractor believes it is due an equitable extension of Trade Contract Time or an equitable adjustment in Trade Contract Price as a result of a delay described in subsection 6.3.1, the Trade Contractor shall give the Owner and the Construction Manager written notice of the claim in accordance with section 8.4. If the Trade Contractor causes delay in the completion of the Trade Contract Work, the Owner shall be entitled to recover its additional costs subject to subsection 6.6. The Owner shall process any such claim against the Trade Contractor in accordance with ARTICLE 8.

### 6.5 LIQUIDATED DAMAGES

6.5.1 SUBSTANTIAL COMPLETION The Owner and the Trade Contractor agree that this Agreement  shall /  shall not (indicate one) provide for the imposition of liquidated damages based on the Date of Substantial Completion.

6.5.1.1 The Trade Contractor understands that if the Date of Substantial Completion established by this Agreement, as may be amended by subsequent Trade Change Order, is not attained, the Owner will suffer damages which are difficult to determine and accurately specify. The Trade Contractor agrees that if the Date of Substantial Completion is not attained the Trade Contractor shall pay the Owner Zero Dollars and No Cents (\$0.00) as liquidated damages and not as a penalty for each day that Substantial Completion extends beyond the Date of Substantial Completion. The liquidated damages provided herein shall be in lieu of all liability for any and all



extra costs, losses, expenses, claims, penalties and any other damages of whatsoever nature incurred by the Owner which are occasioned by any delay in achieving the Date of Substantial Completion.

6.5.2 FINAL COMPLETION The Owner and the Trade Contractor agree that this Agreement  shall /  shall not (indicate one) provide for the imposition of liquidated damages based on the Date of Final Completion.

6.5.2.1 The Trade Contractor understands that if the Date of Final Completion established by this Agreement, as may be amended by subsequent Trade Change Order is not attained, the Owner will suffer damages which are difficult to determine and accurately specify. The Trade Contractor agrees that if the Date of Final Completion is not attained the Trade Contractor shall pay the Owner Zero Dollars and No Cents (\$0.00) as liquidated damages and not as a penalty for each day that Final Completion extends beyond the Date of Final Completion. The liquidated damages provided herein shall be in lieu of all liability for any and all extra costs, losses, expenses, claims, penalties and any other damages of whatsoever nature incurred by the Owner which are occasioned by any delay in achieving the Date of Final Completion.

6.5.3 OTHER LIQUIDATED DAMAGES The Owner and the Trade Contractor may agree upon the imposition of liquidated damages based on other project milestones or performance requirements. Such agreement shall be included as an exhibit to this Agreement.

6.6 LIMITED MUTUAL WAIVER OF CONSEQUENTIAL DAMAGES Except for damages mutually agreed upon by the Parties as liquidated damages in Section 6.5 and excluding losses covered by insurance required by the Trade Contract Documents, the Owner and the Trade Contractor agree to waive all claims against each other for any consequential damages that may arise out of or relate to this Agreement, except for those specific items of damages excluded from this waiver as mutually agreed upon by the Parties and identified below. The Owner agrees to waive damages including but not limited to the Owner's loss of use of the Project, any rental expenses incurred, loss of income, profit or financing related to the Project, as well as the loss of business, loss of financing, principal office overhead and expenses, loss of profits not related to this Project, loss of reputation, or insolvency. The Trade Contractor agrees to waive damages including but not limited to loss of business, loss of financing, principal office overhead and expenses, loss of profits not related to this Project, loss of bonding capacity, loss of reputation, or insolvency. The provisions of this section shall also apply to the termination of this Agreement and shall survive such termination.

6.6.1 The following items of damages are excluded from this mutual waiver: The provisions of this section shall also apply to the termination of this Agreement and shall survive such termination. The Owner and the Trade Contractor shall require similar waivers in contracts with Subcontractors and Others retained for the Project.

## ARTICLE 7 TRADE CONTRACT PRICE

7.1 LUMP SUM As full compensation for performance by the Trade Contractor of the Work in conformance with the Contract Documents, the Owner shall pay the Trade Contractor the lump sum price of: XX dollars and XX cents (\$XX.XX). The lump sum price is hereinafter referred to as the Trade Contract Price, which shall be subject to increase or decrease as provided in article 8.

Lump Sum Price includes Base Bid of \$X.XX and Alternate #XX for {alternate description} for \$X.XX for a total Lump Sum Price of \$X.XX.

### 7.2 ALLOWANCES

7.2.1 All allowances stated in the Trade Contract Documents shall be included in the Trade Contract Price. The Owner shall select allowance items in a timely manner so as not to delay the Trade Contract



Work.

7.2.2 Allowances shall include the costs of materials, supplies and equipment delivered to the Worksite, less applicable trade discounts and including requisite taxes, unloading and handling at the Worksite, and labor and installation, unless specifically stated otherwise. The Trade Contractor's Overhead and profit for the allowances shall be included in the Trade Contract Price, but not in the allowances. The Trade Contract Price shall be adjusted by Trade Contract Change Order to reflect the actual costs when they are greater than or less than the allowances.

## ARTICLE 8 CHANGES

Changes in the Trade Contract Work that are within the general scope of this Agreement shall be accomplished, without invalidating this Agreement, by Trade Contract Change Order, and Trade Contract Interim Directed Change.

### 8.1 TRADE CHANGE ORDER

8.1.1 The Owner may order or the Trade Contractor may request changes in the Trade Contract Work or the timing or sequencing of the Trade Contract Work that impacts the Trade Contract Price or the Trade Contract Time. All such changes in the Trade Contract Work that affect Trade Contract Time or Trade Contract Price shall in the form of a Trade Contract Change Order. Any such requests for a change in the Trade Contract Price or the Trade Contract Time shall be processed in accordance with this article 8. Trade Contract Change Orders shall be executed on the ConsensusDOCS 813 - Trade Contract Change Order (CM as Owner's Agent) with attachments as necessary.

8.1.2 The Owner, with the assistance of the Construction Manager, and the Trade Contractor shall negotiate in good faith an appropriate adjustment to the Trade Contract Price or the Trade Contract Time and shall conclude these negotiations as expeditiously as possible. Acceptance of the Trade Contract Change Order and any adjustment in the Trade Contract Price or Trade Contract Time shall not be unreasonably withheld.

### 8.2 TRADE CONTRACT INTERIM DIRECTED CHANGE

8.2.1 The Construction Manager may issue a written Trade Contract Interim Directed Change signed by the Owner directing a change in the Trade Contract Work prior to reaching agreement with the Trade Contractor on the adjustment, if any, in the Trade Contract Price or the Trade Contract Time.

8.2.2 The Owner, with the assistance of the Construction Manager, and the Trade Contractor shall negotiate expeditiously and in good faith for appropriate adjustments, as applicable, to the Trade Contract Price or the Trade Contract Time arising out of a Trade Contract Interim Directed Change. As the Trade Contract Changed Work is performed, the Trade Contractor shall submit its costs for such work with its application for payment beginning with the next application for payment within thirty (30) Days of the issuance of the Trade Contract Interim Directed Change. If there is a dispute as to the cost to the Owner, the Trade Contractor shall continue to perform the Trade Contract Changed Work set forth in the Trade Contract Interim Directed Change and the Owner shall pay the requirements Trade Contractor the Cost of the Work, defined in 8.3.1.3 below upon receipt of an application for payment and the Owner's (and the Architect's and construction manger's) determination that the work has been completed. The Parties reserve their rights as to the disputed amount, subject to the requirements ARTICLE 12.

8.2.3 When the Owner and the Trade Contractor agree upon the adjustment in the Trade Contract Price or the Trade Contract Time, for a change in the Trade Contract Work directed by a Trade Contract Interim Directed Change, such agreement shall be the subject of a Trade Contract Change Order. The



Trade Contract Change Order shall include all outstanding Trade Contract Interim Directed Changes on which the Owner and Trade Contractor have reached agreement on Contract Price or Contract Time issued since the last Trade Contract Change Order.

### 8.3 DETERMINATION OF COST

8.3.1 An increase or decrease in the Trade Contract Price or the Trade Contract Time resulting from a change in the Trade Contract Work shall be determined by one or more of the following methods:

8.3.1.1 unit prices set forth in this Agreement or as subsequently agreed;

8.3.1.2 a mutually accepted, itemized lump sum;

8.3.1.3 COST OF THE WORK Cost of the Work as defined by this subsection plus 10.0 % for Overhead and 5.0 % for profit. "Cost of the Work" shall include the following costs reasonably incurred to perform a change in the Work

8.3.1.3.1 wages paid for labor in the direct employ of the Constructor in the performance of the Work;

8.3.1.3.2 salaries of the Trade Contractor's employees when stationed at the field office to the extent necessary to complete the applicable Work, employees engaged on the road expediting the production or transportation of material and equipment, and supervisory employees from the principal or branch office performing the functions listed below;

8.3.1.3.3 cost of applicable employee benefits and taxes, including but not limited to, workers' compensation, unemployment compensation, social security, health, welfare, retirement and other fringe benefits as required by law, labor agreements, or paid under the Trade Contractor's standard personnel policy, insofar as such costs are paid to employees of the Trade Contractor who are included in the Cost of the Work in subsections .1 and .2 immediately above;

8.3.1.3.4 reasonable transportation, travel, and hotel expenses of the Trade Contractor's personnel incurred in connection with the Work;

8.3.1.3.5 cost of all materials, supplies, and equipment incorporated in the Work, including costs of inspection and testing if not provided by the Owner, transportation, storage, and handling;

8.3.1.3.6 payments made by the Trade Contractor to Subcontractors for Work performed under this Agreement;

8.3.1.3.7 cost, including transportation and maintenance of all materials, supplies, equipment, temporary facilities, and hand tools not owned by the workers that are used or consumed in the performance of the Work, less salvage value or residual value; and cost less salvage value of such items used, but not consumed that remain the property of the Trade Contractor;

8.3.1.3.8 rental charges of all necessary machinery and equipment, exclusive of hand tools owned by workers, used at the Worksite, whether rented from the Trade Contractor or Others, including installation, repair and replacement, dismantling, removal, maintenance, transportation, and delivery costs. Rental from unrelated third parties shall be reimbursed at actual cost. Rentals from the Trade Contractor or its affiliates, subsidiaries, or related parties shall be reimbursed at the prevailing rates in the locality of the Worksite up to eighty-five percent (85%) of the value of the piece of equipment;

8.3.1.3.9 cost of the premiums for all insurance and surety bonds which the Trade Contractor is



required to procure or deems necessary, and approved by the Owner including any additional premium incurred as a result of any increase in the cost of the Work;

8.3.1.3.10 sales, use, gross receipts or other taxes, tariffs, or duties related to the Work for which the Trade Contractor is liable;

8.3.1.3.11 permits, fees, licenses, tests, and royalties;

8.3.1.3.12 reproduction costs, photographs, facsimile transmissions, long-distance telephone calls, data processing costs and services, postage, express delivery charges, data transmission, telephone service, and computer-related costs at the Worksite to the extent such items are used and consumed in the performance of the Work or are not capable of use after completion of the Work;

8.3.1.3.13 all water, power, and fuel costs necessary for the Work;

8.3.1.3.14 cost of removal of all nonhazardous substances, debris, and waste materials;

8.3.1.3.15 all costs directly incurred to perform a change in the Work which are reasonably inferable from the Contract Documents for the Changed Work;

8.3.1.3.16 DISCOUNTS All discounts for prompt payment shall accrue to the Owner to the extent such payments are made directly by the Owner. To the extent payments are made with funds of the Constructor, all cash discounts shall accrue to the Constructor. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment, shall be credited to the Cost of the Work;

8.3.1.3.17 COST REPORTING The Trade Contractor shall maintain in conformance with generally accepted accounting principles a complete and current set of records that are prepared or used by the Trade Contractor to calculate the Cost of Work. The Owner and Construction Manager shall be afforded access to the Trade Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda and similar data relating to requested payment for Cost of the Work. The Trade Contractor shall preserve all such records for a period of three years after the final payment or longer where required by law;

8.3.1.3.18 COST AND SCHEDULE ESTIMATES The Trade Contractor shall use reasonable skill and judgment in the preparation of a cost estimate or schedule for a change to the Work, but does not warrant or guarantee their accuracy

8.3.1.4 If an increase or decrease cannot be agreed to as set forth in Clauses .1 through .3 above, and the Owner or the Construction Manager issues a Trade Contract Interim Directed Change, the cost of the change in the Trade Contract Work shall be determined by the reasonable actual expense and savings of the performance of the Work resulting from the change. If there is a net increase in the Trade Contract Price, the Trade Contractor's Fee shall be adjusted accordingly. In case of a net decrease in the Trade Contract Price, the Trade Contractor's Fee shall not be adjusted unless ten percent (10%) or more of the Project is deleted. The Trade Contractor shall maintain a documented, itemized accounting evidencing the expenses and savings.

8.3.2 If unit prices are set forth in the Trade Contract Documents or are subsequently agreed to by the Parties, but the character or quantity of such unit items as originally contemplated is so different in a proposed Trade Change Order that the original unit prices will cause substantial inequity to the Owner or the Trade Contractor, such unit prices shall be equitably adjusted.

8.4 CLAIMS FOR ADDITIONAL COST OR TIME Except as provided in subsection 6.3.2 and section 6.4 for



any claim for an increase in the Trade Contract Price or the Trade Contract Time, the Trade Contractor shall give the Owner and the Construction Manager written notice of the claim within fourteen (14) Days after the occurrence giving rise to the claim or within fourteen (14) Days after the Trade Contractor first recognizes (or should have recognized) the condition giving rise to the claim, whichever is later. Except in an emergency, notice shall be given before proceeding with the Trade Contract Work. Thereafter, the Trade Contractor shall submit written documentation of its claim, including appropriate supporting documentation, within twenty-one (21) Days after giving notice, unless the Parties mutually agree upon a period of time. The Owner or Construction Manager shall respond in writing denying or approving the Trade Contractor's claim no later than fourteen (14) Days after receipt of the Trade Contractor's claim. Any change in the Trade Contract Price or the Trade Contract Time resulting from such claim shall be authorized by Trade Contract Change Order.

## ARTICLE 9 PAYMENT

9.1 GENERAL PROVISIONS Within fourteen (14) calendar Days from the date of execution of this Agreement, the Trade Contractor shall prepare and submit to the Construction Manager for approval a Schedule of Values apportioned to the various divisions or phases of the Trade Contract Work. Each line item contained in the Schedule of Values shall be assigned a monetary price such that the total of all such items shall equal the Trade Contract Price. The Schedule of Values shall be prepared in such detail and be supported by such documents and proof as may be required by the Construction Manager.

### 9.2 PROGRESS PAYMENTS

9.2.1 APPLICATIONS The Trade Contractor shall submit to the Construction Manager monthly notarized applications for payment. Trade Contractor's applications for payment shall be itemized and supported by the Trade Contractor's Schedule of Values and any other substantiating data as required by this Trade Contractor Agreement or requested by the Construction Manager or Design Professional. Payment applications may include payment requests on account of properly authorized Trade Contract Change Orders and Interim Directed Changes. The progress payment application shall include Trade Contract Work performed through the preceding calendar month. The Construction Manager will review the application and recommend to the Design professional and the Owner amounts payable by the Owner to the Trade Contractor. The Owner, in accordance with the determination of the Design Professional, shall pay the amount otherwise due on any payment application, less any amounts as set forth below, no later than thirty (30) calendar Days after the payment application, or portion thereof, is approved the Design Professional. The Owner may deduct, from any progress payment, such amounts as may be retained pursuant to subsection 9.2.4 below.

9.2.2 STORED MATERIALS AND EQUIPMENT Unless otherwise provided in the contract documents, applications for payment may include materials and equipment not yet incorporated into the Work but delivered to and suitably stored onsite or offsite including applicable insurance, storage and costs incurred transporting the materials to an offsite storage facility. Approval of payment applications for stored materials and equipment stored offsite shall be conditioned on submission by the Trade Contractor of bills of sale and proof of required insurance, or such other procedures satisfactory to the Owner to establish the proper valuation of the stored materials and equipment, the Owner's title to such materials and equipment, and to otherwise protect the Owner's interests therein, including transportation to the site.

### 9.2.3 CLAIM WAIVERS

9.2.3.1 PARTIAL CLAIMWAIVERS AND AFFIDAVITS As a prerequisite for payment, the Trade Contractor shall provide, in a form satisfactory to the Owner and the Construction Manager, partial claim waivers in the amount of the application for payment and affidavits from the Trade Contractor, and its Subcontractors, Material Suppliers for the completed Trade Contract Work.



Such waivers shall be effective upon payment. In no event shall the Trade Contractor be required to sign an unconditional waiver of claim, either partial or final, prior to receiving payment or in an amount in excess of what it has been paid.

9.2.4 **RETAINAGE** From each progress payment made to the Trade Contractor has the Owner shall retain FIVE (5) percent of the amount otherwise due after deduction of any amounts as provided in section 9.3 and in no event shall such percentage exceed any applicable statutory requirements of this Agreement. Retainage shall be withheld and administered in accordance with Iowa Code Chapter 572:

9.3 **ADJUSTMENT OF TRADE CONTRACTOR'S PAYMENT APPLICATION** The Owner or the Construction Manager, upon notification of the Design Professional, may reject or adjust a Trade Contractor payment application or nullify a previously approved Trade Contractor payment application, in whole or in part, as may reasonably be necessary to protect the Owner from loss or damage based upon the following, to the extent that the Trade Contractor is responsible therefor under this Trade Contractor Agreement:

9.3.1 the Trade Contractor's repeated failure to perform the Trade Contract Work as required by the Trade Contractor Agreement;

9.3.2 loss or damage arising out of or relating to the Trade Contractor Agreement and caused by the Trade Contractor to the Owner, or to the Construction Manager or others to whom the Owner may be liable;

9.3.3 the Trade Contractor's failure to properly pay for labor, materials, equipment or supplies furnished in connection with the Trade Contract Work;

9.3.4 nonconforming or defective Trade Contract Work which has not been corrected in a timely fashion;

9.3.5 reasonable evidence of delay in performance of the Trade Contract Work such that the work will not be completed within the Trade Contract Time, and that the unpaid balance of the Trade Contract Price is not sufficient to offset any liquidated damages or actual damages that may be sustained by the Owner as a result of the anticipated delay caused by the Trade Contractor;

9.3.6 reasonable evidence demonstrating that the unpaid balance of the Trade Contract Price is insufficient to cover the cost to complete the Trade Contract Work; and

9.3.7 third-party claims involving the Trade Contractor or reasonable evidence demonstrating that third-party claims are likely to be filed unless and until the Trade Contractor furnishes the Owner with adequate security in the form of a surety bond, letter of credit or other collateral or commitment which are sufficient to discharge such claims if established. No later than thirty (30) Days after receipt of an application for payment, the Owner or Construction Manager shall give written notice to the Trade Contractor, disapproving or nullifying it or a portion thereof, specifying the reasons for the disapproval or nullification. When the above reasons for disapproving or nullifying an application for payment are removed, payment will be made for amounts previously withheld.

9.4 **PAYMENT NOT ACCEPTANCE** Payment to the Trade Contractor does not constitute or imply acceptance of any portion of the Trade Contract Work.

9.5 **PAYMENT DELAY** If for any reason not the fault of the Trade Contractor, the Trade Contractor does not receive a progress payment from the Owner sixty (60) calendar Days after the time such payment is due, as defined in Subparagraph 9.2.1, then the Trade Contractor, upon giving within seven (7) calendar Days after written notice to the Owner, and without prejudice to and in addition to any other legal remedies, may stop its Trade Contract Work until payment of the full amount owing to the Trade Contractor has been received. The



Trade Contract Price and Trade Contract Time shall be equitably adjusted by a Trade Contract Change Order to reflect reasonable cost and delay resulting from shutdown, delay and start-up.

## 9.6 SUBSTANTIAL COMPLETION

9.6.1 The Trade Contractor shall notify the Owner, the Construction Manager and the Design Professional when it considers Substantial Completion of the Trade Contract Work or a designated portion to have been achieved. The Construction Manager and the Design Professional shall promptly conduct an inspection to determine whether the Trade Contract Work or designated portion can be occupied or utilized for its intended use by the Owner without excessive interference in completing any remaining unfinished Trade Contract Work by the Trade Contractor. If the Construction Manager and the Design Professional determine that the Trade Contract Work or designated portion has not reached Substantial Completion, the Design Professional, and the Construction Manager, shall promptly compile a list of items to be completed or corrected so the Owner may occupy or utilize the Trade Contract Work or designated portion for its intended use. The Trade Contractor shall promptly complete all items on the list.

9.6.2 When Substantial Completion of the Trade Contract Work or a designated portion is achieved, the Construction Manager and the Design Professional shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, and the respective responsibilities of the Owner and Trade Contractor for interim items such as security, maintenance, utilities, insurance and damage to the Trade Contract Work. The Owner shall assume all responsibilities for items such as security, maintenance, utilities, and insurance, and damage to the Work. The certificate shall also list the items to be completed or corrected, and establish the time for their completion or correction. The Certificate of Substantial Completion shall be submitted to the Trade Contractor for written acceptance of responsibilities assigned in the Certificate.

9.6.3 Unless otherwise provided in the Certificate of Substantial Completion, warranties required by the Trade Contract Documents shall commence on the date of Substantial Completion of the Trade Contract Work or a designated portion.

9.6.4 Uncompleted items shall be completed by the Trade Contractor by the Final Completion date set forth in the Agreement and/or Construction Schedule. The Trade Contractor may request early release of retainage in accordance with Iowa Code Section 26.13. Payment for completed work and retainage shall be made in accordance with Iowa Code Chapters 26 and 573.

9.7 PARTIAL OCCUPANCY OR USE The Owner may occupy or use completed or partially completed portions of the Trade Contract Work when (a) the portion of the Trade Contract Work is designated in a Certificate of Substantial Completion, (b) appropriate insurer(s) consent to the occupancy or use, and (c) appropriate public authorities authorize the occupancy or use. Such partial occupancy or use shall constitute Substantial Completion of that portion of the Trade Contract Work.

## 9.8 FINAL PAYMENT

9.8.1 APPLICATION Upon acceptance of the Trade Contract Work by the Construction Manager, and approval by the Design Professional, and upon the Trade Contractor furnishing evidence of fulfillment of the Trade Contractor's obligations in accordance with the Trade Contract Documents, the Trade Contractor shall submit its application for final payment. The Construction Manager will review the Trade Contractor's final payment application and recommend to the Design Professional and the Owner an amount payable by the Owner to the Trade Contractor. The Design Professional shall then recommend an amount to be paid by the Owner. Final payment shall be made in accordance with Iowa Code Chapters 26 and 573.



9.8.2 REQUIREMENTS Along with its application for final payment, the Trade Contractor shall furnish to the Construction Manager:

9.8.2.1 an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the Trade Contract Work for which the Owner or its property or the Construction Manager or the Owner's surety might in any way be liable, have been paid or otherwise satisfied;

9.8.2.2 consent of the Trade Contractor's surety to final payment;

9.8.2.3 satisfaction of closeout procedures as may be required by the Trade Contractor Agreement;

9.8.2.4 certification (or other writing indicating) that insurance required by the Trade Contractor Agreement is and will remain effect beyond final payment pursuant to this Trade Contractor Agreement and

9.8.2.5 other data if required by the Owner or Construction Manager, such as receipts, releases, and waivers of liens effective upon payment to the extent and in such form as may be designated by the Owner or Construction Manager. Acceptance of final payment by the Trade Contractor shall constitute a waiver of all claims by the Trade Contractor except those previously made in writing and identified by the Trade Contractor as unsettled at the time of final application for payment.

9.8.3 TIME OF PAYMENT Final payment of the balance of the Trade Contract Price, less any amount retained pursuant to subsection 9.2.4 of this Agreement, and as required by Iowa Code Chapters 26 and 573, which among other things requires that twice the amount of an Iowa Code Chapter 573 subcontractor claim be withheld from final payment, shall be made to the Trade contractor within sixty (60) Days after the Trade Contractor has submitted a complete and accurate application for final payment.

9.8.4 LATE PAYMENT INTEREST Progress payments or final payment due and unpaid under this Trade Contractor Agreement shall bear interest from the date payment is due at the statutory rate prevailing at the place of the Project.

9.9 PAYMENT USE AND VERIFICATION The Trade Contractor is required to pay for all labor, materials and equipment used in the performance of the Trade Contract Work through the most current period applicable to progress payments received. Reasonable evidence, satisfactory to the Construction Manager, may be required to show that all obligations relating to the Trade Contract Work are current before releasing any payment due on the Trade Contract Work. If required by the Construction Manager, before final payment is made for the Trade Contract Work, the Trade Contractor shall submit evidence satisfactory to the Construction Manager that all payrolls, bills for materials and equipment, and all known indebtedness connected with the Trade Contract Work, have been paid or otherwise satisfied as set forth in subsection 9.8.2.

## ARTICLE 10 INDEMNITY, INSURANCE, WAIVERS AND BONDS

### 10.1 INDEMNITY

10.1A To the extent portions of this Article are in conflict with SF 396 (codified at Iowa Code Section 573A.5) said portions are void and unenforceable.

10.1.1 TRADE CONTRACTOR'S INDEMNITY To the fullest extent permitted by law, the Trade Contractor shall indemnify and hold harmless the Owner, the Owner's officers, directors, members,



consultants, agents and employees, from all claims for bodily injury and property damage, other than to the Work itself and other property insured under subsection 10.3.1, including reasonable attorneys' fees, costs and expenses, that may arise from the performance of the Work, but only to the extent caused by the negligent acts or omissions of the Trade Contractor, Subcontractors or anyone employed directly or indirectly by any of them or by anyone for whose acts any of them may be liable. The Trade Contractor shall be entitled to reimbursement of any defense costs paid above the Trade Contractor's percentage of liability for the underlying claim to the extent provided for under subsection 10.1.2.

10.1.2 OWNER'S INDEMNITY To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Trade Contractor, its officers, directors, members, consultants, agents, and employees, from all claims for bodily injury and property damage, other than property insured under subsection 10.3.1, including reasonable attorneys' fees, costs and expenses, that may arise from the performance of work by Owner, Design Professional or Others, but only to the extent caused by the negligent acts or omissions of the Owner, Design Professional or Others. The Owner shall be entitled to reimbursement of any defense costs paid above Owner's percentage of liability for the underlying claim to the extent provided for under subsection 10.1.1.

10.1.3 CONSTRUCTION MANAGER AND DESIGN PROFESSIONAL INDEMNITY The Owner shall cause the Construction Manager and the Design Professional to agree to indemnify and hold harmless the Owner from all claims for bodily injury and property damage, other than to the Work itself and other property insured under section 10.3, that may arise from the Construction Manager's or the Design Professional's services, but only to the extent that such claims result from the negligent acts or omissions of the Construction Manager or the Design Professional, respectively, or anyone for whose acts or omissions the Construction Manager or Design Professional, respectively, is liable. Such provisions shall be in a form no less protective of the Parties than the Construction Manager's Indemnity provided in ConsensusDocs 801 (2011) or the Design Professional's indemnity provided in ConsensusDocs 803 (2011) respectively, and shall be reasonably satisfactory to the Owner and the Trade Contractor.

10.1.4 ADJACENT PROPERTY INDEMNIFICATION To the extent of the limits of Trade Contractor's Commercial General Liability Insurance specified in subsection 10.2.1 or Zero Dollars and No Cents (\$0.00) whichever is more, the Trade Contractor shall indemnify and hold harmless the Owner against any and all liability, claims, demands, damages, losses and expenses, including attorney's fees, in connection with or arising out of any damage or alleged damage to any of Owner's existing adjacent property that may arise from the performance of the Trade Contract Work, but only to the extent of the negligent acts or omissions of the Trade Contractor, Subcontractor or anyone employed directly or indirectly by any of them or by anyone for whose acts any of them may be liable.

10.1.5 NO LIMITATION ON LIABILITY In any and all claims against the Indemnitees by any employee of the Trade Contractor, anyone directly or indirectly employed by the Trade Contractor or anyone for whose acts the Trade Contractor may be liable, the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Trade Contractor under Workers' Compensation acts, disability benefit acts or other employment benefit acts.

## 10.2 TRADE CONTRACTOR'S INSURANCE

10.2.1 Prior to the start of the Work, the Trade Contractor shall procure and maintain in force Workers Compensation/Employers' Liability Insurance, Business Automobile Liability Insurance, and Commercial General Liability Insurance (CGL). The CGL policy shall include coverage for liability arising from premises, operations, independent contractors, products-completed operations, personal injury and



advertising injury, contractual liability, and broad form property damage. The Trade Contractor's liability policies, as required in this Subparagraph 10.2.1, shall be written on an occurrence basis with at least the following limits of liability:

10.2.1.1 Workers' Compensation- amount required by the laws of Iowa

10.2.1.2 Employers' Liability Insurance - \$500,000 or an amount required by Iowa law, whichever is greater.

10.2.1.3 Business Automobile Liability Insurance

a. \$1,000,000 Each Accident

10.2.1.4 Commercial General Liability Insurance

a. \$1,000,000 Each Occurrence b. \$2,000,000 General Aggregate c. \$1,000,000 Products/Completed Operations Aggregate d. \$1,000,000 Personal and Advertising Injury Limit

10.2.2 The Trade Contractor Must also carry and maintain Excess or Umbrella Liability coverage for the policies in subsection 10.2.1 in the amounts as listed below:

Trade Contractor Contract Amount: <\$1,000,000 - \$2 Million Umbrella or more \$1,000,000 - \$5,000,000 - \$5 Million Umbrella or more >\$5,000,000 - \$10 Million Umbrella or more

10.2.3 The Trade Contractor shall maintain in effect all insurance coverage required under subsection 10.2.1 with insurance companies lawfully authorized to do business in Iowa. Such insurance companies shall have a minimum A.M. Best Rating of A-VI (Consult instructions and insurance advisor). If the Trade Contractor fails to obtain or maintain any insurance coverage required under this Agreement, the Owner may purchase such coverage and charge the expense to the Trade Contractor, or terminate this Agreement.

10.2.4 To the extent commercially available, the policies of insurance required under Subparagraph 10.2.1 shall contain a provision that the insurance company or its designee must give the Owner written notice transmitted in paper or electronic format: (a) 30 days before coverage is nonrenewed by the insurance company and (b) with 10 business days after cancellation of coverage by the insurance company. The Trade Contractor shall maintain completed operations liability insurance for one year after acceptance of the Contract Documents, whichever is longer. Prior to commencement of services, the Trade Contractor shall furnish the Owner with certificates evidencing the required coverages. In addition, if any insurance policy required under subsection 10.2.1 is not to be immediately replaced without a lapse in coverage when it expires, exhausts its limits, or is to be, cancelled, the Trade Contractor shall give Owner prompt written notice upon actual or constructive knowledge of such condition.

#### 10.2.5 ADDITIONAL LIABILITY COVERAGE

10.2.5.1 The Owner  shall /  shall not (indicate one) require the Trade Contractor to purchase and maintain liability coverage, primary to the Owner's coverage under subsection 10.3.1.

10.2.5.2 If required by subsection 10.2.5.1, the additional liability coverage required of the Trade Contractor shall be:

1. Additional Insured Owner shall be named as an additional insured on Trade Contractor's Commercial General Liability Insurance specified for operations and completed operations,



but only with respect to liability for bodily injury, property damage or personal and advertising injury to the extent caused by the negligent acts or omissions of Trade Contractor, or those acting on Trade Contractor's behalf, in the performance of Trade Contractor's Work for.

2. OCP Trade Contractor shall provide an Owners' and Contractors' Protective Liability Insurance ("OCP") policy with limits equal to the limits on Commercial General Liability Insurance specified or limits as otherwise required by Owner.

Any documented additional cost in the form of a surcharge associated with procuring the additional liability coverage in accordance with this subsection shall be paid by the Owner directly or the costs may be reimbursed by the Owner to the Trade Contractor by increasing the Trade Contract Price to correspond to the actual cost required to purchase and maintain the additional liability coverage. Prior to commencement of the Work, the Trade Contractor shall obtain and furnish to the Owner a certificate evidencing that the additional liability coverages have been procured.

10.2.6 PROFESSIONAL LIABILITY INSURANCE To the extent the Trade Contractor is required to procure design services under this Agreement, in accordance with section 3.14, the Trade Contractor shall require the designers to obtain professional liability insurance for claims arising from the negligent performance of professional services under this Agreement, with a company reasonably satisfactory to the Owner, including coverage for all professional liability caused by any of the Designer's(s') consultants, written for not less than \$1,000,000 per claim and in the aggregate with the deductible not to exceed \$2,000,000. The deductible shall be paid by the Designer.

### 10.3 OWNER'S INSURANCE

10.3.1 Deleted.

10.3.2 Deleted.

### 10.4 PROPERTY INSURANCE

10.4.1 Before the start of Trade Contract Work, the Owner shall obtain and maintain Builder's Risk Policy insurance with minimum coverage limits equal to the full cost of replacement of the Project at the time of loss. This insurance shall also name the Trade Contractor, Subcontractors, Material Suppliers, Construction Manager and Design Professional as insureds. This insurance shall be written as a Builder's Risk Policy or equivalent form to cover all risks of physical loss except those specifically excluded by the policy, and shall insure at least against the perils of fire, lightning, explosion, windstorm, hail, smoke, aircraft and vehicles, riot and civil commotion, theft, vandalism, malicious mischief, debris removal, flood (subject to sublimits), earthquake (subject to sublimits), earth movement, water damage, wind damage, testing if applicable, collapse however caused, and shall include coverage for, material, or equipment stored offsite, onsite or in transit. This policy shall provide for a waiver of subrogation in favor of the Trade Contractor, Subcontractors, Material Suppliers, Construction Manager and Design Professional. This insurance shall remain in effect until the Substantial Completion of the Work, final payment has been made or until no person or entity other than the Owner has an insurable interest in the property to be covered by this insurance, whichever is sooner. Partial occupancy or use of the Work shall not commence until the Owner has secured the consent of the insurance company or companies providing the coverage required in this Subparagraph 10.4.1.

10.4.2 If the Owner does not intend to purchase the property insurance required by this Agreement, including all of the coverages and deductibles described herein, the Owner shall give written notice to the Trade Contractor, the Design Professional and the Construction Manager before the Trade Contract



Work is commenced. The Trade Contractor may then provide insurance to protect its interests and the interests of the Subcontractors, including the coverage of deductibles. The cost of this insurance shall be charged to the Owner in a Change Order. The Owner shall be responsible for all of Trade Contractor's costs reasonably attributed to the Owner's failure or neglect in purchasing or maintaining the coverage described above.

10.4.2.1 The Owner will not obtain insurance to cover the risk of physical loss resulting from Terrorism. The Construction Manager is not required to purchase this type of insurance but may purchase this type of insurance if it chooses. If purchased, the cost of this insurance shall be borne by the Construction manager.

10.4.3 POLICIES The Owner shall provide the Trade Contractor with a copy of all policies including all endorsements upon request.

## 10.5 PROPERTY INSURANCE LOSS ADJUSTMENT

10.5.1 LOSS ADJUSTMENT Any insured loss shall be adjusted with the Owner and the Trade Contractor and made payable to the Owner as trustee for the insureds, as their interests may appear.

10.5.2 DISTRIBUTION OF PROCEEDS Following the occurrence of an insured loss, monies received will be deposited in a separate account and the trustee shall make distribution in accordance with the agreement of the Parties in interest.

## 10.6 WAIVERS

10.6.1 PROPERTY DAMAGE The Owner and Trade Contractor waive all claims and other rights they may have against each other for loss of or damage to (a) the Project, (b) all materials, machinery, equipment and other items used in accomplishing the Trade Contract Work or services or to be incorporated into the Project, while the same are in transit, at the Project Site, during erection and otherwise, and (c) all property owned by or in the custody of Owner and its affiliates, however such loss or damage shall occur, to the extent such damage is covered by property insurance. The proceeds of such insurance shall be held by the Owner as trustee.

10.6.2 WAIVER OF SUBROGATION The Owner shall have its insurers waive all rights of subrogation they may have against the Construction Manager, Design Professional, Trade Contractors, and their Subcontractors and Material Suppliers on all policies carried by the Owner on the Project and adjacent properties, including, after final payment, those policies to be provided on the completed Project not intended to insure the Project during construction.

10.6.3 ENDORSEMENT If the policies of insurance referred to in this section require an endorsement to provide for continued coverage where there is a waiver of subrogation, the Owner will cause them to be so endorsed.

10.7 RISK OF LOSS Except to the extent a loss is covered by property insurance, carried by the owner, risk of loss or damage to the Work shall be upon the Trade Contractor until the Date of Final Completion, unless otherwise agreed to by the Parties.

## 10.8 BONDS Performance and Payment Bonds

are

are not

required of the Trade Contractor that meet the requirements of Iowa Code Chapter 573. A deposit in lieu of a



bond may be acceptable if it meets the requirements of Iowa Code Section 573.4. Such bonds shall be issued by a surety admitted in the State in which the Project is located and must be acceptable to the Owner. The Owner's acceptance shall not be withheld without reasonable cause. The penal sum of the Payment Bond and of the Performance Bond shall each be one hundred percent (100%) of the original Contract Price. Any increase in the Contract Price that exceeds ten percent (10%) in the aggregate shall require a rider to the Bonds increasing penal sums accordingly. Up to such ten percent (10%) amount, the penal sum of the Bond shall remain equal to one hundred percent (100%) of the Contract Price. The Trade Contractor shall endeavor to keep its surety advised of changes potentially impacting the Contract Time and Contract Price, though the Trade Contractor shall require that its surety waives any requirement to be notified of any alteration or extension of time. The Trade Contractor's Payment Bond for the Project, if any, shall be made available by the Owner for review and copying by the Subcontractor. Iowa Code Chapter 573 shall control and take precedence over any conflicting term or condition in this Agreement

## ARTICLE 11 SUSPENSION, NOTICE TO CURE AND TERMINATION OF AGREEMENT

### 11.1 SUSPENSION BY OWNER FOR CONVENIENCE

11.1.1 OWNER SUSPENSION Should the Owner order the Trade Contractor in writing to suspend, delay, or interrupt the performance of the Trade Contract Work for such period of time as may be determined to be appropriate for the convenience of the Owner and not due to any act or omission of the Trade Contractor or any person or entity for whose acts or omissions the Trade Contractor may be liable, then the Trade Contractor shall immediately suspend, delay or interrupt that portion of the Trade Contract Work as ordered by the Owner. The Trade Contract Price and the Trade Contract Time shall be equitably adjusted by Trade Contract Change Order for the cost and delay resulting from any such suspension.

11.1.2 Any action taken by the Owner that is permitted by any other provision of the Trade Contract Documents and that results in a suspension of part or all of the Trade Contract Work does not constitute a suspension of Trade Contract Work under this section.

11.2 NOTICE TO CURE A DEFAULT If the Trade Contractor persistently refuses or fails to supply enough properly skilled workers, proper materials, or equipment to maintain the approved Construction Schedule in accordance with ARTICLE 6, or fails to make prompt payment to its workers, Subcontractors or Material Suppliers; disregards laws, ordinances, rules, regulations or orders of any public authority having jurisdiction; or is otherwise guilty of a material breach of a provision of this Agreement, the Trade Contractor may be deemed in default. If the Trade Contractor fails within seven (7) business Days after receipt of written notification to commence and continue satisfactory correction of such default with diligence and promptness, then the Owner shall give the Trade Contractor a second notice to correct the default within a three (3) Day period. If the Trade Contractor fails to promptly commence and continue satisfactory correction of the default following receipt of such second notice, the Owner without prejudice to any other rights or remedies may:

11.2.1 supply workers and materials, equipment and other facilities as the Owner or Construction Manager deems necessary for the satisfactory correction of the default, and charge the cost to the Trade Contractor, who shall be liable for the payment of same including reasonable Overhead, profit and attorneys' fees;

11.2.2 contract with Others to perform such part of the Trade Contract Work as the Owner or Construction Manager determines shall provide the most expeditious correction of the default, and charge the cost to the Trade Contractor;

11.2.3 withhold payment due the Trade Contractor in accordance with section 9.3; and

11.2.4 in the event of an emergency affecting the safety of persons or property, immediately commence



and continue satisfactory correction of such default as provided in subsections 11.2.1 and 11.2.2 without first giving written notice to the Trade Contractor, but shall give prompt written notice of such action to the Trade Contractor following commencement of the action.

### 11.3 OWNER'S RIGHT TO TERMINATE FOR DEFAULT

11.3.1 TERMINATION BY OWNER FOR DEFAULT If, within seven (7) Days of receipt of a notice to cure pursuant to section 11.2, the Trade Contractor fails to commence and satisfactorily continue correction of the default set forth in the notice to cure, the Owner may notify the Trade Contractor that it intends to terminate this Agreement for default absent appropriate corrective action within fourteen additional Days. After the expiration of the additional fourteen (14) Day period, the Owner may terminate this Agreement by written notice absent appropriate corrective action. Termination for default is in addition to any other remedies available to Owner under section 11.2. If the Owner's cost arising out of the Trade Contractor's failure to cure, including the cost of completing the Trade Contract Work and reasonable attorneys' fees, exceeds the unpaid Trade Contract Price, the Trade Contractor shall be liable to the Owner for such excess costs. If the Owner's costs are less than the unpaid Trade Contract Price, the Owner shall pay the difference to the Trade Contractor. In the event the Owner exercises its rights under this section, upon the request of the Trade Contractor the Owner shall furnish to the Trade Contractor a detailed accounting of the cost incurred by the Owner.

11.3.2 USE OF TRADE CONTRACTOR'S MATERIALS, SUPPLIES AND EQUIPMENT If the Owner or Others perform work under this section, the Owner shall have the right to take and use any materials, supplies and equipment belonging to the Trade Contractor and located at the Worksite for the purpose of completing any remaining Trade Contract Work. Immediately upon completion of the Work, any remaining materials, supplies or equipment not consumed or incorporated in the Trade Contract Work shall be returned to the Trade Contractor in substantially the same condition as when they were taken, reasonable wear and tear excepted.

11.3.3 If the Trade Contractor files a petition under the Bankruptcy Code, this Agreement may be terminated for cause at the may be terminated for cause at the Owner.

11.3.3 If the Trade Contractor files a petition under the Bankruptcy Code, this Agreement may be terminated for cause at the may be terminated for cause at the Owner.

11.3.4 The Owner shall make reasonable efforts to mitigate damages arising from Trade Contractor default, and shall promptly invoice the Trade Contractor for all amounts due pursuant to sections 11.2 and 11.3.

### 11.4 TERMINATION BY OWNER FOR CONVENIENCE

11.4.1 Upon written notice to the Trade Contractor, the Owner may, without cause, terminate this Agreement. The Trade Contractor shall immediately stop the Work, follow the Owner's or Construction Manager's instructions regarding shutdown and termination procedures, and strive to minimize any further costs.

11.4.2 If the Owner terminates this Agreement pursuant to this section, the Trade Contractor shall be paid:

11.4.2.1 for the Work performed to date including Overhead and profit; and

11.4.2.2 for all demobilization costs and costs incurred as a result of the termination but not including Overhead or profit on work not performed;

11.4.2A Upon written notice to the Trade Contractor the Owner has the right to terminate this



Agreement without penalty as a result of the following: 1) the legislature or governor fail to appropriate funds sufficient to allow the Owner to operate as required and fulfill its obligations under this Agreement, 2) funds are de-appropriated or not allocated, 3) the Owner's authorization to operate is withdrawn or there is a material alteration in the programs administered by the owner, or 4) the Owner's duties are substantially modified. If such a termination results then the Trade Contractor shall be paid in the manner set forth in subparagraph 11.4.2. If, however, an appropriation to cover the cost of this Agreement becomes available within sixty (60) days subsequent to termination under this paragraph then the Owner agrees to re-enter into a modified version of this Agreement that accounts for the termination and reinstatement.

11.4.3 If the Owner terminates this Agreement pursuant to sections 11.3 or 11.4, the Trade Contractor shall:

11.4.3 If the Owner terminates this Agreement pursuant to sections 11.3 or 11.4, the Trade Contractor shall:

11.4.3.1 execute and deliver to the Owner all papers and take all action required to assign, transfer and vest in the Owner the rights of the Trade Contractor to all materials, supplies and equipment for which payment has or will be made in accordance with the Trade Contract Documents and all subcontracts, orders and commitments which have been made in accordance with the Trade Contract Documents;

11.4.3.2 exert reasonable effort to reduce to a minimum the Owner's liability for subcontracts, orders and commitments that have not been fulfilled at the time of the termination;

11.4.3.3 cancel any subcontracts, orders and commitments as the Owner or Construction Manager directs; and

11.4.3.4 sell at prices approved by the Owner or Construction Manager any materials, supplies and equipment as the Owner or Construction Manager directs, with all proceeds paid or credited to the Owner.

## 11.5 TRADE CONTRACTOR'S RIGHT TO TERMINATE

11.5.1 Upon seven (7) Days' written notice to the Owner and Construction Manager, the Trade Contractor may terminate this Agreement if the Trade Contract Work has been stopped for a thirty (30) Day period through no fault of the Trade Contractor for any of the following reasons:

11.5.1.1 under court order or order of other governmental authorities having jurisdiction;

11.5.1.2 as a result of the declaration of a national emergency or other governmental act during which, through no act or fault of the Trade Contractor, materials are not available; or

11.5.1.3 suspension by the Owner for convenience pursuant to section 11.1

11.5.2 In addition, upon seven (7) Days' written notice to the Owner and Construction Manager, the Trade Contractor may terminate the Agreement if the Owner:

11.5.2.1 fails to furnish reasonable evidence pursuant to section 4.1.2 that sufficient funds are available and committed for Project financing, or

11.5.2.2 assigns this Agreement over the Trade Contractor's reasonable objection, or

11.5.2.3 fails to pay the Trade Contractor in accordance with this Agreement and the Trade Contractor has complied with the notice provisions of section 9.5, or



11.5.2.4 otherwise materially breaches this Agreement.

11.5.3 Upon termination by the Trade Contractor in accordance with this section, the Trade Contractor shall be entitled to recover from the Owner payment for all Trade Contract Work executed and for any proven loss, cost or expense in connection with the Trade Contract Work, including all demobilization costs plus reasonable Overhead and profit on work not performed.

11.6 OBLIGATIONS ARISING BEFORE TERMINATION Even after termination pursuant to ARTICLE 11, the provisions of this Agreement still apply to any Trade Contract Work performed, payments made, events occurring, costs charged or incurred or obligations arising before the termination date.

## ARTICLE 12 DISPUTE MITIGATION AND RESOLUTION

12.1 WORK CONTINUANCE AND PAYMENT Unless otherwise agreed in writing, the Trade Contractor shall continue the Trade Contract Work and maintain the Construction Schedule during any dispute mitigation or resolution proceedings. If the Trade Contractor continues to perform, the Owner shall continue to make payments in accordance with this Agreement.

12.2 DIRECT DISCUSSIONS If the Parties cannot reach resolution on a matter relating to or arising out of the Agreement, the Parties shall endeavor to reach resolution through good faith direct discussions between the Parties' representatives, who shall possess the necessary authority to resolve such matter and who shall record the date of first discussions. The authorized representative for the Trade Contractor is identified in Paragraph 3.4 of the Agreement. The authorized representative for the Owner is identified in Paragraph 4.2 of the Agreement. The parties' authorized representative are, among other things, authorized to resolve matters of disagreement and disputes between the Parties. If the dispute remains unresolved after fifteen (15) Days from the date of first discussion, the Parties shall submit such matter to the dispute mitigation and dispute resolution procedures selected herein.

12.3 MITIGATION The Parties agree that dispute mitigation procedures provided in this Project. Disputes remaining unresolved after direct discussions shall be directed to the selected mitigation procedure immediately below. The dispute mitigation procedure shall result in nonbinding finding on the matter. This may be introduced as evidence at a subsequent binding adjudication of the matter, as designee on Paragraph 12.5. The Parties agree that the dispute mitigation procedure shall be

(Designate only one.)

Project Neutral

Dispute Review Board

12.3.1 MITIGATION PROCEDURES The Project Neutral/Dispute Review Board shall be mutually selected and appointed by the Parties and shall execute a retainer agreement with the Parties establishing the scope of the Project Neutral/Dispute Review Board's responsibilities. The costs and expenses of the Project Neutral/Dispute Review Board shall be shared equally by the Parties. The Project Neutral/Dispute Review Board shall be available to either Party, upon request, throughout the course of the Project, and shall make regular visits to the Project so as to maintain an up-to-date understanding of the Project progress and issues and to enable the Project Neutral/Dispute Review Board to address matters in dispute between the Parties promptly and knowledgeably. The Project Neutral/Dispute Review Board shall issue nonbinding findings within five (5) business Days of referral of the matter to the Project Neutral, unless good cause is shown.

12.3.2 If the matter remains unresolved following the issuance of the nonbinding finding by the mitigation procedure or if the Project Neutral/Dispute Review Board fails to issue nonbinding findings



within five (5) Days of the referral, the Parties shall submit the matter to the binding dispute resolution procedure designated in section 12.5.

12.4 MEDIATION If direct discussions pursuant to section 12.2 do not result in resolution of the matter and no dispute mitigation procedure is selected under section 12.3, the Parties shall endeavor to resolve the matter by mediation through the current Construction Industry Mediation Rules of the American Arbitration Association, or the Parties may mutually agree to select another set of mediation rules. The administration of the mediation shall be as mutually agreed by the Parties. The mediation shall be convened within thirty (30) business Days of the matter first being discussed and shall conclude within forty-five (45) business Days of the matter first being discussed. Either Party may terminate the mediation at any time after the first session, but the decision to terminate shall be delivered in person by the terminating Party to the non-terminating Party and to the mediator. The costs of the mediation shall be shared equally by the Parties.

12.5 BINDING DISPUTE RESOLUTION If the matter is unresolved after submission of the matter to a mitigation procedure or to mediation, the Parties shall submit the matter to the binding dispute resolution procedure designated herein.

(Designate only one.)

Arbitration using the current Construction Industry Arbitration Rules of the American Arbitration Association

Litigation in either the state or federal court having jurisdiction of the matter in the location of the Project.

12.5.1 The costs of any binding dispute resolution procedures shall be borne by the non-prevailing Party, as determined by the adjudicator of the dispute. However, the costs of binding dispute resolution does not include attorney fees. The Parties are each responsible for paying for their own attorney fees.

12.5.2 VENUE The venue of any binding dispute resolution procedure shall be Des Moines, Iowa.

12.6 MULTIPARTY PROCEEDING All parties necessary to resolve a claim shall be parties to the same dispute resolution proceeding. Appropriate provisions shall be included in all other contracts relating to the Work to provide for the joinder or consolidation of such dispute resolution procedures.

12.7 LIEN RIGHTS The Trade Contractor acknowledges that it has no mechanic's lien rights on this Project because it is a public improvement project.

### ARTICLE 13 MISCELLANEOUS PROVISIONS

13.1 ASSIGNMENT Neither the Owner nor the Trade Contractor shall assign their interest in this Agreement without the written consent of the other except as to the assignment of proceeds. The terms and conditions of this Agreement shall be binding upon both Parties, their partners, successors, assigns and legal representatives. Neither Party to this Agreement shall assign the Agreement as a whole without written consent of the other. If either Party attempts to make such an assignment, that Party shall nevertheless remain legally responsible for all obligations under this Agreement, unless otherwise agreed by the other Party.

13.2 GOVERNING LAW This Agreement and all disputes arising there from shall be governed by the Iowa law.

13.3 SEVERABILITY The partial or complete invalidity of any one or more provisions of this Agreement shall not affect the validity or continuing force and effect of any other provision.



13.4 NO WAIVER OF PERFORMANCE The failure of either Party to insist, in any one or more instances, on the performance of any of the terms, covenants or conditions of this Agreement, or to exercise any of its rights, shall not be construed as a waiver or relinquishment of such term, covenant, condition or right with respect to further performance or any other term, covenant, condition or right.

13.5 TITLES AND GROUPINGS The titles given to the articles of this Agreement are for ease of reference only and shall not be relied upon or cited for any other purpose. The grouping of the articles in this Agreement and of the Owner's specifications under the various headings is solely for the purpose of convenient organization and in no event shall the grouping of provisions, the use of sections or the use of headings be construed to limit or alter the meaning of any provisions.

13.6 ASSISTANCE OF COUNSEL AND INTERPRETATION The Parties agree that they had the opportunity to obtain the assistance of counsel in reviewing the Agreement terms prior to execution. This Agreement shall be construed neither against nor in favor of either Party, but shall be construed in a neutral manner.

13.7 RIGHTS AND REMEDIES The Parties' rights, liabilities, responsibilities and remedies with respect to this Agreement, whether in contract, tort, negligence or otherwise, shall be exclusively those expressly set forth in this Agreement.

13.8 ADDITIONAL PROVISIONS (Insert here other provisions, if any, that pertain to this Agreement See Below.)

13.9 COMPLIANCE WITH LAW AND REGULATIONS The Trade Contractor shall comply with all applicable federal, state, and local laws, rules, ordinances, regulations and orders when performing services and/or performing work under this Agreement, including without limitation, all laws applicable to the prevention of discrimination in employment and the use of targeted small businesses as subcontractors or suppliers. The Trade Contractor declares that it has complied with all federal, state and local laws regarding business permits and licenses that may be required to provide the services and work required by this Agreement. The Trade Contractor further acknowledges that if this Project is a recipient of Federal financial assistance that it may be subject to requirements of Federal Acts and Executive Orders as mandated by Federal agencies having authority and jurisdiction to enforce and ensure compliance with such laws and regulations including, but not necessarily limited to, the Davis Bacon Act and other Federal Acts and Executive Orders.

13.10 EMPLOYMENT PRACTICES: It is the intent of the Iowa Department of Administrative Services to assure equal employment opportunity in all contract work as required by law. Vendors, are required to take affirmative action to ensure that applicants employed or seeking employment with them are treated equally as required by law. Vendors shall not illegally discriminate against any employee. During the course of the Project, the Vendor may be required to show compliance with the EEO and Affirmative Action requirements. Noncompliance with the provisions set forth at the time of contract award may result in termination or suspension of the Agreement in whole or in part. All vendors and service providers working under the terms of this Agreement are prohibited from engaging in discriminatory employment practices forbidden by Iowa law. Vendors shall complete and submit the Nondiscrimination Clause form for the Owner's approval.

13.11 RECIPROCAL BIDDER PREFERENCE In accordance with Iowa Code Section 73A.21, as amended in 2011 by HF 648, if the Trade Contractor is not a resident bidder of Iowa, as defined by law, then the Trade Contractor must specifically identify in writing with its bid any and all preferences or preferential treatment (including preferences related to labor) enforced by the state or foreign country in which the Trade Contractor is a resident. If the low bid Trade Contractor is not a resident bidder of Iowa and the Trade Contractor's foreign State of residence enforces such a preference then the Owner shall reciprocally enforce the preference in favor of a resident bidder of Iowa. Failure on the part of the Trade Contractor to completely and accurately abide by this legal requirement may, among other things, result in civil penalties and void this Agreement. The Trade Contractor should contact its attorney regarding this legal requirement if the Trade



Contractor has questions regarding its meaning or application.

13.12 LABOR RELATIONS The Trade Contractor shall comply with all Iowa and Federal labor laws. In accordance with Executive Order Number 69, issued by the Governor of Iowa on or about January 14, 2011, no project labor agreement (also known as a PLA), or similar, will be used on this Project. Iowa is a right to work state. No consultant, contractor, or employee shall be obligated to contract with or join any labor organization as a condition of performing work on this Project.

#### ARTICLE 14 TRADE CONTRACT DOCUMENTS

14.1 The Trade Contract Documents in existence at the time of execution of this Agreement are as follows:

RFBXXXXXXXXX Bid Package X

#### 14.2 INTERPRETATION OF TRADE CONTRACT DOCUMENTS

14.2.1 The drawings and specifications are complementary. If Trade Contract Work is shown only on one but not on the other, the Trade Contractor shall perform the Trade Contract Work as though fully described on both consistent with the Trade Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

14.2.2 In case of conflicts between the drawings and specifications, the specifications shall govern. In any case of omissions or errors in figures, drawings or specifications, the Trade Contractor shall immediately submit the matter to the Owner for clarification. The Owner's clarifications are final and binding on all Parties, subject to an equitable adjustment in Trade Contract Time or Price pursuant to ARTICLE 6 and ARTICLE 7 or dispute resolution in accordance with ARTICLE 12.

14.2.3 Where figures are given, they shall be preferred to scaled dimensions.

14.2.4 Any terms that have well-known technical or trade meanings, unless otherwise specifically defined in this Agreement, shall be interpreted in accordance with their well-known meanings. This Agreement entered into as of the date entered in ARTICLE 1.

14.2.5 PRECEDENCE In case of any inconsistency, conflict or ambiguity among the Trade Contract Documents, the documents shall govern in the following order: (a) Trade Contract Change Orders and written amendments to this Agreement; (b) this Agreement; (c) subject to subsection 14.2.2 the drawings, specifications and addenda issued prior to the execution of this Agreement; (d) approved submittals; (e) information furnished by the Owner pursuant to subsection 4.1.3; (f) other documents listed in this Agreement. Among all the Trade Contract Documents, the term or provision that is most specific or includes the latest date shall control. Information identified in one Trade Contract Document and not identified in another shall not be considered to be a conflict or inconsistency.

This Agreement entered into as of the date entered in ARTICLE 1.

OWNER State of Iowa, Department of Administrative Services



Trade Contractor: *Contractor Name*

By: \_\_\_\_\_

(Authorized Representative)

Name:

Title:

Date:

Owner: State of Iowa - DAS

By: \_\_\_\_\_

(Authorized Representative)

Name:

Title:

Date:

END OF DOCUMENT.

DRAFT



**SECTION 00 6000**

**PERFORMANCE AND PAYMENT BOND**

**PART 1 - GENERAL**

**1.01 PERFORMANCE AND PAYMENT BOND**

- A. Performance and payment bonds to be used on this project, ConsensusDocs 260 and 261 are attached for reference following this page. ConsensusDocs performance and payment bonds are not required (other standard forms are acceptable to the State of Iowa).

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**



## CONSENSUSDOCS 260 PERFORMANCE BOND

This document was developed through a collaborative effort of organizations representing a wide cross-section of the design and construction industry. The organizations endorsing this document believe it represents a fair allocation of risk and responsibilities for all project participants.

Endorsing organizations recognize that this document must be reviewed and adapted to meet specific needs and applicable laws. This document has important legal and insurance consequences. You are encouraged to consult legal, insurance and surety advisors before completing or modifying this document. The software includes a notes section indicating where information is to be inserted to complete this document. Further information and endorsing organizations' perspectives are available at [www.consensusdocs.org/guidebook](http://www.consensusdocs.org/guidebook).

For Use with ConsensusDOCS 200, Standard Form of Agreement and General Conditions Between Owner and Constructor (Where the Contract Price is a Lump Sum) and ConsensusDOCS 500, Standard Agreement and General Conditions Between Owner and Construction Manager.

The Owner, \_\_\_\_\_, (the "Owner") and the Constructor, \_\_\_\_\_, (the "Constructor") have entered into a Contract (the "Contract") dated \_\_\_\_\_ for \_\_\_\_\_ (the "Project"). The Contract is incorporated by reference into this Performance Bond (the "Bond").

By virtue of this Bond, the Constructor as Principal and \_\_\_\_\_ as Surety ("Surety"), are bound to the Owner as Obligee in the maximum amount of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) (the "Bond Sum"). The Constructor and Surety hereby bind themselves, their heirs, executors,

**IMPORTANT:** A vertical line in the margin indicates a change has been made to the original text. Prior to signing, recipients may wish to request from the party producing the document a "redlined" version indicating changes to the original text. Consultation with legal and insurance counsel and careful review of the entire document are strongly encouraged.

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administrators, successors and assigns, jointly and severally, as provided herein.

1. GENERAL CONDITIONS It is the condition of this Bond that if the Constructor performs its Contract obligations (the "Work"), the Surety's obligations under this Bond are null and void, Otherwise the Surety's obligations shall remain in full force and effect. The Surety waives any requirement to be notified of alterations or extensions of time made by the Owner in the Contract. The Owner may not invoke the provisions of this Bond unless the Owner has performed its obligations pursuant to the Contract. Upon making demand on this Bond, the Owner shall make the Contract Balance (the total amount payable by the Owner to the Constructor pursuant to the Contract less amounts properly paid by the Owner to the Constructor) available to the Surety for completion of the Work.

2. SURETY OBLIGATIONS If the Constructor is in default pursuant to the Contract and the Owner has declared the Constructor in default, the Surety promptly may remedy the default or shall

- a. Complete the Work, with the consent of the Owner, through the Constructor or otherwise,
- b. Arrange for the completion of the Work by a Constructor acceptable to the Owner and secured by performance and payment bonds equivalent to those for the Contract issued by a qualified surety. The Surety shall make available as the Work progresses sufficient funds to pay the cost of completion of the Work less the Contract Balance up to the Bond Sum, or
- c. Waive its right to complete the Work and reimburse the Owner the amount of its reasonable costs, not to exceed the Bond Sum, to complete the Work less the Contract Balance.

3. DISPUTE RESOLUTION All disputes pursuant to this Bond shall be instituted in any court of competent jurisdiction in the location in which the Project is located and shall be commenced within two years after default of the Constructor or Substantial Completion of the Work, whichever occurs first. If this provision is prohibited by law, the minimum period of limitation available to sureties in the jurisdiction shall be applicable.

This Bond is entered into as of \_\_\_\_\_.

SURETY \_\_\_\_\_ (seal)

By: .....

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

(Attach Power of Attorney)

Witness: .....

CONSTRUCTOR \_\_\_\_\_ (seal)

By: .....

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

Witness: .....

(Additional signatures, if any, appear on attached page)

**IMPORTANT:** A vertical line in the margin indicates a change has been made to the original text. Prior to signing, recipients may wish to request from the party producing the document a "redlined" version indicating changes to the original text. Consultation with legal and insurance counsel and careful review of the entire document are strongly encouraged.

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**CONSENSUSDOCS 261  
PAYMENT BOND**

This document was developed through a collaborative effort of organizations representing a wide cross-section of the design and construction industry. The organizations endorsing this document believe it represents a fair allocation of risk and responsibilities for all project participants.

Endorsing organizations recognize that this document must be reviewed and adapted to meet specific needs and applicable laws. This document has important legal and insurance consequences. You are encouraged to consult legal, insurance and surety advisors before completing or modifying this document. The software includes a notes section indicating where information is to be inserted to complete this document. Further information and endorsing organizations' perspectives are available at [www.consensusdocs.org/guidebook](http://www.consensusdocs.org/guidebook).

For Use with ConsensusDOCS 200, Standard Form of Agreement and General Conditions Between Owner and Constructor (Where the Contract Price is a Lump Sum) and ConsensusDOCS 500, Standard Agreement and General Conditions Between Owner and Construction Manager.

The Owner, \_\_\_\_\_, (the "Owner")  
and the Constructor, \_\_\_\_\_,  
(the "Constructor") have entered into a Contract (the "Contract") dated \_\_\_\_\_ for  
\_\_\_\_\_ (the "Project"). The Contract is  
incorporated by reference into this Payment Bond (the "Bond").

By virtue of this Bond, the Constructor as Principal and \_\_\_\_\_ as  
Surety ("Surety"), are bound to the Owner as Obligee in the maximum amount of  
\_\_\_\_\_ Dollars (\$ \_\_\_\_\_) (the  
"Bond Sum"). The Constructor and Surety hereby bind themselves, their heirs, executors,

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**IMPORTANT:** A vertical line in the margin indicates a change has been made to the original text. Prior to signing, recipients may wish to request from the party producing the document a "redlined" version indicating changes to the original text. Consultation with legal and insurance counsel and careful review of the entire document are strongly encouraged.  
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administrators, successors and assigns, jointly and severally, as provided herein.

1. GENERAL CONDITIONS It is the condition of this Bond that if the Constructor promptly makes payment of all sums for all labor, materials, and equipment furnished for use in the performance of the work required by the Contract, the Surety's obligations pursuant to this Bond are null and void. Otherwise the Surety's obligations shall remain in full force and effect. The Surety waives any requirement to be notified of alterations or extensions of time made by the Owner in the Contract.

2. SURETY OBLIGATION Every Claimant who has not been paid in full before the expiration of a period of ninety (90) Days after such Claimant provided or performed the last of the work or labor, or furnished the last of the materials for which said claim is made, may have a right of action on this Bond. The Surety's obligation to the Claimant(s) shall not exceed the Bond Sum.

3. LIMITATION OF ACTION No suit or action shall be commenced on this Bond by any Claimant  
a. Unless Claimant, other than one having a direct Contract with the Constructor, shall have given written notice to the Constructor, the Owner and the Surety within ninety (90) Days after the Claimant provided or performed the last of the work or labor, or furnished the last of the materials for which the claim is made, stating with substantial accuracy the amount claimed and the name of the Party to whom the materials were furnished, or for whom the work or labor was provided or performed. Such notice shall be served by any means which provides written third party verification of delivery to the Constructor at any place it maintains an office or conducts business, or served in any manner in which legal process may be served in the state in which the Project is located.  
b. After the expiration of one (1) year from the date on which the Claimant last performed labor or furnished materials or equipment on the Project. If this provision is prohibited by law, the minimum period of limitation available to sureties in the jurisdiction shall be applicable.  
c. Other than in any court of competent jurisdiction in the location in which the Project is located.

4. CLAIMANT A Claimant is defined as an individual or entity having a direct contract with the Constructor or having a contract with a subcontractor having a direct contract with the Constructor to furnish labor, materials or equipment for use in the performance of the Contract.

This Bond is entered into as of \_\_\_\_\_.

SURETY \_\_\_\_\_ (seal)

By: .....

Print Name: \_\_\_\_\_

Print Title: \_\_\_\_\_

(Attach Power of Attorney)

Witness: .....

CONSTRUCTOR \_\_\_\_\_ (seal)

By: .....

Print Name: \_\_\_\_\_

**IMPORTANT:** A vertical line in the margin indicates a change has been made to the original text. Prior to signing, recipients may wish to request from the party producing the document a "redlined" version indicating changes to the original text. Consultation with legal and insurance counsel and careful review of the entire document are strongly encouraged.

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Print Title: \_\_\_\_\_

Witness: .....

(Additional signatures, if any, appear on attached page)

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## SECTION 01 1200

### CONTRACT SUMMARY

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Project Information
- B. Project Summary
- C. Bid Scope Summary
- D. Work Hour Restrictions
- E. Access to Site
- F. Coordination with Occupants
- G. Rules for Construction Workers
- H. Bid Package Instructions

##### 1.02 PROJECT INFORMATION

- A. Facility Name/Location: Iowa Veterans Cemetery 34024 Veterans Memorial Dr. Van Meter, Iowa 50003
- B. DAS Project #: 9517.00
- C. Owner: State of Iowa, Department of Administrative Services, Hoover State Office Building, Level 3, 1305 East Walnut Street, Des Moines, IA 50319
- D. Owner's Representative: Brad Tonyan, Iowa Department of Administrative Services, 109 SE 13th Street, Des Moines, IA 50319
- E. Construction Manager: Travis Hoyle, DCI Group 220 SE 6<sup>th</sup> St Ste. 200 Des Moines, IA 50309

##### 1.03 PROJECT SUMMARY

- A. The project includes columbarium walls, site work and irrigation system expansion at the Iowa Veterans Cemetery.
- B. Target date to provide substantial completion is November 23<sup>rd</sup>, 2026.

##### 1.04 BID SCOPE SUMMARY

- A. Scope Applicable to All Bid Packages:
  - 1. The Contractor's Work includes all labor, supervision, materials, equipment, services, supplies, tools, facilities, transportation, hoisting, storage, receiving, licenses, inspections, certifications, overhead, profit, or other items required or reasonably inferable to properly and timely perform and complete all work and services to be performed by the Contractor pursuant to this Agreement. Unless specifically stated otherwise, incidental work required to accomplish the work of this Bid Package shall be included the bid. This would include, but not be limited to, temporary facilities, protection of the work, security of equipment, materials, and work in progress, etc. Contractor's Work shall be performed in accordance with the Drawings, Specification Divisions 00 and 01, and Specification sections applicable to each Contractor's scope.
  - 2. Contractor is responsible for all labor and equipment to unload, account for all material delivered, stock, and delivery for this scope of work. Storage and delivery of materials and equipment at the Site shall be permitted only to the extent approved in advance by the Construction Manager, and if anything so stored obstructs the progress of any portion of the work, it shall be promptly removed or relocated by the Contractor without reimbursement.
  - 3. On site supervision by Prime Contractor at all times work by that contractor or their subcontractors/suppliers is taking place.

4. Provide all temporary facilities required for this scope of work including trailer, trailer power, telephone, secured storage, temporary power for work, temporary and task lighting for work, etc. as determined necessary by Contractor. Coordinate location of trailers, material storage and utility lines with Construction Manager. Limited space is available, and permission to bring any such facility or excess materials on to the site shall be approved by the Construction Manager.
5. Contractor shall provide all equipment and tools for Contractor's own cleanup. Clean up shall be done at end of every shift or more frequently if required for the Contractor to perform their work, for other Contractors to perform their work, as required by the Owner's operations, and at the discretion of the Construction Manager.
6. All turf, landscaping, and subgrade disturbances caused by equipment traffic or other activities related to the Contractor's scope shall be repaired or restored to proper conditions by the Contractor.
7. Protect adjacent existing building elements from damage from Scope of work. Repair existing building elements damaged during Contractor's Scope of work.

#### **1.05 WORK HOUR RESTRICTIONS**

- A. Work hours are from 7:00 AM to 5:00 PM, Monday through Friday unless arrangements are made in advance.

#### **1.06 CONTRACTOR USE OF SITE AND PREMISES**

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Provide access to and from site as required by law and Owner:
  1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  2. Do not obstruct roadways, sidewalks, or other public ways without permission of Owner and permit if required.
- C. Facility will be occupied at all times during duration of work. Contractor personnel shall conduct themselves in an agreeable manner at all times. Failure to do so may result in removal from the work site.
  1. Contractors may be asked to pause loud activities during committal services on the property. Contractors will be given advanced notice of upcoming committal services usually a week but at minimum two-three days in advance that may affect what work can take place.
  2. IVC has the following service times reserved for services. Monday-Friday, 9:30 am, 11:00 am, 12:30 pm, and 2:00 pm, services are usually 15 minutes long.

#### **1.07 OWNER OCCUPANCY**

- A. Owner intends to occupy the Project upon Substantial Completion.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

#### **1.08 RULES FOR CONSTRUCTION WORKERS**

- A. The staff of the State of Iowa has a responsibility to protect the public by providing a secure environment. All work site rules must be followed to the letter, at all times.
- B. Hot Work Permit Processes and Fire Watch, when necessary, will be adhered to for this project.
- C. All State properties are tobacco free. No smoking will be permitted or tolerated on campus unless in designated areas.
- D. You are permitted access only to the work site and no other area of the institution.
- E. No drugs, alcohol, or firearms are allowed on the work site.
- F. Do not leave money, drugs, alcohol, or firearms in your personal vehicle.

- G. Company and personal vehicles are to be parked and locked in designated or authorized area of the work.
- H. Secure all tools at the end of the day.
- I. Maintain control of all tools, supplies, and debris at all times during the work.
- J. Secure all tools at the end of each day. Never leave tools unattended.
- K. All delivery vehicles must go directly to the job site. Extra time should be anticipated for all deliveries. Provide 24-hour notice to the facility of deliveries.
- L. During an emergency, follow the instructions of the staff.

## 1.09 BID PACKAGE INSTRUCTIONS

- A. **Bid Package #01** – Columbarium and Irrigation Expansion: Trade Contractor shall include all of the following, but not limited to, as part of the contract:
  - 1. Includes specifications
    - a. Division 00
    - b. Division 01
    - c. Division 03
    - d. Division 04
    - e. Division 07
    - f. Division 10
    - g. Division 12
    - h. Division 32
  - 2. General
    - a. It will be this Contractor's responsibility for protecting all areas to remain. This Contractor shall repair or replace any existing conditions that are damaged as part of this scope or work.
    - b. This Contractor is responsible for coordinating required soil inspections/testing with the Owner's third party provider.
    - c. Contractor shall provide and maintain all required SWPPP controls.
    - d. This Contractor is responsible to haul spoils to designated area on site.
    - e. This Contractor will be responsible for providing traffic control as needed for one's work. Coordinate all traffic control with the cemetery staff.
    - f. This contractor shall provide 6' tall chain link construction fence with opaque netting securely attached for the duration of construction as outlined in the contract documents.
    - g. This contractor shall provide temporary construction entrance, with signage for no public access, and 6" of stone over geotextile fabric. Upon completion of the project this shall be removed and salvaged clean granular material to the owner. Owner to provide stockpile location onsite at the end of construction. This area shall be prepped for a minimum depth of 6" for sod restoration
    - h. This contractor shall provide and maintain temporary restroom facilities for this project for the duration of construction.
    - i. Contractor shall utilize the area to the east and south of the project site for construction parking, laydown, and temp restroom facilities.
    - j. This Contractor shall provide and maintain a concrete "wash-out" container in accordance with State regulations for one's work.
    - k. This contractor shall provide two new cast iron benches, these will be placed at Columbarium Wall #13 as outlined in the contract documents.
    - l. This contractor shall provide new Space Force Service plaque and new bronze backer plaque with 1" stand-off mounts for the Committal Shelter at the Iowa Veterans Cemetery.
    - m. Contractor shall remove, salvage, clean and polish the five (5) existing plaques for reinstallation on new bronze backer plaque. These shall be remounted with new ½" standoffs.

- n. This Contractor is responsible for installation of furnishings supplied by the Owner as indicated in the contract documents.
3. Demolition
- a. This Contractor is responsible for complete removal of existing trees per the drawings. Contractor shall remove stump and root ball along with each tree. Contractor shall backfill holes as needed.
  - b. This contractor shall remove and cap existing irrigation lines at project extents.
  - c. This contractor shall relocate existing isolation valve quick couple valve and ground to new turf area.
  - d. This contractor shall protect existing paving, curbs, storm structures & piping columbarium walls, and trees called to remain as outlined in the contract documents.
4. Site Work
- a. This Contractor is responsible for all excavation, placement and backfill of the complete storm sewer scope including, but not limited to, new structures and HDPE piping.
  - b. This Contractor is responsible for rough grading and subgrade prep per the drawings.
  - c. This Contractor is responsible for providing all erosion control measures.
  - d. This Contractor shall strip and stock topsoil that is removed as part of the rough grading.
  - e. This Contractor is responsible for final grading to include spreading of existing top soil. Contractor shall supplement existing top soil as need to achieve 6" of top soil for all new areas of vegetation.
5. Concrete
- a. This Contractor is responsible for all PCC curbs and paving.
  - b. This Contractor is responsible for the foundations at the columbaria. This includes, but is not limited to, excavation, reinforcement, concrete, subdrains and backfill.
  - c. This Contractor shall ensure all exposed foundation concrete is finished per the contract documents.
  - d. This Contractor shall supply and install subdrain at foundations.
  - e. This Contractor shall include the cost of concrete pumping in their bid as required.
  - f. This Contractor shall include any/all costs to provide pumping and dewatering all footing excavations.
  - g. This Contractor is responsible to provide expansion, control, and isolation joints as indicated on the drawings. This shall include joints sealants as required.
  - h. This Contractor shall provide and install concrete curing as indicated on the drawings.
  - i. This Contractor shall provide and install all granular subbase as required under all PCC paving.
  - j. This Contractor is responsible for any/all formwork and steel reinforcing. This shall also include epoxy anchors and wall sleeves.
  - k. This Contractor is responsible for any/all vapor barriers, waterproofing, and sealers as indicated in the contact documents.
6. Masonry
- a. This Contractor is responsible for completing all masonry work including, but not limited to, all CMU, brick, limestone, stone masonry, grouting, mortar and anchors.
  - b. This Contractor to furnish and install all steel reinforcing scheduled for masonry work.

- c. This Contractor is responsible for all backer rod and sealant that is in contact with the material provided by this bid package.
  - d. This Contractor shall clean one's work in accordance with the contract documents.
7. Columbarium Structures
- a. Contractor to furnish and install all precast columbarium structures.
  - b. This Contractor shall provide and install drainage weeps at base of columbarium structures.
  - c. This Contractor to furnish and install all metal signage for columbarium wall numbers scheduled for installation on masonry items.
  - d. Contractor to install all niche covers as supplied by the Owner. This Contractor to coordinate delivery of niche covers with the Owner. This Contractor to provide all hardware for installation.
  - e. Contractor shall coordinate the installation of niche covers with Iowa Veterans Cemetery Representatives. Contractor shall provide a mock up on a section of the new columbarium wall with 5 rows and 5 column for review by the team. Approval by IVC, Architect and Construction Manager is required for final horizontal and vertical alignment of niche covers before installation can be considered complete.
8. Landscaping
- a. This Contractor is responsible for the complete site irrigation package. Irrigation system shall tie into the existing system.
  - b. This Contractor shall supply and install sod per the drawings. Contractor shall prep and scarify all disturbed areas and remove debris prior to sod installation.
  - c. This Contractor shall supply and install all plants and trees as noted on the drawings including mulch.

B. **Owner Furnished Products:** The State of Iowa will provide the following materials for installation by the contractor:

- 1. Niche covers for columbarium walls

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

## SECTION 01 1201

### GENERAL WORK REQUIREMENTS SCOPE OF WORK

#### **Bidding:**

1. The Contractor shall include all applicable fees, permits, freight, hoisting, scaffolding, clean up, supervision, overhead, etc. to perform his work.
2. Bidders to review ALL Bid Packages to fully understand the requirements of each package. Where two bid packages conflict, confirm with Construction Manager as to which package is to perform the work noted before bidding. After bidding, any conflict noted will be evaluated by the Construction Manager. The Construction Manager will then determine which package should perform the work and which package will credit the associated work's cost.
3. Where conditions conflict in the project manual or project drawings with Construction Manager's general work requirements, special work requirements, or bid package conditions, contact the Construction Manager for clarification. When in doubt figure the more extensive requirement.
4. Each contractor is responsible for the identification of alternates and how they relate to each bid package. If a bid package is affected in ANY way by ANY of the alternates, an add/deduct should be noted on the bid form. If there is no change in cost write zero dollars.
5. The Contractor should visit the site of the Work to acquaint the firm with all local conditions affecting the Contract, including the structure of the ground, the obstacles which may be encountered, and all other conditions relative to the Work to be performed; and shall not be allowed any extra compensation by reason of any difficulties or obstacles which the Bidder could have discovered or reasonably anticipated prior to Bidding. The Contractor shall review Instructions to Bidders for coordination of site visits.
6. On all project Drawings, figures take precedence over measurement by scale, and any scaling is done at the Contractor's own risk. The Design Professional shall decide on questions that may arise regarding the meaning and intent of the Project Drawings and Project Specifications. Should any details or figures have been omitted which are necessary to a clear understanding of the Work or should any error appear in either, or should discrepancies be found between the Project Drawings and Project Specifications, it shall be the duty of the Contractor to notify the Construction Manager of such omissions, errors, or discrepancies, and in no case proceed in uncertainty. Mistakes resulting from the Contractor's neglect to notify the Construction Manager in such matters shall be corrected at the expense of the Contractor. Bidders are responsible for all electronic documents and their use is at their risk.
7. All Contractors are responsible for on-the-job supervision of their work, or any subcontracted work. An onsite Superintendent or lead foreman is required during any time that work is being performed to coordinate their work and work with other trades. No superintendent or lead foreman may be replaced without approval of the Owner and DCI Group. Any work necessary to be performed after the regular working hours shall be supervised and shall be done at no additional cost to the Owner.
8. All food and drinks shall be confined to CM designated areas and a maintained covered trash container shall be provided by the contractor. Failure to comply with this rule may cause a need for extra cleaning efforts by others which will result in a back charge to the Contractor.
9. Tools, materials, and equipment storage and security is the responsibility of each Contractor.
  
10. All work shall comply with the applicable codes and standards adopted by the Authority having Jurisdiction.

11. All Authorities having Jurisdiction inspections shall be requested by the responsible contractor and coordinated through the Construction Manager. Attendance by contractors is mandatory as applicable to the work being inspected.
12. All contractors must have the appropriate licenses to perform work in the jurisdiction(s).
13. Before ordering any materials or performing any Work, the Contractors shall verify all measurements at the Project Site for the particular Work and be responsible for the correctness of same. No extra charge or compensation will be allowed to the Contractor on account of differences between actual dimensions and the measurements shown on the Project Drawings. Any noticeable discrepancy in this request shall be reported to the Construction Manager immediately for his consideration and decision. All the component parts of the Work shall be carefully checked and laid out in order that the structure as a whole shall conform to the intent of the Project Drawings and Project Manual.
14. The Contractor shall have personnel attending regular project meetings. These meetings will be held at intervals established by the Construction Manager. Contractors must have representative attending when they are on the job or needed for coordination prior to having work start on the project. The representative attending must be able to adequately represent the Contractor and speak on the Contractors behalf providing valuable information to the meeting; specifically, things such as schedule, cost, production, manpower, etc.
15. The Contractor will be required to attend all pre-installation conferences before commencement of related work.
16. The Contractor shall complete a daily log for each workday on site and submit to Construction Manager. Content of daily log will be directed by Construction Manager.

**Safety:**

17. The contractor shall comply with all local and federal, safety and health requirements.
  - a. The contractor will provide a safety plan customized for the project to DCI Group.
  - b. All prime contractors, subcontractors, and/or any second/third tier subcontractors must conduct weekly internal "toolbox safety" meetings and submit documentation of such to the Construction Manager.
  - c. It is the contractor's responsibility to notify other contractors on the jobsite of any hazardous materials to which their employees may be exposed. This communication shall be defined as the ability to produce all material SDS information customized for the project. This documentation shall be available for the duration a prime contractor, subcontractor, and/or any second/third/etc. tier subcontractors are onsite.
  - d. All Contractors shall inform their employees to immediately advise their supervisor of any unsafe conditions that are encountered. The supervisor shall promptly remediate such danger and/or contact the Construction Manager.
  - e. Contractors shall be responsible for adhering to all OSHA and facility fire watch and hot work requirements (See Construction Manager for facility requirements). Contractors performing hot work are to have a fire extinguisher in their work areas at all times as applicable.
  - f. All Contractors are responsible for their own fall protection.
  - g. Contractors are required to provide emergency phone numbers at the request of the Construction Manager. Emergency phone numbers are numbers where the Contractor can be reached during off hours.
  - h. All floor edge, roof and similar openings, barricades, handrails, or cabling for fall protection will be installed by the Contractor that creates the hazard as part of that Contractor's scope

of work. At no time shall an opening be left unprotected from fall hazard. All Contractors shall protect and maintain such devices per OSHA standards. When a device conflicts with the work of this bid package or when the work of this bid package replaces the need for such devices, this Contractor is responsible for removal. If the work of this Contractor requires additional holes/penetrations, this Contractor shall provide necessary protection until final materials are installed.

- i. No fire exit can be blocked at any time.

**Site Management:**

18. All contractors are responsible for all their own utility locates. This shall include both public and private locates. All Contractors shall coordinate locates with One Call Services.
19. When active services are encountered in the Work, protect, brace and support existing active sewers, gas, electric or other services, where required for proper execution of the Work. If existing active services are encountered that require relocation, make a request in writing for determination. Do not proceed with Work until written directions are received. Do not prevent or disturb the operation of active services that are to remain.
20. All contractors are required to protect their work. Provide proper protection for all existing work performed by others when performing your work next to, or around, other materials. Repair or replacement of any damaged material will be the responsibility of the contractor who damaged it.
21. All contractors/vendors are responsible for their own cutting and patching unless otherwise specified.
22. All contractors are responsible for maintaining dust and fume control during their work. Contractor will provide a dust and fume control plan customized for the project to DCI Group.
23. Contractors shall be responsible for maintaining traffic control coordination with the Owner, DCI Group, and the Authority Having Jurisdiction.
24. Public and private roadways will be maintained and cleaned as required by the contractor leaving debris, mud, excess gravel, etc. on roadways at their expense as defined in bid packages.
25. No steel track mounted equipment will be allowed on finished paved surfaces. Any damage to the finished paved surfaces will be repaired at the cost to the contractor causing such damage.
26. Bridging of finished pavement will be the responsibility of the contractor. This includes bridging curbs, pavement, sidewalks, etc. Any damage to the aforementioned including pavement markings, will be repaired or replaced at the cost of the contractor causing such damage.
27. Contractors that have work that requires equipment off of the existing roadways are required to locate and protect from damage all under and above ground existing features such as utilities, tunnels, landscaping, etc.... The Contractor will be responsible to repair back to original condition any damages that occur, including but not limited to ruts and sod damage.
28. Any areas disturbed or damaged by one's operation are to be repaired to Owner/Construction Manager's satisfaction.
29. The Contractor shall clean their installed materials prior to the next successor activity.
30. If a contractor applies layout/markings to the concrete slab that contractor shall be responsible for removal of such foreign material to meet the requirements of the floor covering manufacturer. All contractors are responsible for familiarizing themselves with the flooring materials included in the project, where they are located, and the floor preparation requirements to ensure that the flooring manufacturers' installation requirements are met. (See Construction Manager for information) Contractors shall coordinate with the party responsible for placing the concrete slab on grade and successor contractors working on the slab on grade. (Existing slabs on grade are to be treated similarly).

31. Any signs located on the jobsite must be approved by the Construction Manager. Signage will not be allowed in most cases unless it is required for safety or provides instructions.
32. Receiving, unloading and handling of material provided by the bid package shall be included. Spotting location shall be coordinated with the Construction Manager. All deliveries shall be coordinated with other Contractors and Construction Manager in advance of the delivery. Provide freight to the jobsite for any material provided. If storage is not available onsite, each bid package shall include other means of secure storage. If the contractor is not onsite to unload delivery, the delivery will be rejected and will have to be re-scheduled at the contractor's expense. Materials must be stored off the ground, out of the mud and on a solid surface. As required or needed, material should be stored on dunnage or pallets in order to keep it off the ground or surface below. Special storage is the responsibility of the respective contractor.
33. Contractors shall not store materials within construction designated locations without approval from Construction Manager. No materials storage will be allowed that may inhibit construction progress.
34. The Contractors shall layout and correctly establish all lines, levels, grades, positions, walls, partitions, equipment and location of all Work on the Project and be responsible for their accuracy and proper correlation with control lines, monuments and data furnished. Such monuments and data shall be carefully preserved and, if displaced, reset at the expense of the persons displacing them.
35. All Contractors are responsible for the coordination of their work with the complete set of specifications, construction drawings, addenda, request for information (RFI's), Architect's Supplemental Instruction to Contractor (ITC/ASI), shop drawings, coordination drawings, and other contract modifications.
36. The Contractor shall carefully inspect any work performed by others that is to receive, align, abut or similarly relate to the Contractor's work and shall immediately notify the Construction Manager in writing of any apparent defects, incompatibilities, or inconsistencies. The Contractor is responsible for coordinating and verifying the dimensions, measurements, and elevations at the project site relevant to the Contractor's work. If Contractor commences his work without a formal response to such written notice, such commencement shall constitute acceptance of all such work performed by others and of all such field conditions, and all costs incurred in connection with the Contractor's work as a result thereof shall be borne by Contractor.
37. Incorporate construction tolerances for the work of others into the design of the systems in this scope of work. Include field measurements of work by others and any necessary adjustments to systems prior to fabrication to accommodate such allowable tolerances, or accept all costs to correct materials, which do not fit job conditions.
38. Any interior work that is scheduled to be completed while Owner is in normal operation must be sensitive to the Owners continued use of the building. No workers are allowed to be in areas of the building that are not directly related to their scope of work. Hallways and general access paths to construction areas must also be kept clean at all times. The Owner has the right at any time to shut down any construction activities that they deem to be too much of a distraction to the occupants of the building.
39. All contractors are responsible for familiarizing themselves with the coordination and sequencing requirements related to Owner furnished equipment.
40. If not already required by the contract documents and reasonably requested by the Construction Manager, the Contractor shall prepare coordinated drawings in areas of congestion specifically noting and advising the Construction Manager of potential conflicts between the Contractor's work and other work at the project. Even with such cooperative and coordinated efforts should a conflict occur the Construction Manager will determine how such conflicts should be resolved and its decision in that regard will be final. The Contractor agrees to abide by such decisions and make any changes required to eliminate such conflict without additional costs or expense to the Owner.

**Schedule Management:**

41. Prior to the commencement of the construction for the Prime Contract Work, the Prime Contractor shall participate in a minimum of two (2) joint planning meetings with the Construction Manager and other Prime Contractors for the purpose of planning the overall Construction Schedule. A Preliminary Construction Schedule as developed by the Construction Manager will be used as the basis of the overall Construction Schedule. In consultation with the Prime Contractor, the Construction Manager shall incorporate the Prime Contract Work and work of other prime contractors into the overall Construction Schedule for the entire project. Critical Milestones and working hours as defined by the Construction Manager (as included in the bidding documents) will not be altered. The Prime Contractor shall on a weekly basis (at a minimum) provide the Construction Manager with scheduling information with regards to progress and work to be performed in the next 4 (four) weeks. The Prime Contractor shall be bound by the Construction schedule. Nothing in the Prime Contract Agreement shall relieve the Prime Contractor of any liability for any unexcused failure to comply with the agreed upon overall Construction Schedule or any completion dates. The Construction Manager shall have the right to coordinate the Prime Contractors, including the right, if necessary, to change the time, order and priority in which the various portions of the Prime Contract Work and other work associated with the Project shall be performed.
42. All prime contractors, subcontractors, and/or any second/third tier subcontractors onsite shall participate in daily coordination meetings with the Construction Manager as well as weekly work plan meetings as the project progresses.
43. All Contractors shall cooperate with the Construction Manager, consultants, and with other Contractors. The completion of the Work will depend upon a collective effort by all parties involved.

**General Housekeeping:**

44. Daily cleanup (broom clean) of dust and debris from construction operation is part of each contractor's scope of work. If any contractor fails to keep the site clean and organized on a continuous basis, the Construction Manager will notify the contractor in writing only once. The contractor will then have 24 hours to correct the situation. If the contractor fails to correct the situation, the Construction Manager will hire another party for cleaning and charge the said contractor. The Contractor shall submit prior to beginning work a plan to the Construction Manager defining manpower and methods for achieving daily cleanup. If Construction Manager deems necessary, each Contractor shall provide 1 employee for each 5 employees on the project to clean all work areas and/or staging areas to a broom clean condition. If the Contractor has less than 5 employees on site, the contractor will provide 1 employee to the necessary cleanup requirement. Cleanup duration will take as long as it takes to achieve the broom clean results.
45. Daily cleanup shall include all applicable portions of a project including but not limited to the building, site, public streets, lay-down areas, and designated contractor parking areas.
46. If rework is necessary to be performed by any contractor, that contractor shall be responsible for all associated cleanup and installation/removal of protection measures on all adjacent surfaces where rework took place including access to and from the area.

## SECTION 01 1202

### SPECIAL WORK REQUIREMENTS SCOPE OF WORK

1. Bidders are to hold their bids for a period of thirty (30) days after the bid.
2. Contractors and their employees shall show upmost respect for the occupying public and staff. Profanity and unnecessary loud language will not be tolerated.
3. Contractors shall instruct their personnel to not allow public/staff to follow them in to the work areas nor assist the students/staff in going in to other restricted areas.
4. Each Contractor working in Owner occupied space will provide necessary means of protection to floors, walls, ceilings, equipment as required to accomplish work without harming or damaging existing conditions. All damage performed during this work will be charged to the responsible contractor.
5. The use of motorized scissor lifts will not be allowed except under special circumstances and must have prior approval from the Construction Manager.
6. Contractor's deliveries during cemetery hours will require an attendant to guide truck traffic into the designated construction entrance(s) for public/staff safety. All deliveries must be accepted by the Contractor. Delivery times will be restricted to the following:
  - Monday - Friday: No deliveries at the following times 9:30-10:00, 11:00-11:30, 12:30-1:00, and 2:00-2:30
7. Owner will provide snow removal to all existing pavements on campus that are not under construction. See specific Contractor's responsibility under specific Bid Packages.
8. Contractor includes complete cleanup and haul offsite for all typical construction debris resulting from this scope of work. Bid Package #1 Contractor will be responsible for providing dumpsters as required for the entire project duration and understands that ALL Bid Packages will be using dumpster. Each Prime Contractor to provide brooms, shovels and other equipment for cleanup for their respective scope of work. Excess materials shall be removed from the site at the Contractor's expense. All primes shall remove debris on a daily basis.
9. Contractor will be responsible to provide portable generators or an alternative power source for all tools and equipment that require a power source higher than 120 Volt.
10. Prior to performing work in areas with smoke and fire detection systems the Contractor shall coordinate with the CM precautionary measures to eliminate false alarms. If the fire alarm system is activated and there is not an emergency the Contractor responsible for the false activation shall be responsible to pay for all resulting owner incurred expenses such as Emergency Response fees.
11. Bid Package #01 will provide temporary toilet facilities for ALL Contractors and for the entire duration of the project. Temporary toilets shall meet all OSHA regulations.
12. Contractors shall document existing conditions prior to start of work. All damage to existing pavements, landscaped areas, and all other existing property will be repaired by the responsible Contractor. Interior as well.
13. See flowcharts in the following pages. These flowcharts will aid the bidder(s) in understanding how communication will flow during construction.
14. The Prime Contractor's shall provide the Construction Manager detailed information as outlined below for the purpose of developing the Construction Schedule:

#### SUBMITTALS:

- Submittal Schedule: Prime Contractor shall submit a submittal schedule listing all required submittals, submittal "To CM" dates, procurement durations, and expected dates for materials to be on the jobsite. The submittal schedule shall be submitted to the CM within five (5) business days of receipt of Owner/Prime Contractor Agreement.
- Format: Submittal Schedule shall be prepared in an Excel spreadsheet.
- Materials & Long Lead Procurement: Prime Contractor shall identify any/all submittal items that require "field verifies" and also identify the dates when these field verifies can be taken.

15. See preliminary construction schedule in the following pages. This schedule will aid the bidder(s) in understanding the preliminary scheduling and planning for the project. As the construction schedule is finalized the **Prime Contractor and their Subcontractors** shall participate in a meeting with the Construction Manager and other Prime Contractors for the purpose of presenting the overall Construction Schedule. These “Subcontractors” shall be any/all subcontractors who will be performing Work on the project.
16. Per the preliminary construction schedule the bidder(s) acknowledges that there are multiple mobilizations, phases, sub-phases, material deliveries, and milestone completion dates required in order to complete the work.
17. The Owner owns the weather duration contingency as shown in the preliminary construction schedule on the following pages. The Construction Manager manages and will adjust the weather duration contingency. As weather days are not utilized the milestone dates shall be adjusted accordingly.
18. **Expected work hours will be 7:00 AM to 5:00 PM Monday thru Friday (5 day work week). Contractors requiring working time other than these hours are to coordinate and receive approval in advance from the Construction Manager. The Contractor shall provide at his expense increased work crews and/or overtime necessary to meet the scheduled milestones. Contractor shall immediately notify the Construction Manager of any delays in the work.**
19. The forecasted date to start construction is April 12, 2027.
20. All questions concerning the bid requirements should be addressed to Construction Procurement CPE [construction.procurement@das.iowa.gov](mailto:construction.procurement@das.iowa.gov) in writing and will be clarified in writing by Addendum.
21. After contract award bid the Contractor is required to attend a meeting with the Construction Manager to review bid package scopes.
22. Parking and material staging on site will be limited. All contractors shall coordinate one’s parking and material staging with the DCI Group Project Manager, DCI Superintendent or DCI Designated Personnel.
23. The jobsite is on Public Property. Smoking or smokeless tobacco **WILL NOT** be allowed. Also, no shelled sunflower seeds are allowed at the cemetery.
24. No radios or headsets are allowed in the construction areas.
25. All noise, vibration, disconnections and disruptions caused by one’s work **MUST** be coordinated in advance with the Construction Manager and Owner. Provide a minimum of 48 hours’ notice of any such disruption.
26. All warranties start at Project Substantial Completion, Contractor will be required to provide from this date and not the startup date of the equipment. Contractor will not be compensated for any cost related to purchasing extended warranties to meet this requirement. See Special Work Requirements for project schedule information.
27. Contractors shall maintain accurate as-built construction records and provide complete clean and legible copies to Construction Manager on completion of work. All Contractors will be required to provide electronic copies as well as hard copies of all O&M’s and as-built drawings. See Project Manual for additional Closeout requirements.

**END OF SECTION 00 7303**

## SECTION 01 2500

### SUBSTITUTION PROCEDURES

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Substitution Procedures
- B. Request for Substitution form

#### PART 2 - PRODUCTS – NOT USED

#### PART 3 - EXECUTION

##### 3.01 SUBSTITUTION PROCEDURES

- A. Where the Bidding Documents stipulate a specific product be provided by naming one or more manufacturer and model, a substitute product will be considered when written request is received by the date and time identified in Section 00 1113 NOTICE TO BIDDERS. Substitution requests will be considered for all products, even if the specification does not include a statement such as “or equal,” “equal to,” “equivalent to,” or “basis of design,” unless noted otherwise.
- B. References in the Bidding Documents to brand or trade names are intended to illustrate the general characteristics of the item and not to limit competition unless noted otherwise.
- C. The written request shall be on the “Request for Substitution” form included in the Project Manual. If no such form is included, the request shall be provided on the letterhead of the company making the request.
- D. Substitution requests received after the specified date will be viewed in the context of a Change Order to the Contract, and consideration will only be given in the event a product becomes unavailable or not practical due to no fault of the Contractor, or the substitution is substantially to the Owner’s advantage (equal product for less cost or higher quality product at no change in Contract Sum).
- E. Document each substitution request with complete data substantiating compliance of the proposed substitution with the Bidding Documents. Each request shall identify the specified product for which the substitution is requested, and shall clearly describe the product for which approval is requested. The burden shall be on the requester to demonstrate the proposed substitute product’s suitability for use in the Work and its equivalency or superiority in function, appearance, quality, and performance with the product named in the Bidding Documents.
- F. A description of any changes to the Bidding Documents that the proposed substitution will require shall be included with the request. The requester shall affirm that dimensions shown on the Drawings will not be affected by the substitute product, and that it will have no adverse effect on other trades, the construction schedule, or specified warranty requirements. The request for use of a substitute product shall be signed by an authorized representative of the firm submitting the request, who shall state that the firm will pay for any changes to the building design, including Design Professional’s design, detailing, and construction cost caused by the requested substitution if the substitution is approved for use in the Work.
- G. All such substitute products approved for use in the Work during the established period of time before receipt of Bids will be identified in a subsequent Addendum to the Bidding Documents.

##### 3.02 REQUEST FOR SUBSTITUTION FORM

- A. A Request for Substitution Form is attached following this page.
- B. Substitution requests shall be emailed to the Issuing Officer at the email address provided in Instructions to Bidders Section 1.04.

**END OF SECTION**

# SUBSTITUTION REQUEST FORM

---

Project: \_\_\_\_\_ Substitution Request Number: \_\_\_\_\_  
\_\_\_\_\_  
From: \_\_\_\_\_  
To: \_\_\_\_\_ Date: \_\_\_\_\_  
\_\_\_\_\_  
A/E Project Number: \_\_\_\_\_  
Re: \_\_\_\_\_

---

Specification Title: \_\_\_\_\_ Description: \_\_\_\_\_  
Section: \_\_\_\_\_ Page: \_\_\_\_\_ Article/Paragraph: \_\_\_\_\_

---

Proposed Substitution: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_ Address: \_\_\_\_\_ Phone: \_\_\_\_\_  
Trade Name: \_\_\_\_\_ Model No.: \_\_\_\_\_  
\_\_\_\_\_

History:  New product  2-5 years old  5-10 yrs old  More than 10 years old

Differences between proposed substitution and specified product: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Point-by-point comparative data prepared by contractor and attached - REQUIRED BY A/E

---

Reason for not providing specified item: \_\_\_\_\_  
\_\_\_\_\_

Similar Installation:  
Project: \_\_\_\_\_ Architect: \_\_\_\_\_  
Address: \_\_\_\_\_ Owner: \_\_\_\_\_  
\_\_\_\_\_ Date Installed: \_\_\_\_\_

Proposed substitution affects other parts of Work:  No  Yes; explain \_\_\_\_\_  
\_\_\_\_\_

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Supporting Data Attached:  Drawings  Product Data  Samples  Tests  Reports  \_\_\_\_\_

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# SUBSTITUTION REQUEST FORM

(Continued)

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted by: \_\_\_\_\_

Signed by: \_\_\_\_\_

Firm: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Attachments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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## A/E's REVIEW AND ACTION

- Substitution approved - Make submittals in accordance with Specification Section 01 3300.
- Substitution approved as noted - Make submittals in accordance with Specification Section 01 3300.
- Substitution rejected - Use specified materials.
- Substitution Request received too late - Use specified materials.

Signed by: \_\_\_\_\_

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

---

Additional Comments:     Contractor     Subcontractor     Supplier     Manufacturer     A/E     \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## SECTION 01 2600

### CONTRACT MODIFICATION PROCEDURES

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Change procedures

##### 1.02 CHANGE PROCEDURES

- A. The Design Professional will advise of minor changes in the work not involving an adjustment to Contract Sum/Price or contract time as authorized.
- B. The Construction Manager may issue a Proposal Request that includes a detailed description of a proposed change with supplementary or revised drawings and specifications and a change in contract time for executing the change as provided by the Design Professional. The Trade Contractor will prepare and submit an estimate within 7 calendar days. Estimates shall be provided for the project at no cost, regardless of acceptance or rejection of proposal.
- C. The Trade Contractor may propose changes by submitting a Request for Information to the Construction Manager, describing the proposed change and its full effect on the work. Include a statement describing the reason for the change, and the effect on the Contract Sum/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 the specifications. Construction Manager will forward the Request for Information on to the Design Professional for their official response.
- D. Stipulated Sum/Price Change Order: Based on executed Change Order and contractor's fixed price quotation.
- E. Unit Price Change Order: The change order will be executed on a fixed unit price basis for pre-determined unit prices and quantities. Changes in contract price or contract time will be computed as specified for time and material change orders.
- F. Time and Material Change Order: The change order will be executed on a not to exceed basis. Design professional and Construction Manager will determine the not to exceed estimated cost based on contractor's proposal for hourly rates and material costs. Maintain detailed records of work done on time and material basis. Time and Material tickets must be submitted daily to the Construction Manager for verification. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the work. Submit itemized account and supporting data after completion of change. A final deductive change order will be issued to reconcile final cost to the initial change order.
- G. Change Order Forms: CONSENSUSDOC Forms provided by Owner.
- H. Execution of Change Orders: The Construction Manager will issue change orders for signature of parties as provided in the Conditions of the Contract.
- I. With respect to pricing change orders, the percentage mark-up for overhead and profit is subject to the following limits:
  - 1. Fifteen (15) percent maximum for work directly performed by employees of the Constructor, Subcontractor or Sub-subcontractor.
  - 2. Five (5) percent maximum for work performed or passed through by a Subcontractor and passed through to the Owner by the Constructor.
  - 3. Five (5) percent maximum Subcontractor's mark-up for Work performed by a Sub-Subcontractor and passed through to the Owner by the Subcontractor and Constructor.
  - 4. The maximum allowable mark-up shall be twenty-five (25) percent passed through to the Owner by the Constructor under any circumstances. Overhead and profit shall be shown separately for the Constructor and each Subcontractor of any tier performing the Change Order Work.
- J. Contractor and subcontractor agree to provide and require all suppliers to provide a detailed breakdown of labor, labor burden, materials, installation, rental, and fuel costs.

K. Please refer to Article 8 of **CONSENSUSDOCS 802- STANDARD FORM OR AGREEMENT BETWEEN OWNER AND TRADE CONTRACTOR** for additional Change Procedures.

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

## SECTION 01 2900

### PAYMENT PROCEDURES

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Schedule of values
- B. Application for payment

##### 1.02 SCHEDULE OF VALUES

- A. Coordination: Trade Contractor will coordinate preparation of the Schedule of Values with preparation of the Construction Manager's Construction Schedule.
  - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Application for Payment forms with Continuation Sheets, Submittals Schedule, and Construction Manager's Construction Schedule.
  - 2. Submit original Schedule of Values in Procore within 14 days after date of Owner-Trade Contractor Agreement. Schedule of Values must be approved by Owner prior to submission for first application for payment.
- B. Format: Utilize the Table of Contents of this project manual. Identify each line item with number and title of the major specification section. Each major specification section should be further itemized by materials cost, labor cost and subcontractor cost for each building separately for the base bid and all accepted alternates. Identify site mobilization, bonds and insurance and include a line item for closeout paperwork for a value of no less than 1% of the total contract value or \$1,000, whichever is greater.
  - 1. Identification: Include the following Project identification on the Schedule of Values:
    - a. Project name and location.
    - b. Name and address of Owner, Trade Contractor, Construction Manager and Design Team.
    - c. DAS Project Number.
    - d. Date of Submittal.
  - 2. Revise the Schedule of Values to list approved Change Orders with each Application for Payment.

##### 1.03 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications for payments as certified by the Design Professional and paid for by Owner.
  - 1. Application for Payment at time of Substantial Completion and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement. Progress payments shall be submitted to the Construction Manager. Any request for payment for work completed prior to June 30<sup>th</sup> of any year needs to be submitted by July 15<sup>th</sup> of the same calendar year.
- C. Payment Application Forms: Use AIA form G702 and G703 as the form for the Application for Payment or an equivalent approved by the owner.
- D. Include lien waiver forms required by the owner when applicable.
- E. Application Preparation: Complete every entry on form. Construction Manager will return incomplete applications without action.
  - 1. Include amounts of Change Orders issued before last day of construction period covered by application.

- F. Waivers of Mechanic's Lien: If requested by Owner with each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment when applicable.
  - 1. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  - 2. Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- G. Initial Application for Payment: Administrative actions and submittals that must precede submittal of first Application for Payment include the following:
  - 1. Schedule of Values
  - 2. Certificates of insurance and insurance policies.
  - 3. Lists of vendors and any subcontractors.
- H. Application for Payment at Substantial Completion: After the Certificate of Substantial Completion has been fully executed, submit an Application for Payment showing 100 percent completion for the portion of the Work claimed as substantially complete, not including the closeout paperwork line item.
  - 1. Include documentation supporting the claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- I. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
  - 1. Evidence of completion of Project closeout requirements.
  - 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  - 3. Updated final statement, accounting for final changes to the Contract Sum.
  - 4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
  - 5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  - 6. AIA Document G707, "Consent of Surety to Final Payment."
  - 7. Letter of Notification to all sub-contractors and suppliers of application for release of retainage.
  - 8. Evidence that claims have been settled.
- J. Payments will be made to the extent of the value of the work performed in the previous month less a retainage amount of 3% of the value of the work performed. Upon substantial completion for the entire work, a sum sufficient to decrease the total retained to 3% of the contract sum, plus the full amount of the line item for closeout paperwork, plus such other retainage as the engineer shall determine for all incomplete work and unsettled claims will be authorized. The closeout paperwork line item may only be billed once the certificate of final completion has been fully executed.

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

## SECTION 01 3100

### PROJECT MANAGEMENT AND COORDINATION

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Coordination
- B. Pre-construction meeting
- C. Progress meetings
- D. Coordination Meetings
- E. Requests for Interpretation (RFIs)
- F. Notifications for Iowa Veterans Cemetery
- G. Utility Locates/Ground Penetrations for Iowa Veterans Cemetery
- H. Utility Locates/Ground Penetrations
- I. Fire Watch for Iowa Veterans Cemetery

##### 1.02 COORDINATION

- A. 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.
  - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Administrative procedures: The Trade Contractor will coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
  - 1. Preparation of Trade Contractor's Construction Schedule.
  - 2. Provide updated information for Construction Manager's Construction Schedule.
  - 3. Preparation of Schedule of Values.
  - 4. Delivery and processing of submittals.
  - 5. Progress meetings.
  - 6. Pre-installation conferences.
  - 7. Project closeout activities
- C. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work, which are indicated diagrammatically on drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated conceal pipes and wiring within the construction. Coordinate locations of piping with finish elements.
- F. Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion.
- G. After owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of owner's activities.
- H. During construction coordinate use of site and facilities through Construction Manager.

- I. Comply with Construction Manager and Owner's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- J. Make the following types of submittal to Architect through the Construction Manager via Procore:
  - 1. Request for Information/Interpretation.
  - 2. Request for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.
  - 6. Manufacturer's instructions and field reports.
  - 7. Applications for payment and change order requests.
  - 8. Progress schedules.
  - 9. Coordination drawings.
  - 10. Correction punch list and final correction punch list for substantial completion
  - 11. Closeout submittals

**PART 2 - PRODUCTS – NOT USED**

**PART 3 - EXECUTION**

**3.01 PRE-CONSTRUCTION MEETING**

- A. The Construction Manager and Owner will schedule a meeting after Notice of Award.
- B. Required: Design Professional, Owner, Construction Manager, Trade Contractor and any Sub Contractors.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties in Contract.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, change orders, RFIs and contract closeout procedures
  - 7. Tentative construction schedule.
  - 8. Critical work sequencing and long-lead items.
  - 9. Procedures for testing and inspecting.
  - 10. Preparation of Record Documents.
  - 11. Safety Procedures.
  - 12. Owner's requirements.
  - 13. Security and housekeeping procedures.
  - 14. Background Checks.
  - 15. Responsibility for temporary facilities and controls.
  - 16. Construction waste management.
  - 17. Logistics (use of premise, parking, work restrictions, maintain egress, etc.)
- D. The Construction Manager is to record minutes and distribute copies within two days after meeting to participants, with one copy to owner, participants, and those affected by decisions made.

**3.02 PROGRESS MEETINGS**

- A. The Construction Manager shall schedule and administer meetings throughout progress of the work at weekly, intervals.

- B. The Construction Manager is to make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings, record minutes and distribute copies within two days to those affected by decisions made.
- C. Attendees may include: Project superintendent, major subcontractors and suppliers, Owner, Construction Manager, Architect/Engineer, as appropriate to agenda topics for each meeting. All participants at the conference call shall be familiar with the Project and authorized to conclude matters relating to the Work.
- D. Agenda:
  1. Review minutes of previous meetings.
  2. Review the Construction Manager's Construction Schedule.
  3. Field observations, problems, and decisions.
  4. Identification of problems that impede planned progress.
  5. Review of submittals schedule and status of submittals.
  6. Review of RFI's.
  7. Review of off-site fabrication and delivery schedules.
  8. Corrective measures to regain projected schedules.
  9. Planned progress during succeeding work period.
  10. Coordination of projected progress.
  11. Maintenance of quality and work standards.
  12. Effect of proposed changes on progress schedule and coordination.
  13. Other business relating to work.
  14. Access, temporary facilities and controls, housekeeping and progress cleaning.
  15. Safety.
  16. Status of proposal requests, pending changes, official Change Orders.
- E. Minutes:
  1. Following the meeting, the meeting minutes will be published in Procore by the Construction Manager for all parties.

### **3.03 COORDINATION MEETINGS**

- A. Coordination meetings will be held at the discretion of the construction manager.

### **3.04 REQUESTS FOR INTERPRETATION (RFIs)**

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, prepare and submit an RFI in Procore.
  1. RFIs shall originate with Trade Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in the Work.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
  1. Specification Section number and title and related paragraphs, as appropriate.
  2. Drawing number and detail references, as appropriate.
  3. Field dimensions and conditions, as appropriate.
  4. Trade Contractor's suggested solution(s). If Trade Contractor's solution(s) impact the Contract Time or the Contract Sum, Trade Contractor shall state impact in the RFI.
  5. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
- C. Design Professional's Action: Design Professional will review each RFI, determine action required, and return it. Allow seven (7) working days for Design Professional's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day. The following RFIs will be returned without action:
  1. Requests for approval of submittals.
  2. Requests for approval of substitutions.
  3. Requests for coordination information already indicated in the Contract Documents.

4. Requests for adjustments in the Contract Time or the Contract Sum.
  5. Requests for interpretation of Design Professional's actions on submittals.
  6. Incomplete RFIs or RFIs with numerous errors.
  7. Design Professional's action may include a request for additional information, in which case Design Professional's time for response will start again.
- D. Design Professional's action on RFIs that may result in a change to the Contract Time or the Contract Sum/Price.
1. If Trade Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Construction Manager in writing within ten (10) days of receipt of the RFI response.
- E. On receipt of Design Professional's response in Procore, review the response and notify Design Professional within seven (7) days if Trade Contractor disagrees with response.

### **3.05 NOTIFICATIONS FOR IOWA VETERANS CEMETERY**

- A. For work on Capitol Complex, notification requests must be provided to Construction Manager for work affecting the following:
1. Parking Access
  2. Excessive Noise
  3. Odors
  4. Disruption of Equipment
  5. Excessive Dust
  6. Fire Alarm
  7. HVAC System/Controls
  8. Plumbing/Restrooms
  9. Lighting
  10. Power/Electrical
- B. Information must be received on form following this section
1. Notice for tunnel repairs must be received by the Construction Manager for forward to Owner's Representative a minimum of ten (10) working days before the work is to occur (for tunnel shut downs).
  2. All other notices must be received by the Construction Manager for forward to Owner's Representative a minimum of three (3) working days prior to the work occurring.

### **3.06 UTILITY LOCATES/GROUND PENETRATIONS FOR IOWA VETERANS CEMETERY**

- A. Call Iowa One Call at 800-292-8989 to request a Joint Meeting Locate.
1. Requests must be least five (5) working days prior to ground penetration.
  2. A representative from the requesting group and DAS must be present for the Joint Meeting Locate.
- B. Complete the Capitol Complex Digging Application online at <https://das.iowa.gov/general-services/capitol-complex-events/digging-application-form>.
- C. Requesting groups will mark the area(s) intended to be penetrated with white spray paint or mark with white flags.
- D. One Call and/or Vannguard must place their locate flags appropriately in the areas.
- E. Contractor requesting the locate will be responsible for the locate charge.
- F. Ground penetration on Capitol Complex is not allowed until the steps listed above have been taken and locations have been approved.

### **3.07 UTILITY LOCATES/GROUND PENETRATIONS**

- A. Call Iowa One Call at 800-292-8989 to request a locate
1. Requests must be least five (5) working days prior to ground penetration.

### **3.08 FIRE WATCH FOR IOWA VETERANS CEMETERY**

- A. Fire watch is to be performed any time the fire alarm is disabled for more than four hours. This includes both when the system is in bypass and when any detectors are disabled by removal or covering.
- B. When fire alarm is disabled for four hours or less it will be at the discretion of Owner to determine if fire watch must be provided.
- C. Written notice must be received two (2) working days prior to scheduling of fire watch.

**END OF SECTION**

**CONSTRUCTION PROJECT REQUEST FOR NOTIFICATION AND/OR SERVICES  
FROM CAPITOL COMPLEX MAINTENANCE (CCM)**

Notifications must be provided to Owner’s Representative to forward to CCM Plant Operations Manager. Information must be received by Owner’s Representative in email format. Notice for tunnel repairs must be received 11 days before the work is to occur (for tunnel shut downs). All other notices must be received by the Owners Representative 4 working days prior to the work occurring.

**DAS Project Number:** \_\_\_\_\_

**Brief Description of Work:** \_\_\_\_\_

\_\_\_\_\_

**Building:** \_\_\_\_\_

**Affected Locations within Building:** \_\_\_\_\_

**Dates of Work:** \_\_\_\_\_

**Hours of Work:** \_\_\_\_\_

**Impact:**       Parking       Noise       Odors       Equipment       Other disruption  
 Dust       Fire Alarm       HVAC       Plumbing/Restroom       Lighting  
 Power/Electrical       Private/Public Utility Locate       \_\_\_\_\_

**Escort:**       Required       Not Required       Need assistance to determine

**Additional Information:** (or attached map/drawing of affected area/impact)  
\_\_\_\_\_

## SECTION 01 3100.01

### WEB BASED CONSTRUCTION MANAGEMENT

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. The Owner and Contractor shall utilize **Procore Technologies, Inc. Procore** system for electronic submittal of all data and documents (unless specified otherwise by the owner's representative) throughout the duration of the Contract. **Procore** is a web-based electronic media site that is hosted by **Procore Technologies, Inc.**, utilizing their **Procore** web solution. **Procore** will be made available to all contractors' project personnel, subcontractor personnel, suppliers, consultants and the Designer of Record. The joint use of this system is to facilitate; electronic exchange of information, automation of key processes, and overall management of the contract. **Procore** shall be the primary means of project information submission and management. When required by the Owners representative, paper documents will also be provided. In the event of discrepancy between the electronic version and paper documents, the paper documents will govern. **Procore** is a registered trademark of **Procore Technologies, Inc.**

##### 1.02 USER ACCESS LIMITATIONS

- A. The Owner's Representative/Construction Manager will control the Contractor's access to **Procore** by allowing access and assigning user profiles to accepted Contractor personnel. User profiles will define levels of access into the system, determine assigned function-based authorizations (determines what can be seen) and user privileges (determines what they can do). Sub-contractors and suppliers will be given access to **Procore** through the Contractor. Entry of information exchanged and transferred between the Contractor and its sub-contractors and suppliers on **Procore** shall be the responsibility of the Contractor.
1. Joint Ownership of Data: Data entered in a collaborative mode (entered with the intent to share as determined by permissions and workflows within the **Procore** system) by the Owner's Representative and the Contractor will be jointly owned.

##### 1.03 AUTOMATED SYSTEM NOTIFICATION AND AUDIT LOG TRACKING

- A. Review comments made (or lack thereof) by the Owner on Contractor submitted documentation shall not relieve the Contractor from compliance with requirements of the Contract Documents. The Contractor is responsible for managing, tracking, and documenting the Work to comply with the requirements of the Contract Documents. Owner's acceptance via automated system notifications or audit logs extends only to the face value of the submitted documentation and does not constitute validation of the Contractor's submitted information.

##### 1.04 SUBMITTALS

- A. See Section 01 3300 SUBMITTAL PROCEDURES:
- B. Preconstruction Submittals
1. List of Contractor's key **Procore** personnel. Include descriptions of key personnel's roles and responsibilities for this project. Contractor should also identify their organization's administrator on the list.

##### 1.05 COMPUTER REQUIREMENTS

- A. The Contractor shall use computer hardware and software that meets the requirements of the **Procore** system as recommended by **Procore Technologies, Inc.** to access and utilize

**Procure.** As recommendations are modified by **Procure**, the Contractor will upgrade their system(s) to meet the recommendations or better. Upgrading of the Contractor's computer systems will not be justification for a cost or time modification to the Contract. The contractor will ensure that connectivity to the **Procure** system (whether at the home office or job site) is accomplished through DSL, cable, T-1 or wireless communications systems. The minimum bandwidth requirement for using the system is 128kb/s. It is recommended a faster connection be used when uploading pictures and files into the system. **Procure** supports the current and prior two major versions of Chrome, Firefox, Internet Explorer, and Safari.

- B. The Contractor shall be responsible for the validity of their information placed in **Procure** and for the abilities of their personnel. Accepted users shall be knowledgeable in the use of computers, including Internet Browsers, email programs, cad drawing applications, and Adobe Portable Document Format (PDF) document distribution program. The Contractor shall utilize the existing forms in **Procure** to the maximum extent possible. If a form does not exist in **Procure** the Contractor must include a form of their own or provided by the Owner representative as an attachment to a submittal. Adobe PDF documents will be created through electronic conversion rather than optically scanned whenever possible. The Contractor is responsible for the training of their personnel in the use of **Procure** (outside what is provided by the owner) and the other programs indicated above as needed.
- C. User Access Administration: Provide a list of Contractor's key **Procure** personnel for the Owner's Representative acceptance. Contractor is responsible for adding and removing users from the system. The Owners Representative reserves the right to perform a security check on all potential users. The Contractor will be allowed to add additional personnel and sub-contractors to **Procure**.

#### 1.06 CONNECTIVITY PROBLEMS

- A. **Procure** is a web-based environment and therefore subject to the inherent speed and connectivity problems of the Internet. The Contractor is responsible for its own connectivity to the Internet. **Procure** response time is dependent on the Contractor's equipment, including processor speed, Internet access speed, etc. and current traffic on the Internet. The Owner will not be liable for any delays associated from the usage of **Procure** including, but not limited to: slow response time, down time periods, connectivity problems, or loss of information. The contractor will ensure that connectivity to the **Procure** system (whether at the home office or job site) is accomplished through DSL, cable, T-1 or wireless communications systems. The minimum bandwidth requirement for using the system is 128kb/s. It is recommended a faster connection be used when uploading pictures and files into the system. Under no circumstances shall the usage of the **Procure** be grounds for a time extension or cost adjustment to the contract.

#### 1.07 TRAINING

- A. The Construction Manager shall provide the necessary training to the Prime Contractor.

### PART 2 - PRODUCTS

#### 2.01 DESCRIPTION

- A. **Procure** project management application (no equal) Provided by Procure Technologies, Inc. [www.Procure.com](http://www.Procure.com)

## PART 3 - EXECUTION

### 3.01 PROCORE UTILIZATION

- A. **Procore** shall be utilized in connection with submittal preparation and information management required by Sections:
1. PROJECT MANAGEMENT AND COORDINATION
  2. CONSTRUCTION PROGRESS DOCUMENTATION
  3. SUBMITTAL PROCEDURES
  4. QUALITY REQUIREMENTS
  5. Other Division One sections.
  6. Requirements of this section are in addition to requirements of all other sections of the specifications.
- B. Design Document Submittals
1. All design drawings and specifications shall be submitted as cad .dwg files or PDF attachments to the **Procore** submittal work flow process and form.
- C. Shop Drawings
1. Shop drawing and design data documents shall be submitted as cad .dwg files or PDF attachments to the **Procore** submittal work flow process and form. Examples of shop drawings include, but are not limited to:
  2. Standard manufacturer installation drawings.
  3. Drawings prepared to illustrate portions of the work designed or developed by the Contractor.
  4. Steel fabrication, piece, and erection drawings.
- D. Product Data
1. Product catalog data and manufacturer's instructions shall be submitted as
  2. PDF attachments to the **Procore** submittal work flow process and form. Examples of product data include, but are not limited to:
  3. Manufacturer's printed literature.
  4. Preprinted product specification data and installation instructions.
- E. Samples
1. Sample submittals shall be physically submitted as specified in Section 01 3300 SUBMITTAL PROCEDURES. Contractor shall enter submittal data information into **Procore** with a copy of the submittal form(s) attached to the sample. Examples of samples include, but are not limited to:
  2. Product finishes and color selection samples.
  3. Product finishes and color verification samples.
  4. Finish/color boards.
  5. Physical samples of materials.
- F. Administrative Submittals
1. All correspondence and pre-construction submittals shall be submitted using **Procore**. Examples of administrative submittals include, but are not limited to:
  2. Digging permits and notices for excavation.
  3. List of product substitutions
  4. List of contact personnel.
  5. Notices for roadway interruption, work outside regular hours, and utility cut overs.
  6. Requests for Information (RFI).
  7. Construction progress Schedules and associated reports and updates.
    - a. Each schedule submittal specified in CONSTRUCTION PROGRESS DOCUMENTATION shall be submitted as a native backed-up file (.PRX or .STX) of the scheduling program being used. The schedule will also be posted as a PDF

- file in the format.
8. Plans for safety, demolition, environmental protection, and similar activities.
  9. Quality Control Plan(s), Testing Plan and Log, Quality Control Reports, Production Reports, Quality Control Specialist Reports, Preparatory Phase Checklist, Initial Phase Checklist, Field Test reports, Summary reports, Rework Items List, etc.
  10. Meeting minutes for quality control meetings, progress meetings, pre-installation meetings, etc.
  11. Any general correspondence submitted.
- G. Compliance Submittals
1. Test reports, certificates, and manufacture field report submittals shall be submitted on **Procore** as PDF attachments. Examples of compliance submittals include, but are not limited to:
    - a. Field test reports.
    - b. Quality Control certifications.
    - c. Manufacturer's documentation and certifications for quality of products and materials provided.
- H. Record and Closeout Submittals
1. Operation and maintenance data and closeout submittals shall be submitted on **Procore** as PDF documents during the approval and review stage as specified, with actual set of documents submitted for final. Examples of record submittals include, but are not limited to:
    - a. Operation and Maintenance Manuals: Final documents shall be submitted as specified.
    - b. As-built Drawings: Final documents shall be submitted as specified.
    - c. Extra Materials, Spare Stock, etc.: Submittal forms shall indicate when actual materials are submitted.
- I. Financial Submittals
1. Schedule of Value, Pay Applications and Change Request Proposals shall be submitted on **Procore**. Supporting material for Pay Applications and Change Requests shall be submitted on **Procore** as PDF attachments. Examples of compliance submittals include, but are not limited to:
    - a. Contractors Schedule of Values
    - b. Contractors Monthly Progress Payment Requests
    - c. Contract Change proposals requested by the project owner

**END OF SECTION**

## SECTION 01 3200

### CONSTRUCTION PROGRESS DOCUMENTATION

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Construction Progress Schedule
- B. Construction Manager's Construction Schedule
- C. Submittal Schedule
- D. Daily Construction Reports
- E. Progress Photographs

#### PART 2 - PRODUCTS – NOT USED

#### PART 3 - EXECUTION

##### 3.01 CONSTRUCTION MANAGER'S MASTER CONSTRUCTION SCHEDULE

- A. Upon award of package, Contractor agrees to accept and meet or improve upon the schedule proposed in section **00 3113 PRELIMINARY SCHEDULE** with intermediate handoffs. Each package contractor will be required to participate in schedule coordination meetings with the Construction Manager.
- B. If the bid package contractor does not meet the handoff milestones in the master construction schedule, the bid package contractor shall take measures to increase work forces, increase work hours, initiate revisions to means and methods of construction, and/or other similar measures as required to make up lost time and complete the work in accordance with the construction schedule and remain consistent with project progress and overall construction schedule. Such measures shall be at no additional cost to the Owner. The Construction Manager shall have sole discretion on decisions to accelerate work.
- C. Updating the master construction schedule – Contractors are required to attend and participate in schedule coordination update meetings with the Construction Manager. This will be an opportunity for contractors to further define their scheduled scope of work in conjunction with other trades on site.
- D. Acceptance of revised master construction schedule – After an updated master construction schedule has been issued via Procore, Contractors will have 48 hours to dispute the new schedule. All contractors will be held to the last fully accepted master construction schedule.

##### 3.02 CONSTRUCTION PROGRESS SCHEDULE

- A. Submit preliminary outline to the Construction Manager no later than 48 hours prior to the pre-construction meeting for coordination with Owner's requirements.
- B. Submit revised progress schedule with each application for payment.
- C. Schedules will be electronically submitted through Procore.
- D. Distribute copies of reviewed schedules to project site file, subcontractors, suppliers, and other concerned parties.
- E. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.
- F. Submit computer generated horizontal bar chart with separate line for each major portion of work or operation, identifying the first day of each week.
- G. Show complete sequence of construction activity, identifying work of separate stages and other

logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.

- H. Indicate estimated percentage of completion for each item of work at each submission.
- I. Participate in joint review and evaluation of schedule with Construction Manager.
- J. Revisions to schedules:
  - 1. Indicate progress of each activity to date of submittal and projected completion date of each activity.
  - 2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
  - 3. Prepare narrative report to define problem areas, anticipate delays, and impact on schedule. Report corrective action taken, or proposed, and its effect including effect of changes on schedules of separate contractors.

### 3.03 **SUBMITTAL SCHEDULE**

- A. Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrications, and delivery when establishing dates.
  - 1. Coordinate submittal schedule with list of subcontractors, the schedule of values, and construction schedule.
  - 2. Submit concurrently with first complete submittal of contractor's construction schedule.

### 3.04 **DAILY CONSTRUCTION REPORTS**

- A. Daily Construction Reports: Submitted at weekly intervals.
  - 1. Daily Construction Reports will be submitted to Construction Manager.
- B. Prepare a daily construction report recording the following information concerning events at project site:
  - 1. Count of personnel at Project site
  - 2. Equipment at Project site
  - 3. Material Deliveries
  - 4. High and low temperatures and general weather conditions, including presence of rain or snow
  - 5. Accidents
  - 6. Meetings and significant decisions
  - 7. Unusual events
  - 8. Stoppages, delays, shortages, and losses
  - 9. Meter readings and similar recordings
  - 10. Emergency procedures
  - 11. Orders and requests of authorities having jurisdiction
  - 12. Change orders received and implemented
  - 13. Services connected and disconnected
  - 14. Equipment or system tests and startups
  - 15. Partial completions and occupancies
  - 16. Substantial completions authorized

### 3.05 **PROGRESS PHOTOGRAPHS**

- A. Progress photographs will be electronically submitted through Procore.
- B. Preconstruction Photographs: Before starting construction, take photographs of project site and surrounding properties, including existing items to remain during construction, from different

vantage points, as directed by Construction manager.

1. Take additional photographs as required to record existing damage to site, structure, equipment, or finishes.
- C. Periodic Construction Photographs: Take photographs at regular intervals. Select vantage points to show status of construction and progress since last photographs were taken.
- D. Field Completion Construction Photographs: Take photographs after date of Substantial Completion for submission as project record documents. Construction manager will inform of desired vantage points.

**END OF SECTION**

## SECTION 01 3300

### SUBMITTAL PROCEDURES

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Submittals for Review
- B. Submittals for Information
- C. Submittal Procedures
- D. Samples

#### PART 2 - PRODUCTS – NOT USED

#### PART 3 - EXECUTION

##### 3.01 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 Construction Manager to forward 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 document purposes.

##### 3.02 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 Construction Manager, Architect, and Owner's knowledge. No action will be taken.

##### 3.03 SUBMITTAL PROCEDURES

- A. Submittals will be electronically submitted through Procore. Contractor will be invited to join web based program after issue of Notice of Intent to award.
- B. Shop Drawing Procedures:
  - 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.
  - 2. Do not reproduce the Contract Documents to create shop drawings.

3. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.
- C. Transmit each submittal with a copy of approved submittal form.
- D. Sequentially number the submittal form. Revise submittals with original number and a sequential numeric suffix.
- E. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- F. 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.
- G. Schedule submittals to expedite the project and coordinate submission of related items.
- H. For each submittal review, allow 15 days excluding delivery time to and from the contractor.
- I. Identify variations from the Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
- 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.

#### 3.04 **SAMPLES**

- A. Submit to Construction Manager to forward to Architect/Engineer for review for limited purpose for checking conformance with information given and design concept expressed in the Contract Documents.
- B. Samples for selection as specified in product sections:
  1. Submit to Construction Manager to forward to Architect/Engineer for aesthetic, color, or finish selections.
  2. Submit samples of finishes from full range of manufacturer's standard colors, textures, and patterns to Construction Manager to forward to Architect/Engineer for selection.
- C. Submit samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- D. Include identification on each sample, with full project information.
- E. Submit number of samples specified in individual specification sections.
- F. Photograph of submitted samples, along with transmittal sheet, shall be uploaded as a submittal in Procore.

**END OF SECTION**

## SECTION 01 4000

### QUALITY REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. References
- B. Quality assurance and control of installation
- C. Tolerances
- D. Defect Assessment
- E. Inspection and testing laboratory services
- F. Manufacturer's field services and reports

##### 1.02 REFERENCES

- A. Conform to reference standard in effect at date of contract.
- B. When required by contract documents, obtain copies of standards.
- C. Should specified reference standards conflict with contract documents request clarification from engineer before proceeding.
- D. The contractual relationship of the parties to the contract shall not 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 QUALITY ASSURANCE/CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce work of specified quality.
- B. Comply fully with manufacturer's instructions, including each step in sequence.
- C. Should manufacturer's instructions conflict with contract documents, request clarification from the engineer prior to proceeding.
- D. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stress, vibration, physical distortion, or disfiguration.

##### 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 work not conforming to specified requirements.

- B. If, in the option of the Owner, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or recommend adjusted payment.

### **3.04 INSPECTION AND TESTING**

- A. Owner shall include and pay for all required special inspections and testing required by IBC Section 1705, if applicable. This does not include inspections and testing required by other specification sections in this Project Manual. Copies of all testing and inspection reports shall be submitted to the Construction Manager and Design Professional by the testing and inspection agency.
- B. Testing Agency Duties:
  - 1. Provide qualified personnel at site. Cooperate with Architect, Construction Manager, and contractor in performance of services.
  - 2. Perform specified sampling and testing of products in accordance with specified standards.
  - 3. Ascertain compliance of materials and mixes with requirements of contract documents.
  - 4. Immediately notify the Construction Manager and contractor of observed irregularities or non-conformance of work or products.
  - 5. Perform additional testing and inspections required by the Owner
- C. Limits on Testing Agency/Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirement of contract documents.
  - 2. Agency may not approve or accept any portion of the work.
  - 3. Agency may not assume any duties of the contractor.
  - 4. Agency has no authority to stop the work.
- D. Contractor responsibilities:
  - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
  - 2. Cooperate with laboratory personnel, and provide access to the work and to manufacturer's facilities.
  - 3. Provide incidental labor and facilities:
    - a. To provide access to work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of products to be tested/inspected.
    - c. To facilitate test/inspections.
    - d. To provide storage and curing of test samples.
  - 4. Notify Construction Manager and laboratory 24 hours prior to expected time for operations requiring testing/inspection.
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same testing agency on instruction by Architect/Construction Manager.
- F. Re-testing required because of non-conformance to specified requirements shall be paid for by the Contractor.

### **3.05 MANUFACTURER'S FIELD SERVICES AND REPORTS**

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start up of equipment, test, adjust and balance of equipment as applicable and to initiate instructions when necessary.
- B. Individuals are to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to the manufacturers' written instructions.
- C. Submit report in duplicate within 30 days of observation to Construction Manager for review.

**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. Telephone Service
- D. Removal of Utilities, Facilities, and Controls
- E. Temporary Facilities
- F. Equipment
- G. Vehicular Access and Parking
- H. Traffic Regulation
- I. Barriers
- J. Enclosures and Fencing
- K. Waste Removal

##### 1.02 TEMPORARY UTILITIES

- A. Owner will provide the following:
  - 1. Electrical Power, consisting of connection to existing facilities.
  - 2. Water Supply, consisting of connection to existing facilities.
- B. The Contractor shall pay for installation, maintenance, and removal of temporary utilities. Temporary utilities shall not disrupt the Facility's need for continuous service.

##### 1.03 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

##### 1.04 TELEPHONE SERVICE

- A. Provide, maintain, and pay for telephone service to field or use a cellular telephone.

##### 1.05 REMOVAL OF UTILITIES, FACILITIES AND CONTROLS

- A. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

#### PART 2 - PRODUCTS

##### 2.01 TEMPORARY FACILITIES

- A. Field Offices: Coordinate with Construction Manager and Owner if applicable.

##### 2.02 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated, with class and extinguishing agent as required by locations and classes of fire exposures.

#### PART 3 - EXECUTION

##### 3.01 VEHICULAR ACCESS AND PARKING

- A. Use designated existing on-site roads for construction traffic.
- B. Parking is as directed by Owner.
- C. When site space is not adequate, provide additional off-site parking.
- D. Use of designated existing on-site streets and driveways used for construction traffic is permitted. Track vehicles not allowed on paved areas.
- E. Use of designated areas of existing parking facilities used by construction personnel as permitted.
- F. Do not allow heavy vehicles or construction equipment in parking areas.
- G. Provide and maintain access to fire hydrants, free of obstructions.
- H. Provide means of removing mud from vehicle wheels before entering streets.

### **3.02 TRAFFIC REGULATION**

- A. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.
- B. Flares and lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.
- C. Haul Routes:
  1. Consult with authority having jurisdiction, establish public thoroughfares to be used for haul routes and site access.
- D. Removal:
  1. Remove equipment and devices when no longer required.
  2. Repair damage caused by demolition.

### **3.03 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 during construction operations.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

### **3.04 ENCLOSURES AND FENCING**

- A. Provide temporary enclosure and fences as necessary to protect the public and secure the site.
- B. Provide six (6) foot tall chain link fence with opaque netting securely attached around construction site; equip with vehicular and pedestrian gates with locks.
- C. Provide security and facilities to protect work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

### **3.05 WASTE REMOVAL**

- A. Except for items or materials to be salvaged, recycled or otherwise reused, remove waste materials from project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
  1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Waste Disposal Facilities: Provide waste collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction.

## **END OF SECTION**

## SECTION 01 6000

### PRODUCT REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. General product requirements
- B. Product options
- C. Maintenance materials
- D. Transportation and handling
- E. Storage and protections

#### PART 2 - PRODUCTS

##### 2.01 GENERAL PRODUCT REQUIREMENTS

- A. Provide new products unless specifically required or permitted by the contract documents.
- B. Do not use products having any of the following characteristics:
  - 1. Made using or containing CFC's or HCFC's
  - 2. Made of wood from newly cut old growth timber.
- C. Where all other criteria are met, contractor shall give preference to products that:
  - 1. If used on interior, have lower emissions
  - 2. If wet-applied, have lower VOC content
  - 3. Are extracted, harvested, and/or manufactured closer to the location of the project
  - 4. Have longer documented life span under normal used
  - 5. Result in less construction waste
  - 6. Are made of vegetable materials that are rapidly renewable

##### 2.02 PRODUCT OPTIONS

- 1. Products specified by reference standards or by description only: Use of any product meeting those standards or description.
- 2. Products specified by naming one or more manufacturers, with or without a provision for substitutions: Use a product of one of the manufacturers named and meeting specifications or submit a request for substitution for any manufacturer not named by the date specified in this project manual. Substitution requests shall be emailed to the Issuing Officer at the email address provided in Instructions to Bidders Section 1.04.

##### 2.03 MAINTENANCE MATERIALS

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

#### PART 3 - EXECUTION

##### 3.01 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **3.02 STORAGE AND PROTECTIONS**

- 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 the product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturers' warranty conditions, if any.
- H. Cover product subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- 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 7300

### EXECUTION

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures
- B. Alteration project procedures
- C. Cutting and patching
- D. Cleaning and protection
- E. Adjusting

#### PART 2 - PRODUCTS – NOT USED

#### PART 3 - EXECUTION

##### 3.01 EXAMINATION, PREPARATION, AND GENERAL INSTALLATION PROCEDURES

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misproduction.
- 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; include 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.
- G. Clean substrate surfaces prior to applying next material or substance.
- H. Seal cracks or openings of substrate prior to applying next material or substance.
- I. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.
- J. 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.
- K. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- L. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- M. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- N. Make neat transitions between different surfaces, maintaining texture and appearance.

##### 3.02 ALTERATION PROJECT PROCEDURES

- A. Materials: As specified in product sections match existing products and work for patching and extending work.
- B. Employ skilled and experienced installer to perform alteration work.
- C. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished work.
- E. Remove, cut and patch work in a manner to minimize damage and to provide a means of restoring products and finished to original condition.

- F. Remove debris and abandoned items from area and from concealed spaces.
- G. Refinish visible existing surfaces to remain in renovated rooms and spaces to specified condition for each material with a neat transition to adjacent finishes.
- H. Where new work abuts or aligns with existing, perform a smooth and even transition. Patched work to match existing adjacent work in texture and appearance.
- I. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line of division and make recommendation to the Construction Manager. Prior to cutting get the Owner's approval.
- J. Where change of plane of ¼ inch or more occurs, submit recommendation for providing smooth transition to the Construction Manager for review.

### **3.03 CUTTING AND PATCHING**

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements which affect:
  1. Structural integrity of element.
  2. Integrity of weather-exposed or moisture-resistant elements.
  3. Efficiency, maintenance, or safety of element.
  4. Visual qualities of sight exposed elements.
  5. Work of owner or separate contractor.
- C. Execute cutting, fitting, and patching to complete work, and to:
  1. Fit the several parts together, to integrate with other work.
  2. Uncover work to install or correct ill-timed work.
  3. Remove and replace defective and non-conforming work.
  4. Remove samples of installed work for testing.
  5. Provide openings in elements of work for penetrations of mechanical and electrical work.
- D. Execute work by methods to avoid damage to other work and which will provide proper surfaces to receive patching and finishing.
- E. Cut rigid materials using masonry saw or core drill.
- F. Cut masonry and concrete materials using masonry saw or core drill.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work tight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
- I. Maintain integrity of wall, ceiling or floor construction; completely seal voids.
- J. Refinish surfaces to match adjacent finishes. Refinish to nearest intersection for continuous surfaces. Refinish entire unit for continuous surfaces for an assembly.
- K. Identify hazardous substances or conditions exposed during the work to the engineer for decision or remedy.

### **3.04 CLEANING AND PROTECTION**

- A. Progress cleaning
  1. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
  2. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.
- B. Protection of installed work
  1. Protect installed work from damage by construction operations.
  2. Provide special protection where specified in individual specification sections.
  3. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
  4. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.
  5. Prohibit traffic from landscaped areas.

**3.05 ADJUSTING**

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

**END OF SECTION**

## SECTION 01 7700

### CLOSEOUT PROCEDURES

#### PART 1 - GENERAL

##### 1.01 SECTION INCLUDES

- A. Inspections
- B. Substantial Completion
- C. Project Record Documents
- D. Warranties
- E. Operations and Maintenance Manuals
- F. Operations and Maintenance Data for Materials and Finishes
- G. Operations and Maintenance Data for Equipment and Systems
- H. Training
- I. Final Completion
- J. Maintenance

#### PART 2 - PRODUCTS – NOT USED

#### PART 3 - EXECUTION

##### 3.01 INSPECTIONS

- A. Ensure all state inspections have been completed by the authority having jurisdiction.
- B. Upload documentation of all test/inspections to Procore.
- C. Submit a written request for inspection of Substantial Completion. On receipt of request, The Design Professional will either proceed with inspection or notify contractor of unfulfilled requirements. The Design Professional will prepare the Certificate of Substantial Completion after inspection or will notify contractor of items, either on contractor's list or additional items identified by architect that must be completed or corrected before certificate will be issued.
  - 1. Re-inspection: Request re inspection when the work identified in previous inspections as incomplete is completed or corrected.
  - 2. Results of completed inspection will form the basis of requirements for Final Completion.

##### 3.02 SUBSTANTIAL COMPLETION

- A. A substantial completion checklist is attached for reference following this specification section.
- B. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to the Construction Manager through upload to Procore.
- C. Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Submit written certification that contract documents have been reviewed, work has been inspected, and that work is completed in accordance with contract documents and ready for review
  - 2. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the work has not been completed.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  - 4. Make final changeover of permanent locks and deliver key to the owner. Advise owner's personnel of changeover in security provisions.
  - 5. Complete startup testing of systems.
  - 6. Submit test/adjust, balance records.
  - 7. Terminate and remove temporary facilities from project site, along with mockups, construction tools, and similar elements.

8. Advise owner of changeover in heat and other utilities.
9. Submit changeover information related to owner's occupancy, use, operation, and maintenance.
10. Complete final cleaning requirements, including touch up painting.
11. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

### **3.03 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
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress, not less than weekly.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  1. Manufacturer's name and product model and number.
  2. Product substitutions or alterations utilized.
  3. Changes made by Addenda and modifications.
- F. Record Drawings:
  1. Measured depths of foundations in relation to finish first floor datum.
  2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
  4. Field changes of dimension and detail.
  5. Details not on original contract drawings.
- G. Record Drawings shall be uploaded to Procore in pdf format.

### **3.04 WARRANTIES**

- A. Submit written warranties for designated portions of the work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Submit properly executed warranties in Procore prior to Final Completion.
- C. Verify that documents are in proper form, contain full information, and are notarized.
- D. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
- E. Include warranties in operation and maintenance manuals.
- F. Items of work delayed beyond date of Substantial Completion, provide updated submittal after acceptance by Owner, listing date of acceptance as start of warranty period

### **3.05 OPERATIONS AND MAINTENANCE MANUALS**

- A. Format: Submit operations and maintenance manuals in the following format:
  1. Portable Document Format (PDF) electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Owner and upload to Procore.
    - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.

2. Assemble with data arranged in the same sequence as, and identified by the specification sections. Where systems involve more than one specification section, provide separate index for each system.
  3. Include project directory listing title and address of project, names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
  4. Include Table of Contents listing every item separated by index and specification section.
- B. Source Data: For each product or system, list names, addresses, and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
  - C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
  - D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use project record documents as maintenance drawings.
  - E. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

### **3.06 OPERATIONS AND MAINTENANCE DATA FOR MATERIALS AND FINISHES**

- A. For each product, applied material, and finish:
  1. Product data, with catalog number, size, composition, and color and texture designations.
  2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specified products.

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

- A. For each item of equipment and each system:
  1. Description of unit or system, and component parts
  2. Identify function, normal operating characteristics, and limiting conditions
  3. Include performance curves, with engineering data and tests
  4. Complete nomenclature and model number of replacement parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specified products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Include color coded wiring diagrams as installed.
- E. Operating procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- F. Maintenance requirements: Include routine procedure and guide for preventative maintenance and troubleshooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- G. Provide servicing and lubrication schedule and list of lubricants required.
- H. Include manufacturer's printed operation and maintenance instructions.
- I. Include sequence of operation by controls manufacturer.

- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide contractor's coordination drawings, with color coded piping diagrams as installed.
- M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- O. Include test and balancing reports.
- P. Additional requirements: As specified in individual specification sections.

### **3.08 TRAINING**

- A. Demonstrate operations of systems, subsystems, and equipment.
- B. Train in operation and maintenance of systems, subsystems, and equipment
- C. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- D. Submit written agenda to Construction Manager for approval prior to scheduling training.
- E. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

### **3.09 FINAL COMPLETION**

- A. A final completion checklist is attached for reference following this specification section.
- B. Before requesting final inspection for determining date of Final Completion, complete the following:
  - 1. Complete punch list items.
  - 2. Prepare and submit project record documents, operation and maintenance manuals, damage or settlement surveys, and similar final record information.
  - 3. Deliver tools, spare parts, extra materials, and similar items to location designated by owner. Label with manufacturer's name and model number where applicable.
  - 4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
  - 5. All trailers, construction signs, unused, broken or demolition materials have been removed from the site and the premises returned to the original condition in the opinion of the Owner and Design Professional.
  - 6. Submit a final Application for Payment (retainage).
- C. Upon receipt of final payment complete final completion certificate in Procore.

**END OF SECTION**

# Substantial Completion Project Checklist

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

DAS Project Number: \_\_\_\_\_

Project Title: \_\_\_\_\_

Location: \_\_\_\_\_

Contractor: \_\_\_\_\_

In order to process the 99% payment (100% pay app less closeout and retainage) on a Capital Project, the Department of Administrative Services needs the following information. Please complete this form and obtain the necessary documents.

**Have all state inspections been completed and documentation uploaded to Procore?**  
*(Including but not limited to the following inspections)*

**Boiler Inspection**  Yes  No  N/A

**Water Heater Inspection**  Yes  No  N/A

**Energy Code Inspection**  Yes  No  N/A

**Building Code Inspection**  Yes  No  N/A

**Electrical Inspection**  Yes  No  N/A

**Elevator Inspection**  Yes  No  N/A

**Other:** \_\_\_\_\_  Yes  No  N/A

Occupancy Permit if applicable

Test and Balance has been performed

Certificate of Substantial Completion in Procore (Consensus Docs 814)

**Are there any disputes with the above mentioned vendor which need resolution?**

Yes (provide description below)  No

\_\_\_\_\_  
\_\_\_\_\_

**Can payment (less closeout and retainage) be released?**  Yes  No

## Final Completion Project Checklist

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

DAS Project Number: \_\_\_\_\_

Project Title: \_\_\_\_\_

Location: \_\_\_\_\_

Contractor: \_\_\_\_\_

In order to process the 100% payment and Retainage payment on a Capital Project, the Department of Administrative Services needs the following information. Please complete this form and obtain the necessary documents.

Have all Warranties been received?  Yes  No

Have the Operations and Maintenance Manuals been received?  Yes  No

Who is in possession of the O & M Manuals? \_\_\_\_\_

Has all training been completed?  Yes  No

Have all as-built drawings been scanned and uploaded into Procore?  Yes  No

Have electronic drawing/specification files been transferred to DAS?  Yes  No

Have all Test & Balance reports been received?  Yes  No

Have all punchlist items been corrected?  Yes  No

**573 Notification** (*To be obtained from the general contractor*): Copy of general contractor's notification of application for retainage to all subcontractors and suppliers. General contractor must follow IAC 26 section 23.13.2.

**AIA Form G706 – Contractor's Affidavit of Payment of Debts and Claims**

**AIA Form G706A – Contractor's Affidavit of Release of Liens**

**AIA Form G707 – Consent of Surety Company to Final Payment**

**Certificate of Final Completion in Procore (Consensus Docs 815)**

Are there any disputes with the above mentioned vendor which need resolution?

Yes (provide description below)  No

\_\_\_\_\_  
\_\_\_\_\_

Can 100% payment and retainage payment be released?  Yes  No

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**SECTION 00 0101  
PROJECT TITLE PAGE**

**TECHNICAL SPECIFICATIONS  
FOR  
IDAS - IVC COLUMBARIUM AND IRRIGATION**

**IDAS - IVC Columbarium and  
Irrigation Package 1  
IDAS Project # 9517.00  
FAI # IA 23-04  
S-H Project # 2250022390**

**Issued for Construction  
06-12-2026**

**Project Title Page  
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  - B. 00 0105- Certifications Page
  - C. 00 0110- Table of Contents

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  - A. 03 3000- Cast-in-Place Concrete
  - B. 03 4550 - Precast Concrete Columbarium Units
- 2.2 DIVISION 04 -- MASONRY
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**END OF SECTION**

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**SECTION 03 3000  
CAST-IN-PLACE CONCRETE**

**PART 1 GENERAL**

1.1 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
  - 1. Footings and foundations.
  - 2. Foundation walls.

1.2 REFERENCE STANDARDS

- A. AASHTO M 182 - Standard Specification for Burlap Cloth Made from Jute or Kenaf and Cotton Mats; 2005.
- B. ACI 117 - Specification for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).
- C. ACI 301 - Specifications for Concrete Construction; 2020.
- D. ACI 305R - Guide to Hot Weather Concreting; 2020.
- E. ACI 306R - Guide to Cold Weather Concreting; 2016.
- F. ACI 308R - Guide to External Curing of Concrete; 2016.
- G. ACI 347R - Guide to Formwork for Concrete; 2014 (Reapproved 2021).
- H. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2024.
- I. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field; 2025a.
- J. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2024a.
- K. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2024.
- L. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2024.
- M. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2024.
- N. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
- O. ASTM C150/C150M - Standard Specification for Portland Cement; 2024.
- P. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2020.
- Q. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete; 2017.
- R. ASTM C219 - Standard Terminology Relating to Hydraulic Cement; 2014.
- S. ASTM C231/C231M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method; 2014.

- T. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).
- U. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2024.
- V. ASTM C618 - Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2025a.
- W. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2020a.
- X. ASTM C1017/C1017M - Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete; 2013.
- Y. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.
- Z. ASTM C1064/C1064M - Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete; 2012.
- AA. ASTM E1155/E1155M - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers; 2023.
- BB. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars; 2018, with Amendment (2020).

### 1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

### 1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For each of the following, signed by manufacturers:
  - 1. Cementitious materials.
  - 2. Admixtures.
  - 3. Form materials and form-release agents.
  - 4. Steel reinforcement and accessories.
  - 5. Bonding agents.
  - 6. Adhesives.

- 7. Repair materials.
- B. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
  - 1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- C. Field quality-control reports.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.
  - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D1.4M, "Structural Welding Code - Reinforcing Steel."
- D. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
  - 1. ACI 301, "Specifications for Structural Concrete, Sections 1 through 5.
  - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement.

### **PART 2 PRODUCTS**

#### 2.1 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
  - 1. Plywood, metal, or other approved panel materials.
- B. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.
- D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
  - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

- F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
  - 1. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
  - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
  - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

## 2.2 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A615/A615M, Grade 60 (Grade 420), deformed.

## 2.3 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
  - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
  - 2. Supporting reinforcement on clay brick supports is not acceptable.

## 2.4 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
  - 1. Portland Cement: ASTM C150/C150M, Type I, gray. Supplement with the following:
    - a. Fly Ash: ASTM C618, Class F or Class C.
- B. Normal-Weight Aggregates: ASTM C33/C33M, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
  - 1. Maximum Coarse-Aggregate Size: 1 inch (25 mm) nominal.
  - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement. For slabs-on-grade and concrete exposed to view use fine aggregate with a proven history of not being susceptible to popouts, imported sand if necessary.
- C. Water: ASTM C94/C94M and potable.

## 2.5 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C260/C260M.
- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C494/C494M, Type A.
2. Retarding Admixture: ASTM C494/C494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494/C494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C494/C494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C1017/C1017M, Type II.

## 2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
- C. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.

## 2.7 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: Flexible, closed-cell polyethylene with tear off strip for sealant installation.
- B. Bonding Agent: ASTM C1059/C1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C881/C881M, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
  1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

## 2.8 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch (3.2 mm) and that can be feathered at edges to match adjacent floor elevations.
  1. Cement Binder: ASTM C150/C150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
  2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
  3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by underlayment manufacturer.
  4. Compressive Strength: Not less than 4100 psi (29 MPa) at 28 days when tested according to ASTM C109/C109M.

## 2.9 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
  1. Fly Ash: 25 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
  1. Use water-reducing or high-range water-reducing admixture in concrete, as required, for placement and workability.
  2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

## 2.10 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings and Foundation Walls: Proportion normal-weight concrete mixture as follows:
  1. Minimum Compressive Strength: 4000 psi (27.6 MPa) at 28 days.
  2. Maximum Water-Cementitious Materials Ratio: 0.45.
  3. Slump Limit: Concrete mix shall be proportioned to achieve a maximum slump of 9" for concrete containing high range water reducing admixture, 6" for concrete containing a mid-range water reducing admixture, or 4" for other concrete. All mixes shall have a water slump of 2" to 3".
  4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1 inch (25 mm) nominal maximum aggregate size.

## 2.11 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

## 2.12 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94/C94M and ASTM C1116/C1116M, and furnish batch ticket information.
  1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

## PART 3 EXECUTION

### 3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
  - 1. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.
  - 2. Class B, 1/4 inch (6 mm) for rough-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
  - 1. Install keyways, reglets, recesses, and the like, for easy removal.
  - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

### 3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.

1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
  2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

### 3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
1. Weld reinforcing bars according to AWS D1.4/D1.4M, where indicated.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

### 3.5 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
  2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
  3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inch (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.

2. Maintain reinforcement in position on chairs during concrete placement.
  3. Screed slab surfaces with a straightedge and strike off to correct elevations.
  4. Slope surfaces uniformly to drains where required.
  5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- E. Cold-Weather Placement: Comply with ACI 306R and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
  2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- F. Hot-Weather Placement: Comply with ACI 301 and ACI 305R and as follows:
1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

### 3.6 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, or to be covered with a coating or covering material applied directly to concrete.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### 3.7 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

### 3.8 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306R for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308R, by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12 inch (300 mm) lap over adjacent absorptive covers.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inch (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

### 3.9 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
  - 1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.

### 3.10 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect/Engineer. Remove and replace concrete that cannot be repaired and patched to Architect/Engineer's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
  - 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete. Limit cut depth to 3/4 inch (19 mm). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
  - 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
  - 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect/Engineer.
  - 4. Repaired surfaces that do not maintain a uniform look will require a grout or epoxy based finish to provide a uniform look as determined by the Architect/Engineer.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
  - 1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
  - 2. After concrete has cured at least 14 days, correct high areas by grinding.
  - 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
  - 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
  - 5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

6. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4 inch (19 mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
  7. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect/Engineer's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect/Engineer's approval.

### 3.11 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Inspections:
1. Steel reinforcement placement.
  2. Steel reinforcement welding.
  3. Verification of use of required design mixture.
  4. Concrete placement, including conveying and depositing.
  5. Curing procedures and maintenance of curing temperature.
  6. Verification of concrete strength before removal of shores and forms from beams and slabs.
- C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C172/C172M shall be performed according to the following requirements:
1. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.
    - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  2. Slump: ASTM C143/C143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  3. Air Content: ASTM C231/C231M, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  4. Concrete Temperature: ASTM C1064/C1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C31/C31M.
    - a. Cast and laboratory cure two sets of two standard 6 inch by 12 inch cylinder specimens for each composite sample or two sets of three standard 4 inch by 8 inch cylinder specimens for each composite sample.
  6. Compressive-Strength Tests: ASTM C39/C39M; test one set of laboratory-cured specimens at 7 days and one set of specimens at 28 days.
    - a. A compressive-strength test shall be the average compressive strength from a set of two specimens for 6 in by 12 inch cylinders or three specimens for 4 inch by 8 inch cylinders obtained from same composite sample and tested at age indicated.
  7. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
  8. Test results shall be reported in writing to Architect/Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
  9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect/Engineer but will not be used as sole basis for approval or rejection of concrete.
  10. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect/Engineer. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42 (C42M) or by other methods as directed by Architect/Engineer.
  11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
  12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- D. Measure floor and slab flatness and levelness according to ASTM E1155/E1155M within 72 hours of finishing.

**END OF SECTION**

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**SECTION 03 4550  
PRECAST CONCRETE COLUMBARIUM UNITS**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Pre-cast Concrete Columbaria Units.

1.2 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Prior to commencement of work, Contractor shall submit documentation regarding the experience of their precast concrete supplier in the design and manufacture of Precast Concrete Columbaria structures and custom columbarium units. Design, fabrication, delivery, and erection shall conform to ACI 318-05. Perform all welding in accordance with AWS D1.1.
- B. Precast concrete manufacturer's qualified Registered Professional Structural Engineer to certify that precast reinforced concrete conforms to specified requirements and is capable of structurally supporting imposed cast stone cap loads.
- C. Codes and regulations of the Federal, State, and County authorities shall apply.
- D. Fabricate to dimensions shown or approved. Replace or correct Columbarium Units which do not comply with the individual dimensions and tolerances.
- E. Before starting production of Precast Concrete Columbarium Units, furnish at the site, two complete Precast Concrete Columbarium Units to demonstrate quality of construction. Commence production of Columbarium Units only after written approval.
- F. Design Criteria:
1. The Columbarium Units shall be of the type, size and style as shown on the drawings and match the existing columbarias on site.
  2. Type: Precast concrete, reinforced.
  3. Columbarium top shall be capable of structurally supporting imposed service live load of no less than 50 psf, plus additional loads based on cast stone capstone thickness, dimensions, and heights, including material composition and element sectional properties, mortar and grout, reinforcement and load bearing locations. Verify and coordinate with cast stone manufacturer prior to manufacturing columbarium niche units.
  4. The Contractor shall submit in accordance with Section 01 3000 Administrative Requirements, for review and approval, design documentation showing structural design of the complete Columbarium. This documentation shall include dimensions, methods of construction, and calculations. All design calculations and drawings shall be signed and sealed by qualified Professional Structural Engineer, registered in the State of Iowa.
- G. Functional Load Tests: If required by the Owner or Architect, a functional load test will be made at the Contractor's expense to insure that the alternate columbarium proposed by the Contractor, as furnished, will be capable of supporting loads stated in Article 1.3.F.2. The functional test will consist of loading conditions:

1. Unconfined Loading: The columbarium will be placed on a flat surface with no support against the sides. The entire top of the columbarium will be subjected to a simulated uniform load of live load of 50 psf and required dead load simulating cast stone capstone, mortar, reinforcement, and grout. The simulated load shall bear at manufacturer recommended bearing location (quantity and location of load points determined by columbarium niche unit manufacturer). The load will be maintained for no less than 72 hours. At the end of the loading period, the maximum deflection of the Columbarium top elements shall be no more than 1/8". Upon removal of the load from the lid the residual deflection shall be no more than 1/16" and concrete elements shall be free of all structural distress.

### 1.3 MANUFACTURER / INSTALLER QUALIFICATIONS

- A. Precast concrete columbarium units shall be product of manufacturer/ installer who has a minimum of 5 years experience in fabrication and erection of the precast concrete columbarium units similar in material design and extent to that indicated on the drawings and specified herein.
- B. Supply and Installation of fastener system shall be a product of manufacturer and installer both who have had a minimum of 3 years experience of installation of similar design as indicated on the drawing.
- C. Installation of niche fronts will be performed by those companies who have had 3 years experience in installation of similar design as indicated in the drawings and specified herein.
- D. All production plants are NPCA certified.

### 1.4 ALLOWABLE TOLERANCES

- A. In addition to tolerances of individual elements required by American Concrete Institution Publication 533.3R, erection tolerances shall be as follows:
  1. Variation of anchors and fasteners from dimensions specified: 1/8 inch
  2. Variation in overall dimensions of precast element (height and width): 1/8 inch
  3. Maximum differential between adjacent units in erected position: 1/4 inch
  4. Variation in thickness of precast panels and elements: 1/4 inch
  5. Maximum vertical differential between adjacent columbarium units in installed position: 1/8 inch

### 1.5 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Samples: all fastening systems; mounting hardware and exposed surface finishes including, but not limited to, the following:
  1. Stainless Steel Bolt, Nut and Washers
  2. Tamper Proof Stainless Steel Bolt
  3. Stainless Steel Rosette
  4. Shims
  5. Exposed front of columbarium.
  6. Adhesives and grouts.

- C. Shop Drawings: complete shop and erection drawings of all precast concrete columbarium units, showing all dimensions and details of construction, installation and relation to adjoining work, reinforcements, anchorage, attachments, inserts, location of all predrilled sleeves and other items to be installed in the work of other trades, joint treatment, joint alignment coordinated with cap stone joints, cap stone load bearing locations, and other work required for a complete installation. Provide evidence that the Contractor to be installing the cast in place concrete foundations for the columbarium and pier units has been contacted prior to any work relating to the footings for the columbarium construction and that the construction of the concrete support work has been coordinated with the precast columbarium unit manufacturer and installer.
- D. Manufacturer's Literature and Data:
  - 1. Each type of Concrete Fastener, including adhesive and anchor devices
  - 2. Instructions for final cleaning
  - 3. Concrete stain/coating, including color charts of manufacturers standard color palette
- E. Certificates: Manufacturers qualifications specifying precast concrete columbarium units meet the requirements of ACI 533.3R and as specified.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Ship precast concrete columbarium units to site with adequate protection to prevent chipping, breaking and other damage. Materials shall be marked giving proper identifications and location. Store materials in protected areas to prevent damage, injurious effects of weather and inclusion of foreign matter.

#### 1.7 COORDINATION

- A. Guarantee precast concrete columbarium unit work, including anchorage, joint treatment and related components to be free from all defects in materials and workmanship, including cracking and spalling, and after erection, completed work will be subject to terms of "Guaranty" article in Division 1 Specification Sections except that guarantee period is one year.

### **PART 2 PRODUCTS**

#### 2.1 COLUMBARIUM UNIT

- A. Coarse Aggregate
  - 1. Hard durable aggregate carefully graded from coarse to fine in proportions required to match approved samples.
- B. Portland Cement
  - 1. ASTM C150, Type I and Type II; Color as required.
- C. Steel Wire Reinforcement
  - 1. ASTM A82, cold drawn.
- D. Reinforcing Steel
  - 1. ASTM A615, deformed, Grade 60.

## 2.2 ACCESSORIES

- A. Miscellaneous Galvanized Steel Items
  - 1. Bolts, nuts, washers, anchors, inserts, and the like for handling, erection, or use by other trades.
- B. Back-up Material
  - 1. Closed sell neoprene, butyl, polyurethane, vinyl or polyethylene foam rod, diameter approximately 1-1/3 times the joint width.
- C. Bond Breakers (If Used)
  - 1. Type and material recommended by sealant manufacturer.
- D. Sealing Compound (If Used)
  - 1. Fed. Spec. TT-S-00230 C, Type II, Class A, or ASTM C 920-87, Type S, Grade NS, Class 25.

## 2.3 FABRICATION

- A. Precast concrete columbarium units shall NOT be: fabricated, delivered or incorporated in the work until samples and mock-up have been approved. Precast concrete shall comply with ACI 533.3R, except as modified herein.
  - 1. Concrete for precast columbarium units shall have minimum compressive strength of 4,000 psi at 28 days.
  - 2. Provide additional steel reinforcing as required for casting, handling and erection loads.
  - 3. Back-up Mix: Porosity, strength, weight, and gradation of coarse aggregate shall be as required to produce specified characteristics.
- B. Columbarium units shall be cast in steel forms designed to suit shape and finish required and to withstand high frequency vibration. Concrete shall be deposited in plastic lined or metal forms that are true to line and plane. Vibrations, where required, shall be continuous during process of casting to attain through compaction, complete embedment of reinforcement and to assure concrete of uniform and maximum density without segregation of mix and full thickness of precast element is attained.
  - 1. Anchors, lifting devices, provisions for cutouts and openings, dovetail slots, notches, reglets, inserts and similar items required for the work of other trades shall be accurately positioned in forms before casting elements.
  - 2. All fastener location holes, including those for anchoring of units and attachment of niche covers, shall be cast into units. Drilling to precast concrete columbarium units, after fabrication, shall only be acceptable for bottom attachment to concrete base and for anchoring the capstones set on top of the units.
  - 3. Identification: Provide permanent markings to identify pick-up points and orientation in structure, complying with markings indicated on final shop drawings. Imprint date of casting on each precast unit on a surface, which will not show in finished structure.
- C. Cement, aggregate and water shall be obtained from single sources for facing mix of precast concrete work in order to assure regularity of appearance and uniformity of color.

- D. Finish: Exposed faces shall have smooth finish, unless otherwise noted. Back side of single columbarium units, with back exposed to view shall have surface finish as indicated on the drawings. Specified surface finish for the exposed back of the columbarium units shall be applied during the appropriate time of fabrication and curing. Seal coating of exposed back of units shall be applied as per manufacturer's recommendations.
- E. Curing: Precast concrete shall be cured as required to develop specified structural characteristics and shall be stored in a manner that will permit all surfaces to cure equally and minimize warping, without staining the exposed faces.

#### 2.4 NICHE COVERS

- A. Niche covers shall be furnished by the Owner under separate contract and delivered to the site on pallets and shall be of size, type, finish and quantities required for this project. Contractor and Government representatives shall inspect the niche covers upon delivery to the site. The general quantity and condition shall be observed and an adequate count to cover all the installed columbarium units, plus required spares shall be verified.
- B. Contractor shall provide United States Department of Military and Veterans Affairs, National Cemetery System, standard stainless steel rosette, mounting brackets, and bolts for complete attachment of the niche covers to the precast columbarium units.

### PART 3 EXECUTION

#### 3.1 HANDLING AND INSTALLATION

- A. All work performed under this section shall be in accordance with the Specifications, Drawings, and Manufacturer's instructions and recommendations. In the event of a conflict, the stricter requirement shall prevail.
- B. Before beginning installation, inspect work of other trades in-so-far as it affects the work of this Section. Commencing installation of precast concrete columbarium units will be construed as acceptance, as suitable, of such work of other trades. Concrete base for the columbarium units shall be inspected and modified as required, grinding off high spots, to become an acceptable base upon which to install the units. Columbarium units shall be handled in a nearly vertical plane at all times and stacked vertically on wood supports of adequate strength, until erected. Cover and protect precast concrete columbarium units against staining and other damage. Reinstall, realign and otherwise correct improper installed units.
  - 1. Accurately place and securely anchor precast concrete columbarium units to adjoining construction in accordance with manufacturer's specifications. Provide shop and erection drawings as per manufacturer recommendations and specifications.

#### 3.2 SETTING

- A. Where shown, joints shall be filled with sealant/ Surfaces and other joints for precast concrete columbarium units shall be cleaned of all dust, dirt and other foreign matter. Exposed surfaces of units shall be protected by anti-graffiti coating at the manufacturer or shall be protected until accepted by the VA following installation. Units that have been damaged on exposed surfaces by graffiti, when not coated in advance shall be rejected and removed from the site. Each precast element shall be set level and true to line with uniform joints.
- B. Erect precast concrete members to conform to PCI Design handbook tolerances, except as follows:

1. Variation in joint width  $\pm 1/4$  inch.
  2. Maximum difference between bottom surfaces of adjacent plank  $1/4$  inch.
- C. Joints required to have sealants shall be kept free of dirt and other contaminants for their full depth. Precautions shall be taken to protect precast concrete work from being damaged and soiled during and after installation. Wedges, spacers or other appliances which are likely to cause staining shall be removed from joints.

### 3.3 SEALING OF JOINTS

- A. Where shown and where required to make work watertight, joints between precast concrete columbarium units and between other precast elements and adjoining masonry, concrete and other materials shall be filled with back-up material for depth extending as required to form joint of depth as shown or recommended by sealant manufacturer. Provide bond breakers, at base of sealant where space for back-up does not exist and to prevent sealant from bonding to material at base of joint.

### 3.4 CLEANING

- A. After erection is complete, clean precast columbarium units using materials, equipment and methods recommended by manufacturer.

### 3.5 REPLACEMENT AND REPAIR

- A. Precast concrete columbarium units which are damaged, cracked, stained, improperly fabricated or otherwise defective shall be removed and be replaced. Precast units having minor defects not affecting serviceability or appearance may be repaired when approved by the Architect. Repaired work shall be sound, permanent, flush with adjacent surfaces and of color and texture matching similar adjoining surfaces, and shall show no line of demarcation between original and patched surfaces. Replacement and repairs shall be done at no additional cost to the Owner, CM, or Architect.

### 3.6 INSTALLATION OF NICHE COVERS

- A. Contractor shall install Owners niche covers plumb and level as shown so that exposed faces of niche covers lie in the same plane and that rows of niche covers align both horizontally and vertically. Tighten fasteners to achieve snug fit but do not over tighten to the point where they may crack or break niche covers.

**END OF SECTION**

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**SECTION 04 2000  
UNIT MASONRY**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Concrete Masonry Units.
- B. Mortar and grout and grout.
- C. Reinforcement and anchorage.
- D. Flashings.
- E. Accessories.

1.2 RELATED REQUIREMENTS

- A. Section 04 7200 - Cast Stone Masonry: Manufactured stone trim units.
- B. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.

1.3 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2024.
- C. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019 (Reapproved 2025).
- D. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement; 2022.
- E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2022.
- F. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2023.
- G. ASTM C91/C91M - Standard Specification for Masonry Cement; 2025.
- H. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2024.
- I. ASTM C150/C150M - Standard Specification for Portland Cement; 2024.
- J. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2024.
- K. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2025.
- L. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2024.
- M. ASTM C476 - Standard Specification for Grout for Masonry; 2023.
- N. BIA Technical Notes No. 13 - Ceramic Glazed Brick Exterior Walls; 2017.
- O. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures; 2022, with Errata (2024).

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

1.5 PERFORMANCE REQUIREMENTS

- A. Provide structural unit masonry that develops net-area compressive strengths at 28 days of 2,000 psi.

1.6 SUBMITTALS

- A. See Division 01 for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Shop Drawings:
  - 1. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement." Show elevations of reinforced walls.
- D. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
  - 1. Include material test reports substantiating compliance with requirements.
  - 2. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
  - 3. Cementitious materials: Include brand, type, and name of manufacturer.
  - 4. Grout mixes: Include manufacturer's description and the corresponding proportions of ingredients.
  - 5. Joint reinforcement.
- E. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to Table 2 in TMS 602-11/ ACI.

1.7 QUALITY ASSURANCE

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
- B. Comply with the requirements of the Brick Institute of America Technical Notes. This specification and the drawings are intended to reflect the general provisions of the BIA technical notes. Any discrepancies between these specifications, the details and/or any provisions of the BIA Technical Notes shall not relieve the contractor from his responsibility to comply with the most stringent requirements of the contract documents.

1.8 MOCK-UPS

- A. Construct a masonry wall as a mock-up panel as part of the stone mock-up; include mortar, accessories, structural backup, and flashings (with lap joint, corner, and end dam), as required, in mock-up.
- B. Locate where directed.

C. Mock-up may remain as part of work.

#### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.
- D. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

### **PART 2 PRODUCTS**

#### 2.1 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
  - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches (400 by 200 mm) and nominal depth of 8 inches (200 mm).
  - 2. Load-Bearing Units: ASTM C90, normal weight, 2800 psi Net Area Compressive Strength of Masonry, to achieve  $f_m = 2000$  psi.
    - a. Hollow block, as indicated.

#### 2.2 MORTAR AND GROUT MATERIALS

- A. Masonry Cement: ASTM C91/C91M, Types as listed elsewhere in this specification.
  - 1. Colored Mortar: Premixed cement as required to match Architect/Engineer's color sample.
- B. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.
- E. Mortar Aggregate: ASTM C144.
- F. Grout Aggregate: ASTM C404.
- G. Water: Clean and potable.
- H. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C494/C494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
  - 1. Manufacturers:
    - a. Addiment Incorporated: Mortar Kick

- b. Euclid Chemical Company: Accelguard 80
  - c. GCP Applied Technologies: Morset
  - d. Sonneborn, Div. of ChemRex: Trimix-NCA
  - e. Substitutions: See Division 1.
- I. Moisture-Resistant Admixture: Water repellent compound designed to reduce capillarity.
- 1. Manufacturer:
    - a. BASF; MasterPel 210D: <https://master-builders-solutions.com>
    - b. Euclid Chemical Co.; Blocktite Mortar Admixture: [www.euclidchemical.com](http://www.euclidchemical.com)
    - c. Krete Industries, Inc.; Krete Gard Mortar Mix: [www.krete.com](http://www.krete.com)
    - d. Substitutions: See Division

### 2.3 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers of Joint Reinforcement and Anchors:
- 1. Hohmann & Barnard, Inc (including Dur-O-Wal brand): [www.h-b.com](http://www.h-b.com).
  - 2. Substitutions: See Division 01.
- B. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi), deformed billet bars; galvanized.
- C. Masonry Joint Reinforcement, General; ASTM A951/A951M
- 1. Exterior Walls: Hot-dip galvanized, carbon steel.
  - 2. Wire Size for Side Rods: 0.148-inch (3.77-mm) diameter.
  - 3. Wire Size for Cross Rods: 0.148-inch (3.77-mm) diameter.
  - 4. Wire Size for Veneer Ties: 0.148-inch (3.7-mm) diameter.
  - 5. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16" (407mm) o.c.
  - 6. Provide in lengths of not less than 10 feet (3m) with prefabricated corner and tee units.
- D. Joint Reinforcement: Truss or ladder type with a single pair of side rods..
- E. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.
- 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A82/A82M; with ASTM A153/A153M Class B-2 Coating.
  - 2. Sheet Steel, Galvanized after Fabrication: ASTM A1008/A1008M, Commercial Steel, with ASTM A153/A153M, Class B Coating.
  - 3. Steel Pates, Shapes, and Bars: ASTM A36/A36M.
- F. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch (16-mm) cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches (50 mm) parallel to face of veneer.
- G. Individual Wire Ties: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plan of wall. Rectangular units with closed ends and not less than 4 inches (100 mm) wide.

1. Where wythes do not align or are of different materials, use adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches (32 mm).
2. Wire: Fabricate from 3/16-inch- (4.76-mm-) diameter, hot-dip galvanized steel wire. Mill-galvanized wire ties may be used in interior walls unless otherwise indicated.
  - a. Products:
    - 1) Hohmann & Barnard, Inc. HB 5213
    - 2) Wire-Bond RJ-711
    - 3) Substitutions: See Division 01.

## 2.4 FLASHINGS

- A. Metal Flashing Materials: Stainless Steel Fabric Flashing, Multi-Flash SS by York Flashings, or equal. Follow all manufacturer's installations instructions.

## 2.5 ACCESSORIES

- A. 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. Basis of Design: Mortar Trap, by Hohmann & Barnard, Inc; or equal.
  1. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
- B. Drip Edge: Stainless steel; compatible with membrane and adhesives.
- C. Weeps: Basis of Design: Quadro-Vent by Hohmann & Barnard; or equal. Color to be selected by Architect.
- D. Cavity Vents: Basis of Design: Quadro-Vent by Hohmann & Barnard; or equal. Color to be selected by Architect.
- E. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

## 2.6 LINTELS

- A. Masonry Lintels: Built-in-place masonry lintels made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. Temporarily support built-in-place lintels until cured.

## 2.7 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze components, or other admixtures, unless otherwise indicated.
  1. Do not use calcium chloride in mortar or grout.
  2. Use Portland cement-lime mortar unless otherwise indicated.
  3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions to ensure that mortar color is consistent.
- B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

- C. Mortar for Unit Masonry: Comply with ASTM C270, using the Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength.
  - 1. Masonry below grade and in contact with earth: Type M.
  - 2. Exterior, above-grade, loadbearing masonry; and for other applications where another type is not indicated, use: Type S.
- D. Colored Mortar: Proportion selected pigments and other ingredients to match Architect/Engineer's sample, without exceeding manufacturer's recommended pigment-to-cement ratio.
- E. Grout for Unit Masonry: Comply with ASTM C476.
  - 1. Grout for bond beams, masonry lintels, reinforced cavities, and voids indicated to be filled shall comply with TMS 602-11/ACI 30.1-11/ASCE5-11 for dimensions of grout spaces and pour heights.
  - 2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C143/C143M.

## 2.8 MORTAR AND GROUT MIXING

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
- B. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).
- C. Mixing: Thoroughly mix ingredients using mechanical batch mixer in accordance with ASTM C270.
  - 1. Maintain sand uniformly damp immediately before the mixing process.
  - 2. Do not use anti-freeze compounds to lower the freezing point of mortar.
  - 3. If water is lost by evaporation, re-temper mix only within two hours of mixing.

## PART 3 EXECUTION

### 3.1 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.
  - 1. Verify that foundations are within tolerances specified.
  - 2. Verify that reinforcing dowels are properly placed.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 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.

### 3.3 COLD AND HOT WEATHER REQUIREMENTS

- A. Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

### 3.4 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges.
- C. Build chases and recesses to accommodate items specified in this and other Sections.
- D. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.
- E. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

### 3.5 TOLERANCES

- A. Dimensions and Locations of Elements:
  - 1. For dimensions in cross section or elevation do not vary by more than plus 1/2 inch (12 mm) or minus 1/4 inch (6 mm).
  - 2. For location of elements in plan do not vary from that indicated by more than plus or minus 1/2 inch (12 mm).
  - 3. For location of elements in elevation do not vary from that indicated by more than plus or minus 1/4 inch (6 mm) in a story height or 1/2 inch (12 mm) total.
- B. Lines and Levels:
  - 1. For bed joints and top surfaces of bearing walls do not vary from level by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2 inch (12 mm) maximum.
  - 2. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2 inch (12 mm) maximum.
  - 3. For lines and surfaces do not vary from straight by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2 inch (12 mm) maximum.
  - 4. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2 inch (12 mm) maximum.
  - 5. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch (1.5 mm) except due to warpage of masonry units within tolerances specified for warpage of units.
- C. Joints:
  - 1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).

2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm).

### 3.6 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 (200 mm).
  3. Mortar Joints: Concave.

### 3.7 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- D. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- E. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- F. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- G. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- H. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.
- I. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below and rod mortar or grout into core.

### 3.8 MORTAR BEDDING AND JOINTING

- A. Lay hollow CMUs as follows:
  1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.

2. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
  3. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
  4. Joint Width: 3/8-inch (10-mm).
- B. Lay solid masonry units and brick sized units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Where indicated or required, set cast-stone trim units in full bed of mortar with full vertical joints. Fill dowel, anchor, and similar holes.
1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
  2. Allow cleaned surfaces to dry before setting.
  3. Wet joint surfaces thoroughly before applying mortar.
- D. Tooling: Joints shall be struck flush, and, after mortar has set to thumbprint hard, tool joints with a tool which compacts mortar and presses excess mortar out of joint rather than dragging it out. Joints shall be made with a straight clean line. Joints shall be the following:
1. Raked Joints: Joints shall be raked at exposed masonry as indicated, except where other joints are specified.
  2. Flush Joints: Joints shall be struck flush at the following locations.
  3. Field brick with intent to create monochromatic section.

### 3.9 WEEPS/CAVITY VENTS

- A. Install weeps in veneer and cavity walls at 24 inches (600 mm) on center horizontally on top of 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 (800 mm) on center horizontally below shelf angles and lintels and near top of walls.

### 3.10 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 control panels continuously throughout full height of exterior masonry cavities during construction of exterior wythe, complying with manufacturer's installation instructions.

### 3.11 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar at CMU with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).
  1. Space reinforcement not more than 16 inches (406 mm) o.c.
  2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls and in stacked bond applications.
  3. Provide reinforcement not more than 8 inches (203 mm) above and below wall openings and extending 12 inches (305 mm) beyond openings in addition to continuous reinforcement.

- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.
- E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

### 3.12 ANCHORING MASONRY VENEERS

- A. Anchor masonry veneers to wall framing with masonry-veneer anchors to comply with the following requirements:
  - 1. Fasten screw-attached anchors through sheathing to wall framing with metal fasteners of type indicated. Use two fasteners unless anchor design only uses one fastener.
  - 2. Embed tie sections in masonry joints. Provide not less than 1 inch (25 mm) of air space between back of masonry veneer and face of sheathing.
  - 3. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
  - 4. Space anchors as indicated, but not more than 16 inches (406 mm) o.c. vertically and 24 inches (610 mm)] o.c. horizontally with not less than 1 anchor for each 2.67 sq. ft. (0.25 sq. m) of wall area. Install additional anchors within 12 inches (305 mm) of openings and at intervals, not exceeding 36 inches (914 mm), around perimeter.

### 3.13 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.
- B. Install flashing as follows, unless otherwise indicated:
  - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
  - 2. At multiwythe masonry walls, including cavity walls, extend flashing from 1/2 inch back of the exterior face of outer wythe of masonry, through outer wythe, turned up a minimum of 8 inches (200 mm), and fix to the backup wall with a termination bar, fasteners and sealant.
  - 3. At lintels, shelf, angles, ledges, heads and sills, install the flashing as described above and add a stainless steel drip edge at the exterior face. The stainless steel drip will be set in a continuous bead of sealant. Adhere flashing to top of drip edge. Seal joint between pieces of drip edge.
  - 4. At lintels and shelf angles, extend flashing a minimum of 4 inches into masonry at each end. At heads and sills, extend flashing 4 inches at ends and turn up not less than 2 inches to form end dams at the first available head joint.
  - 5. Turn up flashing not less than 2 inch each side of brick control and expansion joints to form a pan.
  - 6. Install metal drip edges at flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch (13 mm) back from outside face of wall and adhere flexible flashing to top of metal drip edge.

- C. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.

### 3.14 LINTELS

- A. Install loose steel lintels over openings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled.

### 3.15 REINFORCED UNIT MASONRY INSTALLATION

- A. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
- B. Grouting: Do not place grout until entire height of masonry to be grouted until masonry has attained enough strength to resist grout pressure.
  - 1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space, maximum pour height, and maximum lift heights.
  - 2. Limit height of vertical grout pours to not more than 60 inches (1520 mm) mechanically vibrate grout pours over 12 inches (305 mm).
  - 3. Where the following conditions are met grout lift height shall not exceed 12.67 feet:
    - a. Masonry has cured for at least 4 hours
    - b. Grout slump is maintained between 10 and 11 inches
    - c. No intermediate bond beams are placed between the top and bottom of the pour height.
    - d. Cleanouts and inspection are required for grout pours over 5 feet.

### 3.16 GROUTED COMPONENTS

### 3.17 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form control joints in concrete masonry using one of the following methods:
  - 1. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.
  - 2. Install preformed control-joint gaskets designed to fit standard sash block.
  - 3. Form open joint full depth of concrete masonry wythe and of width indicated, but not less than 3/8 inch (10 mm) for installation of sealant or backer rod.
- C. Form expansion joints in brick as follows:
  - 1. Build flanges of metal expansion strips into masonry. Lap each joint 4 inches (100 mm) in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints if any.
  - 2. Build flanges of factory-fabricated, expansion-joint units into masonry.

3. Build in compressible joint fillers where indicated.
  4. Form open joint full depth of brick wythe and of width indicated, but not less than 3/8 inch (10 mm) for installation of sealant and backer rod.
- D. Do not continue horizontal joint reinforcement through control or expansion joints.

### 3.18 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense. Required tests as shown on structural drawings.
- B. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

### 3.19 CLEANING AND REPAIR

- A. Clean unit masonry as work progresses by dry brushing to remove excess mortar, mortar smears and mortar droppings.
- B. After mortar is thoroughly set and cured, clean exposed masonry as follows:
  1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
  2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
  3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
  4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
  5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
  6. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
  7. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.
  8. Cleaning shall not diminish appearance or weather resistance of building exterior.
- C. Clean soiled surfaces with cleaning solution. Protect adjacent or dissimilar materials from damage from cleaning activities.
- D. Clean soiled surfaces with cleaning solution. Protect adjacent or dissimilar materials from damage from cleaning activities.

### 3.20 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

- B. **Excess Masonry Waste:** Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

**END OF SECTION**

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**SECTION 04 4200  
EXTERIOR STONE CLADDING**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Cut limestone and granite veneer at columbaria walls.
- B. Metal anchors and supports.
- C. Sealing exterior joints.

1.2 RELATED REQUIREMENTS

- A. Section 07 9200 - Joint Sealants.

1.3 REFERENCE STANDARDS

- A. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2024.
- B. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2025.
- C. ASTM C568/C568M - Standard Specification for Limestone Dimension Stone; 2022.
- D. ASTM C615/C615M - Standard Specification for Granite Dimension Stone; 2023.
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- F. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants; 2022.
- G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2023.
- H. ILI (HB) - Indiana Limestone Handbook; 2007.
- I. NBGQA (SPEC) - Specifications for Architectural Granite, Version 20-1; 2020.
- J. NSI (DSDM) - Dimensional Stone Design Manual, Version VIII; 2016.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.5 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on stone, mortar products, and sealant products.
- C. Shop Drawings: Indicate layout, pertinent dimensions, anchorages, head, jamb, and sill opening details, and jointing methods.
- D. Samples: Submit four stone samples sized to match existing, illustrating color range and texture, markings, surface finish .
- E. Samples: Submit mortar color samples.

- F. Installation Instructions: Submit stone fabricator's installation instructions and field erection or setting drawings; indicate panel identifying marks and locations on setting drawings.

#### 1.6 QUALITY ASSURANCE

- A. Design anchors and supports under direct supervision of a Professional Structural Engineer, registered in the state of Iowa.
  - 1. Design anchors to resist positive and negative wind pressures and other loads as required by applicable code.
  - 2. Design anchor attachment to stone with a factor of safety of 5:1.
  - 3. Design each individual anchor with a factor of safety in the vertical dead-load-bearing direction of 4:1 and in the horizontal lateral-load-bearing direction of 2:1.
- B. Perform work in accordance with ILI Indiana Limestone Handbook.
- C. Perform work in accordance with NBGQA (SPEC).
- D. Perform work in accordance with NSI (DSDM).
- E. Maintain one copy of each document on site.
- F. Stone Fabricator: Company specializing in fabricating cut stone with documented experience.
- G. Installer Qualifications: Company specializing in performing the work of this section.
- H. Each type of stone shall come from a single quarry, with sufficient reserves to satisfy the requirements of the project. The stone supplier shall have the capabilities to cut and finish the stone without delaying the project.

#### 1.7 MOCK-UP

- A. Construct stone wall mock-up, width of wall by height necessary to include stone anchor accessories, sill flashings, and corner conditions.
- B. Mock-up color consistency: demonstrate color consistency; color range shall not exceed range of color established by approved samples.
- C. Locate where directed.
- D. Mock-up may remain as part of the Work.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store stone panels vertically on edge, resting weight on panel edge, unless directed otherwise by stone manufacturer.
- B. Protect stone from discoloration.

#### 1.9 FIELD CONDITIONS

- A. During temporary storage on site, at the end of working day, and during rainy weather, cover stone work exposed to weather with non-staining waterproof coverings, securely anchored.
- B. Prevent staining of stone from mortar, sealants and other sources.
- C. Cold-Weather and Hot-Weather Requirements: Comply with ACI 530.1/ASCE 6/TMS 602.

## **PART 2 PRODUCTS**

### **2.1 STONE**

- A. Oolitic Limestone: Indiana Oolitic Limestone.
  - 1. Grade: ILI Standard.
  - 2. Color: Grey.
  - 3. Grain Direction: match existing.
  - 4. Surface Finish: match existing.
- B. Granite; complying with ASTM C615/C615M.
  - 1. Surface Texture: Honed.
  - 2. Coursing: Ashlar Pattern to match existing.
  - 3. Basis of Design:
    - a. Cold Spring Granite Inc.; Carnelian: [www.coldspringgranite.com/#sle](http://www.coldspringgranite.com/#sle).
    - b. Substitutions: See Division 01.
      - 1) All substitution requests must submit a physical sample prior to the Bid.

### **2.2 MORTAR**

- A. Mortar: ASTM C270, Type N, Proportion specification, using Portland cement of white color.
- B. Mortar Color Additive: match existing.

### **2.3 ANCHORS AND ACCESSORIES**

- A. Anchors and Other Components in Contact with Stone: Stainless steel ASTM A666 Type 304.
  - 1. Sizes and configurations: As required for vertical and horizontal support of stone and applicable loads.
  - 2. Wire ties are not permitted.
- B. Support Components not in Contact with Stone: Stainless steel, ASTM A240/A240M Type 304.
- C. Setting Buttons and Shims: Lead type.
- D. Flashings: Stainless Steel Fabric Flashing, Multi-Flash SS by York Flahsings, or equal. Follow all manufacturer's installations instructions..
- E. Weep/Cavity Vents: Quadro-Vent by Hohmann & Barnard, or equal. Color to match mortar. .
- F. Joint Sealant: ASTM C920 silicone sealant with movement capability of at least plus/minus 25 percent and non-staining to stone when tested in accordance with ASTM C1248.
  - 1. Color to match mortar.
- G. Joint Backer Rod: ASTM C1330 open cell polyurethane of size 40 to 50 percent larger in diameter than joint width.
- H. Cleaning Solution: Type that will not harm stone, joint materials, or adjacent surfaces.

## 2.4 STONE FABRICATION

- A. Thickness: 3/4 inch (18 mm).
- B. Panel Size: As indicated on drawings.
- C. Fabrication Tolerances:
  - 1. Maximum Variation From Thickness: 3/16 inch.
  - 2. Maximum Variation From Face Size: 3/16 inch.
  - 3. Maximum Variation From Flat: 1/16 inch.
- D. Fabricate units for uniform coloration between adjacent units and over the full area of the installation.
- E. Slope exposed top surfaces of stone and horizontal sill surfaces for natural wash.
- F. Cut drip slot in bottom surface of work projecting more than 1/2 inch (13 mm) over wall openings. Size slot not less than 3/8 inch (10 mm) wide and 1/4 inch (6 mm) deep; full width of projection.

## **PART 3 EXECUTION**

### 3.1 EXAMINATION

- A. Verify that support work and site conditions are ready to receive work of this section.
- B. Verify that items built-in under other sections are properly located and sized.

### 3.2 PREPARATION

- A. Clean stone prior to erection. Do not use wire brushes or implements that will mark or damage exposed surfaces.

### 3.3 INSTALLATION

- A. Install flashings of longest practical length and seal watertight to back-up. Lap end joint minimum 6 inches (150 mm) and seal watertight.
- B. Erect stone in accordance with stone supplier's instructions and erection drawings.
- C. Set stone with a consistent joint width of 3/8 inch (9 mm).
- D. Install anchors and place setting buttons to support stone and to establish joint dimensions.
- E. Install weep/cavity vents in vertical stone joints at 24 inches on center horizontally, immediately above horizontal flashings, above shelf angles and supports, at bottom of walls, and at top of each cavity space; do not permit mortar accumulation in cavity space.
- F. Joints in Exterior Work: Seal joints with joint sealant over backer rod, following sealant manufacturer's instructions; tool sealant surface to concave profile.
- G. Joints in Interior Work: Leave perimeter joints and expansion joints open for sealant; fill other joints with pointing mortar; pack and work into voids; tool surface to concave joint.
- H. Fill joints with pointing mortar. Pack and work into voids. Neatly tool surface to concave joint.

3.4 CUTTING AND FITTING

- A. Obtain approval prior to cutting or fitting any item not so indicated on drawings.
- B. Do not impair appearance or strength of stone work by cutting.

3.5 CLEANING

- A. Remove excess joint material upon completion of work.
- B. Clean soiled surfaces with cleaning solution.
- C. Use non-metallic tools in cleaning operations.

**END OF SECTION**

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**SECTION 07 9000  
JOINT SEALANTS**

**PART 1 GENERAL**

1.1 SUMMARY

- A. Section Includes:
1. Exterior sealants.
  2. Joint accessories.

1.2 REFERENCES

- A. ASTM International Inc.
1. ASTM C 510 - Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants.
  2. ASTM C 719 - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
  3. ASTM C 794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants.
  4. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants.
  5. ASTM C 1193 - Standard Guide for Use of Joint Sealants.
  6. ASTM C 1247 - Standard Test Method for Durability of Sealants Exposed to Continuous Immersion in Liquids.
  7. ASTM C 1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.
  8. ASTM C 1311 - Standard Specification for Solvent Release Sealants.
  9. ASTM D 2203 - Standard Test Method for Staining from Sealants.

1.3 SUBMITTALS

- A. Product Data:
1. Materials list of items proposed to be provided under this Section;
  2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
- B. Samples:
1. Submit standard cured color samples for each sealant type illustrating selected colors.
  2. Include instructions for removing existing sealants and preparing joints for new sealant.
- C. Manufacturer's Certificate:
1. Certify products are suitable for intended use and products meet or exceed specified requirements.
  2. Certify applicator is approved by manufacturer.
- D. Qualification Data:

**IDAS - IVC Columbarium and Irrigation Package 1**  
**IDAS Project # 9517.00**  
**FAI # IA 23-04**  
**Project # 2250022390**

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1. Submit applicator's qualifications, including reference projects of similar scope and complexity, with current phone numbers and contact names of architects and owners for verification.
- 1.4 QUALITY ASSURANCE
- A. Perform work in accordance with the following:
    1. Building Joints: ASTM C 1193.
- 1.5 QUALIFICATIONS
- A. Manufacturer: Company specializing in manufacturing products specified in this section with documented experience.
  - B. Applicator Qualifications:
    1. Company specializing in performing work of this section with documented experience, minimum three successfully completed projects of similar scope and complexity, and approved by manufacturer.
    2. Designate one individual as project foreman who shall be on site at all times during installation.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Accept materials on site in manufacturers unopened original packaging. Inspect for damage.
  - B. Store primers and sealants in cool dry location with ambient temperature range of 60 to 80 degrees F (15 to 27 degrees C).
- 1.7 ENVIRONMENTAL REQUIREMENTS
- A. Do not install primers or sealants when atmospheric temperatures or joint surface temperatures are less than 40 degrees F (4 degrees C).
- 1.8 SCHEDULING
- A. Ensure sealants are cured before covering with any other materials.
- 1.9 WARRANTY
- A. Submit signed copies of the following warranties against adhesive and cohesive failure of sealant and against infiltration of water and air through sealed joint for period of 3 years from date of completion.
  - B. Manufacturer's standard warranty covering sealant materials.
  - C. Applicator's standard warranty covering workmanship.

**PART 2 PRODUCTS**

- 1.1 SILICONE SEALANTS
- A. Single Component Silicone: Dow Corning 795 Silicone Building Sealant (design basis) , color as selected, at exterior and interior perimeter of windows.

1.2 POLYURETHANE SEALANTS

- A. Single Component Non-Sag Polyurethane: Sonneborn Building Products Sonolastic NP 1 (MasterSeal NP 1) (design basis) , color as selected, at locations other than exterior and interior perimeter of windows.

1.3 ACCESSORIES

- A. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- B. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- C. Joint Backing: Closed-cell round foam rod compatible with sealant; oversized 25 to 50 percent larger than joint width; recommended by sealant manufacturer to suit application
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.
- E. Masking tape: Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces.

**PART 3 EXECUTION**

1.1 EXAMINATION

- A. Verify substrate surfaces and joint openings are ready to receive work.
  - 1. Verify joint surfaces are clean and dry.
  - 2. Ensure concrete surfaces are fully cured.
- B. Report unsatisfactory conditions in writing to the Architect;
- C. Do not proceed until unsatisfactory conditions are corrected.

1.2 PREPARATION

- A. Prepare joints in accordance with ASTM C 1193 and manufacturer's instructions.
- B. Clean joint surfaces to remove dirt, dust, oils, wax, paints, and other contamination capable of affecting primer and sealant bond.
- C. Protect elements surrounding the Work of this section from damage or disfiguration. Apply masking tape to adjacent surfaces when required to prevent damage to finishes from sealant installation.

1.3 SEALANT INSTALLATION

- A. Install primer and sealants in accordance with ASTM C 1193 and manufacturer's instructions.
- B. Install joint backing to maintain the following joint ratios:
  - 1. Joints up to 1/2 inch (13 mm) Wide: 1:1 width to depth ratio.
  - 2. Joints Greater than 1/2 inch (13 mm) Wide: 2:1 width to depth ratio; maximum 1/2 inch joint depth.
- C. Install bond breaker where joint backing is not used.
- D. Apply primer where required for sealant adhesion.

- E. Install sealants immediately after joint preparation.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- G. Joining Silicone and Polyurethane Sealants:
  - 1. Install polyurethane sealants first.
  - 2. Join silicone sealant to polyurethane in accordance with manufacturer's instructions.
- H. Tool exposed joint surface concave.

**1.4 CLEANING**

- A. Remove masking tape.
- B. Clean adjacent surfaces soiled by sealant installation.

**END OF SECTION 07 9000**

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**SECTION 10 1400  
SIGNAGE**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Columbaria Signage and Service Plaque

1.2 SUBMITTALS

- A. See Division 01 for submittal procedures.
- B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
- C. Shop Drawings: Show fabrication and installation details for signs.
  - 1. Show sign mounting heights, locations of supplementary supports to be provided by others, and accessories.
- D. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
  - 1. When content of signs is indicated to be determined later, request such information from Owner through Architect/Engineer at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
  - 2. Submit for approval by Owner through Architect/Engineer prior to fabrication.
- E. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, colors, finishes and method of attachment.
- F. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with documented experience.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Package signs as required to prevent damage before installation.
- B. Store tape adhesive at normal room temperature.

1.5 FIELD CONDITIONS

- A. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
- B. Maintain this minimum temperature during and after installation of signs.

## **PART 2 PRODUCTS**

### 2.1 MANUFACTURERS

#### A. Plaques:

1. Gemini Sign Products: <https://www.geminisignproducts.com/>
2. ASI Signage: <https://asisignage.com/>
3. Substitutions: See Division 01.

### 2.2 SIGNAGE APPLICATIONS

- #### A. Plaques: Provide Wall plaques, column plaques and row plaques, as shown on the drawings.

### 2.3 SIGN TYPES

### 2.4 PLAQUES

#### A. Metal Plaques at Columbaria Walls:

1. Metal: match existing located on Columbaria Walls 7-12.
2. Metal Sheet Thickness: match existing thickness, as located on Columbaria Walls 7-12.
3. Border: match existing, as located on Columbaria Walls 7-12.
4. Texture: match existing, as located on Columbaria Walls 7-12.
5. Background Color: match existing, as located on Columbaria Walls 7-12.
6. Mounting: blind mounted with stem.
7. Text height: match existing, as located on Columbaria Walls 7-12.
8. Font: match existing, as located on Columbaria Walls 7-12.
9. Size: match existing on Columbaria Walls 7-12.

#### B. Service Plaque at Shelter:

1. Metal material: match existing.
2. Thickness: match existing thickness.
3. Texture: match existing.
4. Field Background Color: match existing.
5. Mounting: blind mounted with stem.
6. Size: match existing.

## **PART 3 EXECUTION**

### 3.1 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that items, including anchor inserts, and electrical power are sized and located to accommodate signs.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install neatly, with horizontal edges level.
- C. Protect from damage until Substantial Completion; repair or replace damage items.
- D. Existing plaques to be salvaged, cleaned, polished, and remounted w/ new stand-offs.

**END OF SECTION**

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**SECTION 12 9300  
SITE FURNISHINGS**

**PART 1 GENERAL**

1.1 SUMMARY

- A. This section include the following:
  - 1. Benches.

1.2 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2019.
- C. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2024.
- D. ASTM A536 - Standard Specification for Ductile Iron Castings; 1984, with Editorial Revision (2019).

1.3 SUBMITTALS

- A. See Section Division 01, for submittal procedures.
- B. Product Data: Provide manufacturer's specifications and descriptive literature, installation instructions, and maintenance information.
- C. Shop Drawings: Indicate plans for each unit or group of units, elevations with model number, overall dimensions, construction, and anchorage details.
- D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below.
  - 1. Size: Not less than 6-inch- (152-mm-) long linear components and 4-inch- (102-mm-) square sheet components.
- E. Warranty: Submit manufacturer's standard warranty.

1.4 WARRANTY

- A. See Division 01, for additional warranty requirements.
- B. All site furnishings to be free from manufacturing defects for no less than one year from the date of Substantial Completion.
- C. Additionally, all site furnishings including but not limited to benches, carry a Lifetime Functional Warranty that covers structural and functional failure of steel components including welding.

**PART 2 PRODUCTS**

2.1 MANUFACTURERS

- A. Metal Furnishings:
  - 1. DuMor, In. P.O. Box 142 Mifflintown, PA 17059. P: 800.598.4018. www.dumor.com.

2. Substitutions: See Division 01.

## 2.2 METAL FURNISHINGS

### A. Cast Iron Benches:

1. Seating: Compliant with ADA Standards.
2. Model Number: 93-60
3. Length: 6'
4. Color: Bronze
5. Finish: Powder-coated
6. Mounting: Surface Plate mounted to concrete pad.

## **PART 3 EXECUTION**

### 3.1 EXAMINATION

- A. Verify proper installation of mounting surfaces, preinstalled anchor bolts, and other mounting devices; and ready to receive site furnishing items.
- B. Examine areas and conditions, with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.
- C. Do not begin installation until unacceptable conditions are corrected.

### 3.2 INSTALLATION

- A. Install site furnishings in accordance with approved shop drawings, and manufacturer's installation instructions.
- B. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required.
- C. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
- D. Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.
- E. Bolt to Concrete: Anchor site furnishings securely in place to supports with concrete anchor bolts in accordance with manufacturer's instructions.
- F. Use hardware and fasteners in accordance with manufacturer's instructions.
- G. Repair minor damages to finish in accordance with manufacturer's instructions as approved by Architect.
- H. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

### 3.3 CLEANING

- A. After completing site furnishing installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.

B. Do not use harsh cleaning materials or methods that would damage finish.

3.4 PROTECTION

A. Protect installed site furnishings from damage during construction.

**END OF SECTION**

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**SECTION 32 8400  
PLANTING IRRIGATION**

**PART 1 GENERAL**

1.1 REFERENCE STANDARDS

- A. ASTM A536 - Standard Specification for Ductile Iron Castings; 1984, with Editorial Revision (2019).
- B. 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>)); 2012 (Reapproved 2021).
- C. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting; 2018.
- D. ASTM D3139 - Standard Specification for Joints for Plastic Pressure Pipes using Flexible Elastomeric Seals; 2019.
- E. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe; 2014 (Reapproved 2021).
- F. NEC - National Electric Code; Current Version.

1.2 DESCRIPTION

1.3 CONTRACTOR IS RESPONSIBLE FOR PROVIDING A PROGRAMMABLE FULLY AUTOMATIC SYSTEM WITH FULL AND COMPLETE COVERAGE WITHIN THE AREAS INDICATED ON THE DRAWINGS. FURNISH ALL LABOR, MATERIALS, SUPPLIES, EQUIPMENT, TOOLS, AND TRANSPORTATION, AND PERFORM ALL OPERATIONS IN CONNECTION WITH AND REASONABLY INCIDENTAL TO THE COMPLETE INSTALLATION OF THE IRRIGATION SYSTEM, AND GUARANTEE/WARRANTY AS SHOWN ON THE DRAWINGS, THE INSTALLATION DETAILS, AND AS SPECIFIED. OTHER ITEMS OF WORK SPECIFICALLY INCLUDED ARE:

- A. Procurement of all applicable licenses, permits, and payment of required fees.
- B. Coordination of Utility Locates public and private ("Call Before You Dig").
- C. Maintenance period services.
- D. Sleeving for irrigation pipe and wire as indicated, and/or beneath all hardscape surfaces.

1.4 RELATED WORK

1.5 SECTION 32 90 00 PLANTING

1.6 QUALITY ASSURANCE

1.7 IRRIGATION CONTRACTOR:

- A. Irrigation Contractor must be a Certified Irrigation Contractor (CIC) and must demonstrate experience with the installation of at least five (5) irrigation systems of similar size and scope within the last (3) years.
- B. Irrigation Contractor must be licensed in the State of Iowa (if required).

- C. Provide documentation of contractor qualifications with equipment submittals.
- 1.8 APPROVED EQUIPMENT MANUFACTURER:
- A. Manufacturer regularly and presently manufactures the item submitted as one of their current and supported principal products.
- 1.9 SYSTEM REQUIREMENTS:
- A. Full and complete coverage as described herein and presented in the drawings is required. Contractor shall, at no additional cost to the Client, make necessary adjustments to layout required to achieve full coverage of irrigated areas.
  - B. Layout work as closely as possible to drawings. Drawings are diagrammatic to the extent that swing joints, offsets and all fittings are not shown.
  - C. Contractor to utilize "wholegoods" (Rain Bird) consistent to existing equipment for Owner's maintenance requirements.
- 1.10 SUBMITTALS
- 1.11 SUBMITTAL PROCEDURES: SECTION 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- A. Submit product data. Provide digital copies of irrigation information in PDF format with table of contents and index sheet. Provide sections for contractor qualifications, valves, sprinklers, pipe and fittings, wire and wire connectors, valve boxes, ID tags, shop drawings, and all other irrigation equipment shown or described on the drawings and within these specifications. Highlight items being supplied on the catalog cut sheets – catalogs without product highlighted or model numbers provided will not be accepted. Submittal package must be complete prior to being reviewed by the Contracting Officer Representative or Resident Engineer (COR/RE). All products in BOM to be submitted, incomplete submittals will be returned without review.
  - B. Quantities of materials need not be included.
- 1.12 MANUFACTURERS' DATA: SUBMIT MANUFACTURERS' CATALOG CUTS, MODEL NUMBERS, SPECIFICATIONS, AND OPERATING INSTRUCTIONS FOR EQUIPMENT SHOWN ON THE MATERIALS LIST.
- 1.13 C. SHOP DRAWINGS: SHOW SIZE, CONFIGURATION, FABRICATION AND INSTALLATION DETAILS. NOTE MODIFICATIONS TO THE INSTALLATION DETAIL. DO NOT SECURE EQUIPMENT OR START WORK BEFORE FINAL SHOP DRAWING(S) APPROVAL.
- 1.14 D. TEST REPORTS: CERTIFY PRODUCTS COMPLY WITH SPECIFICATIONS.
- 1.15 E. MAINTENANCE AND OPERATION DATA:
- A. 1. Provide start-up, maintenance, troubleshooting, emergency, and shut-down instructions for each operational product.

- 1.16 F ELECTRONIC AUTOCAD AND PDF RECORD DRAWINGS: MAINTAIN A COMPLETE SET OF AS-BUILT DRAWINGS AND CORRECT DAILY TO SHOW CHANGES IN LOCATIONS OF ALL PIPE, WIRE, VALVES, SPRINKLERS AND RELATED IRRIGATION EQUIPMENT.
- 1.17 1. PREPARE A MAP DIAGRAM SHOWING LOCATION OF ALL VALVES, SPRINKLERS, LATERAL LINES AND ROUTE OF WIRES. IDENTIFY SIZE, STATION NUMBER, AND TYPE OF IRRIGATION. SUBMIT FOR APPROVAL "RECORD" DRAWINGS BEFORE FINAL DRAWINGS ARE PREPARED.
- 1.18 APPLICABLE PUBLICATIONS
- 1.19 THE PUBLICATIONS LISTED BELOW FORM A PART OF THIS SPECIFICATION TO THE EXTENT REFERENCED. THE PUBLICATIONS ARE REFERENCED IN THE TEXT BY THE BASIC DESIGNATION ONLY.
- 1.20 AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME):
- 1.21 AMERICAN NATIONAL STANDARD INSTITUTE (ANSI):
- A. B40.1 Gauges-Pressure Indicating Dial Type Elastic Element
- 1.22 AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM):
- A. B61-15 Steam or Valve Bronze Castings
- B. B62-17 Composition Bronze or Ounce Metal Castings
1. D1785-15e1 Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedule 40,80, and 120
- a. D2241-15 Poly(Vinyl Chloride) (PVC) Pressure Rated Pipe (SDR Series)
- 1) D2287-12 Nonrigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds
- 2) D2464-15 Threaded Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80
- b. D2466-17 Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40
- 1) D2564-12(2018) Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Pipe and Fittings
- 2) D2855-15 Making Solvent Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings
- (a) D3350-14 Standard Specification for Polyethylene Plastics Pipe and Fittings Materials
- (1) F477-14 Making Solvent Cemented Joints with Poly(Vinyl Chloride)(PVC) Pipe and Fittings
- (2) F714-13 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
- (b) F1962-11 Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit Under Obstacles, Including River Crossings
- c. F2164-18 Field Leak Testing of Polyethylene Pressure Piping Systems

1.23 AMERICAN WATER WORKS ASSOCIATION (AWWA):

- A. C110-12 Ductile-Iron and Gray-Iron Fittings, 3-Inch through 48-Inch for Water and Other Liquids
  - 1. C111-17 Rubber Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe Fittings
  - 2. C115-11 Flanged and Ductile Iron and Gray Iron Pipe with Threaded Flanges
  - 3. C151-17 Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand Lined Molds, for Water or Other Liquids
  - 4. C153-11 Ductile-Iron Compact Fittings, 3-Inch Through 12-Inch for Water and Other Liquids
- B. C500-09 Gate Valves for Water and Sewerage
- C. C504-15 Rubber Sealed Butterfly Valves
  - a. C600-17 Installation for Ductile-Iron Water Mains and Their Appurtenances
  - 2. C900-16 Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4 In. Through 60 In.

1.24 AMERICAN SOCIETY OF IRRIGATION CONSULTANTS (ASIC)

- A. 1. Grounding and Best Installation Procedures

1.25 IRRIGATION ASSOCIATION (IA):

- A. Technical Resources, Irrigation Best Practices & Standards

1.26 MANUFACTURERS STANDARDIZATION SOCIETY (MSS):

- a. SP70-2011 Cast Iron Gate Valves, Flanged and Thread Ends

1.27 NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA):

- 1) 250-2014 Enclosures for Electrical Equipment (1000 Volts Maximum); Revision 1, May 1986

1.28 NATIONAL ELECTRIC CODE: (LATEST EDITION 2017)

1.29 NORTH AMERICAN SOCIETY FOR TRENCHLESS TECHNOLOGY (NASTT):

- A. Mini-Horizontal Directional Drilling
- B. Horizontal Directional Drilling Good Practices

1.30 PLASTICS PIPE INSTITUTE

- A. Chapter 12 Horizontal Directional

- 1.31 UNIFORM PLUMBING CODE: (LATEST EDITION 2018)
- 1.32 DELIVERY, HANDLING AND STORAGE
- 1.33 MATERIALS SHALL BE DELIVERED TO THE SITE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS FOR SHIPMENT AND PROTECTION OF MATERIALS.
- 1.34 HANDLING OF MATERIALS AS RECOMMENDED BY MANUFACTURER, NO USED MATERIALS WILL BE ACCEPTED.
- 1.35 STORAGE OF ALL MATERIALS IN LOCATIONS DESIGNATED AND APPROVED BY CONTRACTING OFFICER REPRESENTATIVE. FURTHERMORE, ALL SCRAP AND EQUIPMENT TO BE HAULED OFF SITE AND AREA TO BE RETURNED TO ORIGINAL CONDITION AT NO ADDITIONAL COST TO THE OWNER.
- 1.36 RULES AND REGULATIONS
- 1.37 WORK AND MATERIALS WILL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, THE UNIFORM PLUMBING CODE, AND APPLICABLE LAWS AND REGULATIONS OF THE GOVERNING AUTHORITIES.
- 1.38 WHEN THE CONTRACT DOCUMENTS CALL FOR MATERIALS OR CONSTRUCTION OF A BETTER QUALITY OR LARGER SIZE THAN REQUIRED BY THE ABOVE-MENTIONED RULES AND REGULATIONS, PROVIDE THE QUALITY AND SIZE REQUIRED BY THE CONTRACT DOCUMENTS.
- 1.39 IF QUANTITIES ARE PROVIDED EITHER IN THESE SPECIFICATIONS OR ON THE DRAWINGS, THESE QUANTITIES ARE PROVIDED FOR INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ACTUAL QUANTITIES OF ALL MATERIAL, EQUIPMENT, AND SUPPLIES REQUIRED BY THE PROJECT AND TO COMPLETE AND INDEPENDENT ESTIMATE OF QUANTITIES AND WASTAGE.
- 1.40 AVAILABILITY AND USE OF UTILITY SERVICES
- 1.41 THE GOVERNMENT SHALL MAKE NO UTILITIES AVAILABLE TO THE CONTRACTOR FROM EXISTING OUTLETS AND SUPPLIES. ONCE THE SYSTEM IS DEEMED OPERABLE AND APPROVED, AND PRIOR TO THE FINAL INSPECTION, THE CONTRACTOR MAY USE WATER AT NO COST THROUGH THE IRRIGATION SYSTEM FOR ESTABLISHING TURF AND MAINTAINING PLANT MATERIAL. NO OTHER EXPRESSED OR IMPLIED USES OF GOVERNMENT FURNISHED WATER OR POWER EXIST.

- 1.42 THE CONTRACTOR, AT CONTRACTOR'S EXPENSE AND IN A WORKMANLIKE MANNER SATISFACTORY TO THE COR, SHALL INSTALL AND MAINTAIN ALL NECESSARY TEMPORARY CONNECTIONS AND DISTRIBUTION LINES, AND METERS REQUIRED BY THE PUBLIC UTILITIES. BEFORE FINAL ACCEPTANCE OF THE WORK BY THE GOVERNMENT, THE CONTRACTOR SHALL REMOVE ALL THE TEMPORARY CONNECTIONS, DISTRIBUTION LINES, METERS, AND ASSOCIATED APPURTENANCES.
- 1.43 TESTING
- 1.44 NOTIFY THE COR FIVE WORKING DAYS IN ADVANCE OF TESTING.
- 1.45 SUBJECT PIPELINES JOINTED RUBBER GASKETS OR THREADED CONNECTIONS TO A PRESSURE TEST AFTER PARTIAL COMPLETION OF BACKFILL. PIPELINES WITH SOLVENT-WELDED PVC JOINTS WILL BE ALLOWED TO CURE AT LEAST 24 HOURS BEFORE TESTING.
- 1.46 SUBSECTIONS OF MAINLINE PIPE MAY BE TESTED INDEPENDENTLY, SUBJECT TO THE REVIEW OF THE COR.
- 1.47 FURNISH CLEAN, CLEAR WATER, PUMPS, LABOR, FITTINGS, AND EQUIPMENT NECESSARY TO CONDUCT TESTS OR RETESTS.
- 1.48 VOLUMETRIC LEAKAGE TEST – GASKETED MAINLINE PIPE:
- A. Backfill to prevent pipe from moving under pressure. Expose couplings and fittings.
  - B. Purge all air from the pipeline before test.
  - C. Subject mainline pipe to the anticipated operating pressure of 100 PSI for two hours. Maintain constant pressure. The amount of additional water pumped in during the test will not exceed:
    - 1. 0.82 gallons per 100 joints of 3-inch diameter pipe
    - 2. 1.08 gallons per 100 joints of 4-inch diameter pipe
    - 3. 1.62 gallons per 100 joints of 6-inch diameter pipe
      - a. Replace defective pipe, fitting, joint, valve, or appurtenance. Repeat the test until the pipe passes test.
      - b. Cement or caulking to seal leaks is prohibited.
- 1.49 HYDROSTATIC PRESSURE TEST – SOLVENT WELD LATERAL PIPE:
- A. Subject pipe to a hydrostatic pressure equal to the anticipated operating pressure of 90 PSI for 30 minutes.
  - B. Cap all sprinkler risers.
  - C. Backfill to prevent pipe from moving under pressure. Expose couplings and fittings.
  - D. Leakage will be detected by visual inspection. Replace defective pipe, fitting, joint, valve, or appurtenance. Repeat the test until the pipe passes test.

- E. As an alternative to the visual inspection described in Item 4. above, the COR may request that a pressure drop test be performed:
  - 1. Purge air from pipe before test. Attach pressure gauge to a riser in the middle of the lateral. Cap all sprinkler risers.
  - 2. Pressurize the lateral via the remote control valve then turn down flow control handle on remote control valve to seal off lateral.
  - 3. Observe pressure loss on pressure gauge. If pressure loss is greater than 5 PSI, identify reason for pressure loss. Replace defective pipe, fitting, joint, valve, or appurtenance. Repeat test until pressure loss is equal to or less than 5 PSI.
- F. Cement or caulking to seal leaks is prohibited.
- G. After lateral passes test and prior to operational test, install sprinklers and backfill and compact all pipe, fittings, joints, or appurtenance.

**1.50 OPERATIONAL TEST – REMOTE CONTROL VALVES, LATERAL PIPING AND SPRINKLERS:**

- A. Activate each remote control valve in sequence from each controller using the irrigation controller remote control. Manual operation of the valves is not an acceptable method of activation. The RE/COR will visually observe operation, water application patterns, and leakage.
- B. Replace defective remote control valve, solenoid, wiring, or appurtenance to correct operational deficiencies.
- C. Replace, adjust, add, or move water emission devices to correct operational or coverage deficiencies.
- D. Replace defective pipe, fitting, joint, valve, sprinkler, or appurtenance to correct leakage problems. Cement or caulking to seal leaks is prohibited.
- E. Repeat test(s) until each lateral pass all tests. Repeat tests, replace components, and correct deficiencies at no additional cost to the COR.

**1.51 CONTROL SYSTEM GROUNDING – SEE DRAWINGS:**

- A. Test for proper grounding of control system per Paige Electric Co. manufacturer's recommendations. Test results must meet or exceed manufacturer's guidelines for acceptance.
- B. Replace defective wire, grounding rod or appurtenances. Repeat the test until the manufacturer's guidelines are met.
- C. If the test is acceptable, the individual completing the test must document the results of the grounding test on the inside of each controller pedestal door and via a written report. Documentation should include satellite name or number, date of test, and the ohms resistance to ground. The test results should be marked on the inside of each controller pedestal door using a permanent marker.
- D. A written report of the test data listing controller name or number, date of test, name of the individual completing the test, name of the company completing the test and the ohms resistance to ground for each controller must be submitted to the RE/COR.

**1.52 ACCEPTANCE TEST PRIOR TO FINAL INSPECTION:**

- A. Upon completion of construction and prior to Final Inspection, an Acceptance Test must be passed.
- B. Coordinate start of Acceptance Test with RE/COR.

- C. During the Acceptance Test, the irrigation system must be fully operational from the control system. The irrigation system must operate with no faults for 14 consecutive days. If at any time during the 14 day test period, a system fault occurs, the source of the fault must be determined and corrected and the 14 day evaluation period will start again. If a system fault occurs, make repairs within 72 hours of notification from Contracting Officer Representative. Document any faults in the proof of test report listing date of fault, fault, cause of the fault and the corrective action taken.
- D. When the system has operated for 14 days without fault, contact the Contracting Officer Representative to schedule Final Inspection.

#### 1.53 CONSTRUCTION REVIEWS

#### 1.54 THE PURPOSE OF ON-SITE REVIEWS BY THE COR IS TO PERIODICALLY OBSERVE THE WORK IN PROGRESS, THE CONTRACTOR'S INTERPRETATION OF THE CONSTRUCTION DOCUMENTS, AND TO ADDRESS QUESTIONS WITH REGARD TO THE INSTALLATION.

- A. Schedule reviews for irrigation system layout or testing with the COR as required by these specifications.
- B. Impromptu reviews may occur at any time during the project.
- C. A Final Inspection will occur at the completion of the irrigation Acceptance Test. The intent of the Final Inspection is to verify that all installation; testing; maintenance and operation submittals; and project record drawing submittals are completed prior to the start of the Maintenance and Guarantee/Warranty periods.
- D. All costs, including travel expenses and site visits by the Veterans Administration or Veterans Administration representative(s) for additional Inspection(s) that may be required after the Final Inspection due to non-compliance with the Construction Documents are the sole responsibility of the Contractor.

- 1.55 GUARANTEE/WARRANTY AND REPLACEMENT
- 1.56 THE PURPOSE OF THIS GUARANTEE/WARRANTY IS TO ENSURE THAT THE GOVERNMENT RECEIVES IRRIGATION MATERIALS OF PRIME QUALITY, INSTALLED AND MAINTAINED IN A THOROUGH AND CAREFUL MANNER.
- 1.57 GUARANTEE/WARRANTY IRRIGATION MATERIALS, EQUIPMENT, AND WORKMANSHIP AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY RE/COR. FILL AND REPAIR DEPRESSIONS. RESTORE LANDSCAPE, UTILITIES, STRUCTURES OR SITE FEATURES DAMAGED BY THE SETTLEMENT OF IRRIGATION TRENCHES OR EXCAVATIONS. REPAIR DAMAGE TO THE PREMISES CAUSED BY CONSTRUCTION OR A DEFECTIVE ITEM. MAKE REPAIRS WITHIN 24 HOURS OF NOTIFICATION FROM RE/COR.
- 1.58 REPLACE DAMAGED ITEMS WITH IDENTICAL MATERIALS AND METHODS PER CONTRACT DOCUMENTS OR APPLICABLE CODES. MAKE REPLACEMENTS AT NO ADDITIONAL COST TO THE CONTRACT PRICE.
- 1.59 GUARANTEE/WARRANTY APPLIES TO ORIGINALLY INSTALLED MATERIALS AND EQUIPMENT AND REPLACEMENTS MADE DURING THE GUARANTEE/WARRANTY PERIOD.
- 1.60 GENERAL CONSTRUCTION REQUIREMENTS
- 1.61 COORDINATE CONSTRUCTION OF IRRIGATION SYSTEM WITH COR AND CEMETERY STAFF. SEE IRRIGATION PLANS AND INSTALLATION DETAILS FOR REQUIRED COORDINATION EFFORTS RELATED TO THE INSTALLATION OF SPECIFIC IRRIGATION COMPONENTS.
- 1.62 INSTALL IRRIGATION COMPONENTS IN LANDSCAPED AREAS ONLY.
- 1.63 CONSTRUCTION CANNOT PROCEED UNLESS STAKING OF IRRIGATION MAINLINE, ISOLATION GATE VALVE LOCATIONS, QUICK COUPLING VALVE LOCATIONS, REMOTE CONTROL VALVE LOCATIONS, SPRINKLER, AND CONTROLLER LOCATIONS ARE REVIEWED AND ACCEPTED BY THE RE/COR.

## **PART 2 PRODUCTS**

- 2.1 SYSTEM DESCRIPTION
- 2.2 FULL (HEAD TO HEAD PLUS 10-PERCENT) AND COMPLETE COVERAGE OF IRRIGATED AREAS. ADJUST HEAD LOCATIONS AS REQUIRED TO ACHIEVE FULL COVERAGE OF IRRIGATED AREAS.

- 2.3 LAYOUT WORK AS SHOWN ON DRAWINGS. DRAWINGS ARE DIAGRAMMATIC TO THE EXTENT THAT SWING JOINTS, OFFSETS AND FITTINGS ARE NOT SHOWN. DIAGRAMMATIC ALSO REFERS TO THE LOCATION OF THE PIPE AND VALVES, WHICH MAY HAVE BEEN ADJUSTED FOR CLARITY OF DRAWINGS. LINES ARE TO BE COMMON TRENCHED WHEREVER POSSIBLE. PLEASE IRRIGATION HEAD SHOWN ALONG ROADWAYS BETWEEN 12"-18" FROM EDGE OF PAVEMENT, UNLESS OTHERWISE SPECIFIED.
- 2.4 LOCATIONS OF REMOTE CONTROL VALVES IS SCHEMATIC. GROUP REMOTE CONTROL VALVES WHEREVER POSSIBLE AND ALIGN AT SET DIMENSION BACK OF CURB ALONG ROADS AND/OR AT THE PERIMETER OF BURIAL SECTIONS OR LANDSCAPE BEDS. LOCATE REMOTE CONTROL VALVES INDIVIDUALLY OR IN GROUPS OF TWO OR THREE. WHERE EXACT LOCATION FOR VALVES HAVE NOT BEEN SET, OR THERE ARE CONFLICTS, COORDINATE LOCATION WITH RE/COR BEFORE INSTALLATION.
- 2.5 RUN IRRIGATION LINES AND POWER WIRE IN TRENCHES AS INDICATED ON DRAWINGS OR AS TYPICAL FOR INDUSTRY STANDARDS, WHEN NOT INDICATED.
- 2.6 CONNECT NEW SYSTEM TO EXISTING AS SHOWN ON DRAWINGS.
- 2.7 MATERIALS
- 2.8 PROVIDE NEW MATERIALS WITHOUT FLAWS OR DEFECTS.
- 2.9 SUBSTITUTIONS
- 2.10 UNLESS NOTED OTHERWISE, USE SPECIFIED EQUIPMENT. RE/COR MUST APPROVE EQUIPMENT PRIOR TO CONSTRUCTION. THE CONTACTOR THROUGH WRITTEN REQUEST PRIOR TO PURCHASE OR INSTALLATION MAY REQUEST SUBSTITUTIONS TO THE APPROVED EQUALS LISTED HEREIN. CHANGES AND ASSOCIATED DESIGN COSTS TO ACCOMMODATE ALTERNATIVE EQUIPMENT ARE CONTRACTOR'S RESPONSIBILITY.
- 2.11 PIPE SIZES AND PRESSURE RATINGS REFERENCED IN THE CONSTRUCTION DOCUMENTS ARE A MINIMUM AND MAY BE INCREASED AT CONTRACTOR'S OPTION.
- 2.12 SLEEVING
- 2.13 PROVIDE SLEEVE BENEATH HARDSCAPE FOR IRRIGATION PIPE AND WIRING. PROVIDE SEPARATE SLEEVE BENEATH HARDSCAPE FOR WIRING.
- 2.14 USE RIGID, UNPLASTICIZED POLYVINYL CHLORIDE (PVC) 1120, 1220 NATIONAL SANITATION FOUNDATION (NSF) APPROVED PIPE, EXTRUDED FROM MATERIAL MEETING THE REQUIREMENTS OF CELL CLASSIFICATION 12454-A OR 12454-B, ASTM STANDARD D1784, WITH AN INTEGRAL BELLED END.
- 2.15 USE C900 DR18 CLASS 235 PVC CONFORMING TO DIMENSIONS AND TOLERANCES ESTABLISHED BY ASTM STANDARD D2241 FOR MAINLINE PIPE, LATERAL PIPE AND WIRING SLEEVES.

- 2.16 SIZE SLEEVES ARE AS SHOWN ON THE DRAWINGS. WIRING BUNDLE CONTAINED IN THE SLEEVE SHOULD NOT EXCEED 40% OF THE AVAILABLE AREA WITHIN THE SLEEVE PER NEC RECOMMENDATIONS.
- 2.17 PIPE AND FITTINGS
- 2.18 MAINLINE PIPE AND FITTINGS:
- A. Use rigid, unplasticized polyvinyl chloride (PVC) 1120, 1220 National Sanitation Foundation (NSF) approved pipe, extruded from material meeting the requirements of Cell Classification 12454-A or 12454-B, ASTM Standard D1784, with an integral belled end.
  - B. Use Class 200, SDR-21, rated at 200 PSI, conforming to dimensions and tolerances established by ASTM Standard D2241 for pipe 3-inches and larger. Use SCH 40 PVC pipe for mainline 2.5-inches and smaller with PVC SCH 40 solvent weld fittings.
  - C. Use rubber-gasketed pipe equipped with factory installed reinforced gaskets for mainline pipe. Gasketed pipe joints must conform to the "Laboratory Qualifying Tests" section of ASTM D3139. Gasket material must conform to ASTM F477. Use push-on rubber-gasketed ductile iron fittings conforming to ASTM A536 and ASTM F477. Use lubricant approved by the pipe manufacturer and meets NSF standard 14 and 61. Acceptable manufacturer for ductile iron fittings is Harco Leemco or pre-approved equal.
  - D. Provide joint restraint harness at valves, changes of direction and as recommended by the manufacturer. For joint restraints on PVC pipe applications, use restraint components constructed of 60-42-10 ductile iron conforming to ASTM A536 and ASTM F1674.
  - E. Mainline pipe within sleeves: Provide restrained casing spacers for gasketed joints that occur within sleeve and as necessary along pipe length. Acceptable manufacturer for casing spacers is Ford Meter Box Company or approved equal.
- 2.19 LATERAL PIPE AND FITTINGS:
- A. Fittings, use rigid, unplasticized polyvinyl chloride (PVC) 1120, 1220 National Sanitation Foundation (NSF) approved pipe, extruded from material meeting the requirements of Cell Classification 12454-A or 12454-B, ASTM Standard D1784, with an integral belled end suitable for solvent welding.
  - B. Use Class 200 PVC SDR-21, rated at 200 PSI, pipe conforming to dimensions and tolerances established by ASTM Standard D2241.
  - C. Use solvent weld pipe for lateral pipe. Use Schedule 40, Type 1, PVC solvent weld fittings conforming to ASTM Standards D2466 and D1784 for PVC pipe. Use primer approved by pipe manufacturer. Solvent cement to conform to ASTM Standard D2564, of type approved by pipe manufacturer.
- 2.20 SPECIALIZED PIPE AND FITTINGS:
- A. Use mechanical joints conforming to ANSI A 21.10 (AWWA C110) and ANSI A21.11 (AWWA C111) or flanged fittings conforming to ANSI/AWWA C110 and ANSI B16.1 (125#).
  - B. Joint sealant: Use only teflon-type tape or teflon based paste pipe joint sealant on plastic threads. Use nonhardening, nontoxic pipe joint sealant formulated for use on water-carrying pipes on metal threaded connections.

**2.21 JOINT RESTRAINT HARNESS (AS PER HARCO/LEEMCO):**

- A. Use a joint restraint harness as presented in the installation details and wherever joints are not positively restrained by flanged fittings, threaded fittings and/or thrust blocks.
- B. Use a joint restraint harness with all ductile iron fittings 6-inch and larger, transition fittings between metal and PVC pipe, where weak trench banks do not allow the use of thrust blocks or where extra support is required to retain a fitting or joint.
- C. Use a joint restraint harness on all mainline gate valve assemblies as necessary
- D. Provide joint restraint harness on gasketed pipe at valves and changes of pipe direction. Restrain length of pipe as presented in the installation details and as recommended by the joint restraint manufacturer.
- E. Use restraint harness consisting of grip rings, restraint rods, bolts and nuts. Use ductile iron grip rings conforming to ASTM A536 and F1674 and meeting the requirements of UNI-B-13-94. Grip ring serrations to be machined. Cast serrations are not permitted. Restraint rods, bolts, and nuts to be stainless steel. Acceptable manufacturer and model are HARCO 820000 Series, Ford Meter Box Uni-Flange Series or approved equal.

**2.22 DETECTABLE WARNING TAPE: USE 2-INCH WIDE DETECTABLE MARKING TAPE WITH A MINIMUM 5.0 MILL THICKNESS. TAPE TO HAVE A MINIMUM 0.35 MILL SOLID ALUMINUM FOIL CORE. TAPE TO BE COLOR CODED TO MEET APWA STANDARD FOR IDENTIFICATION OF BURIED UTILITIES AND BE LABELED "CAUTION BUIRED WATER LINE BELOW".**

**2.23 MAINLINE COMPONENTS**

**2.24 ISOLATION GATE VALVE ASSEMBLY:**

- A. As presented in the installation details.
- B. Iron body, bronze mounted, double disc with parallel or inclined seats, non-rising stem turning clockwise to close, 200 PSI minimum working pressure and mechanical joint ends meeting AWWA Standard C509. Acceptable manufacturers are Clow, Harco, NIBCO or approved equal.
- C. Valve Box: Use plastic (ABS) 10-inch round valve box with black lid. Acceptable manufacturer is Carson, Maclean Highline (Pentek), Rain Bird or approved equal.
- D. Filter Fabric: Use a spunbond polyester 3.5 oz. per square yard landscape fabric.

**2.25 QUICK COUPLING VALVE ASSEMBLY:**

- A. As presented in the installation details.
- B. Brass construction, 1-inch nominal size, operating pressure 5-125 PSI with purple locking cover. Acceptable manufacturer and model is Rain Bird 5RC or pre-approved equal.
- C. Swing Joint: Use pre-manufactured triple swing joint. Acceptable manufacturer is Lasco or approved equal.
- D. Quick Coupler Anchor: Use pre-manufactured bolt on anchor or swing joint integrated anchor. Acceptable manufacturers are Harco, Lasco or approved equal.
- E. Valve Box: Use plastic 10-inch round valve box with black lid. Acceptable manufacturer is Rain Bird or approved equal.

F. Filter Fabric: Use a spunbond polyester 3.5 oz. per square yard landscape fabric.

## 2.26 SPRINKLER IRRIGATION COMPONENTS

### 2.27 REMOTE CONTROL VALVE ASSEMBLY:

- A. As presented in the installation details.
- B. Remote Control Valve: Use a normally closed 24 VAC 50/60 cycle solenoid actuated globe pattern design. The valve pressure rating will not be less than 200 PSI. The valve body and bonnet will be constructed of heavy-duty glass-filled UV resistant nylon and have stainless steel studs and flange nuts; diaphragm will be of nylon reinforced nitrile rubber. The valve will have both internal and external manual open/close control (internal and external bleed) to manually open and close the valve without electrically energizing the solenoid. The valves internal bleed will prevent flooding of the valve box. The valve will house a fully encapsulated, one-piece solenoid. The solenoid will have a captured plunger with a removable retainer for easy servicing and a leverage handle for easy turning. Use 24 VAC 50/60 Hz solenoid that is compatible with a low voltage control wire 2 wire decoder control system. Valve must have a flow control stem for accurate manual regulation and/or shutoff of outlet flow. The valve must open or close in less than 1 minute at 200 PSI and less than 30 seconds at 20 PSI. The valve will have a self-cleaning stainless steel screen designed for use in dirty water applications. Provide for all internal parts to be removable from the top of the valve without disturbing the valve installation. Valve must have a pressure regulation module to regulate outlet pressure as specified. Acceptable manufacture and model is Toro P220-26-0.
- C. Shut-off Valve: Use an angle valve AWWA C135 rated, ductile iron epoxy coated with stainless steel valve mechanism and restraint system. Acceptable manufacturer and model is Leemco LV212/218 lateral isolation valve or pre-approved equal.
- D. PVC Union: Use a Schedule 80 threaded union with O-ring seal. Acceptable manufacturer is Lasco or approved equal.
- E. Valve Box: Use plastic (ABS) standard valve box with black lid. Acceptable manufacturer is Carson or approved equal.
- F. Filter Fabric: Use a spunbond polyester 3.5 oz. per square yard landscape fabric.
- G. Install assembly over gravel sump as presented in the installation details.
- H. Wire connectors: Use Rain Bird, 3M DBR/Y-6 (or as per manufacturer latest bulletin).
  - a. Use standard Christy I.D. tags with hot-stamped black letters on a yellow background.

### 2.28 POP-UP ROTOR SPRINKLER ASSEMBLY:

- A. As presented in the installation details.
- B. Rotary Sprinkler: Use a gear drive sprinkler capable of covering the radius with the discharge rate at the pressure as presented on the drawings. Furnish part circle sprinklers with an adjustable arc of 20- to 340-degrees, and full circle sprinklers with a nonadjustable arc. Furnish sprinkler with stainless steel pop-down spring. Furnish sprinkler with stainless steel risers, integral check valve in base of the case capable of holding back 10 feet (304.8 cm) of elevation. Minimum pop-up height is 4-inches. Acceptable manufacturer and model is Rain Bird 5004+ SAM-R.

2.29 POP-UP SPRAY SPRINKLER ASSEMBLY:

- A. As presented in the installation details.
- B. Spray Sprinkler: Use a spray sprinkler capable of covering the radius with the discharge rate at the pressure as presented on the drawings. Furnish sprinkler with pressure reducing module in the riser stem and integral check valve in base of the case capable of holding back a minimum of 8 feet (243.84 cm) of elevation. Minimum pop-up height is 4-inches. Acceptable manufacturer and model is Rain Bird with precision MPR rotor nozzles or approved equal
- C. Low Density Polyethylene Hose (Swing Pipe): Use pipe specifically intended for use as flexible swing joint. Use spiral barb fittings supplied by the same manufacturer as hose. Acceptable manufacturer Rain Bird or pre-approved equal.
- D. Use 12-inch pop-up height for bubblers in columbarium.

2.30 CONTROL SYSTEM COMPONENTS

2.31 CONTROL UNITS: EXISTING

- A. Connect and program to existing field controller.

2.32 CONTROL WIRE:

- A. Cable: Paige Electric #12 maxi wire and American Wire Gauge (AWG) #14 solid copper Type UF or PE cable to EV's, UL listed for direct underground burial from controller unit to decoder at each remote control valve.
- B. Color: Wire color must be continuous over its entire length.
- C. Splices: Use Rain Bird or 3M DBR/Y-6 splices as recommended by control system manufacturer.
- D. Valve Box: Use plastic standard rectangular valve with black lid. Acceptable manufacturer is Rain Bird or approved equal.
- E. Electrical Conduit: Use PVC Schedule 40 conduit conforming to dimensions and tolerances established by ASTM Standard D-1785. Use Schedule 40, Type 1, PVC solvent weld sweep fittings for PVC conduit conforming to ASTM Standards D2466 and D1784 for buried installations
- F. Warning tape: Use non-detectable marking tape 4.0 mil (0.1016 mm) thickness for mainline, linear low-density polyethylene, specifically formulated for extended use underground. The legend shall continually repeat a minimum of every three feet. Tape tensile strength shall be in accordance with ASTM D882 and not be less than 4100 MD and 3650 TD. Elongation properties shall be in accordance with ASTM D882 and be greater than 550% at break point. Tape flexibility shall be in accordance with ASTM D671 and shall remain pliable. Tape composition shall be of virgin LLDPE/LDPE. The tape color shall be red. The legend shall read "Caution Electric Line Buried Below". The tape width shall be 3-inch. Manufacturer T. Christy Enterprises, or approved equal.

2.33 OTHER COMPONENTS

2.34 SPARE PARTS AND OTHER MATERIALS: PROVIDE SPARE PARTS AND OTHER MATERIALS AS REQUESTED BY RE/COR OR EQUIPMENT SHOWN ON THE DRAWINGS OR INSTALLATION DETAILS THAT ARE PART OF THE IRRIGATION SYSTEM, EVEN THOUGH SUCH ITEMS MAY NOT HAVE BEEN REFERENCED IN THESE SPECIFICATIONS.

**PART 3 EXECUTION**

3.1 PREPARATION

- A. Examine and verify substrate suitability for product installation.
- B. Protect existing construction and completed work from damage.
- C. Remove existing sprinkler heads and valves as per demo plan.
  - 1. Remove and salvage existing heads and valves; return to cemetery staff and/or RE/COR.
- D. Dispose of or abandon lateral pipe per demo plan.

3.2 INSPECTIONS AND REVIEWS

3.3 SITE INSPECTIONS:

- A. Verify construction site conditions and note irregularities affecting work of this section. Report irregularities to the RE/COR prior to beginning work.
- B. Beginning work of this section implies acceptance of existing conditions.

3.4 UTILITY LOCATES: LOCAL ("CALL BEFORE YOU DIG"):

- A. Arrange for and coordinate with local authorities the location of all underground utilities, and with cemetery maintenance personnel.
- B. Repair any underground utilities damaged during construction. Make repairs at no additional cost to the contract price.

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- 3.5 IRRIGATION SYSTEM LAYOUT REVIEW: IRRIGATION SYSTEM LAYOUT REVIEW WILL OCCUR AFTER THE STAKING HAS BEEN COMPLETED. NOTIFY THE RE/COR ONE WEEK IN ADVANCE OF REVIEW.
- 3.6 LAYOUT OF WORK
- 3.7 STAKE OUT THE IRRIGATION SYSTEM. ITEMS STAKED INCLUDE: IRRIGATION MAINLINE PIPE, ISOLATION GATE VALVE ASSEMBLIES, QUICK COUPLING VALVES, REMOTE CONTROL VALVES, LATERAL PIPING, AND SPRINKLERS.
- 3.8 IF STAKED IRRIGATION COMPONENTS CONFLICT WITH UTILITIES OR OTHER COMPONENTS OR SITE FEATURES, COORDINATE REROUTING OF COMPONENTS WITH RE/COR.
- 3.9 GENERAL INSTALLATION
- 3.10 EXCAVATE TO PERMIT THE PIPES TO BE LAID AT THE INTENDED ELEVATIONS AND TO PERMIT WORKSPACE FOR INSTALLING CONNECTIONS AND FITTINGS.
- 3.11 EXISTING SURVEY MARKERS:
- A. Protect markers during construction.
  - B. If a survey marker is disturbed during construction, the Contractor is responsible for replacing the marker. The Contractor must hire a licensed surveyor to resurvey the location of the marker and replace it.
- 3.12 EXISTING MONUMENTATION AND GRAVESITES: AT NO TIME SHALL SOIL BE ALLOWED TO PILE ON OR AROUND THE EXISTING GRAVESITES AND MONUMENTATION. USE A TARP WHEN EXCAVATION TRENCHES IN BURIAL SECTIONS. TRENCHES IN BURIAL SECTIONS MAY NOT BE OPEN LONGER THAN 24 HOURS. BACKFILL MATERIAL SPOILS MUST BE REMOVED IMMEDIATELY AND NOT ALLOWED TO REMAIN IN BURIAL SECTIONS AFTER BACKFILL IS COMPLETE. SOD TO BE INSTALLED OVER ALL TRENCHES WITHIN 4 DAYS OF TRENCH BACKFILL.
- 3.13 EXCAVATION EQUIPMENT – ALL EQUIPMENT USED FOR TRENCHING, PIPE PULLING AND DIRECTIONAL BORING MUST BE EQUIPPED WITH TURF TIRES.
- 3.14 INSTALLATION METHODOLOGY:
- A. Mainline:
    - 1. Open trench to install PVC mainline pipe and isolation.
    - 2. Mainline pipe has been routed to avoid conflicts with existing trees. Do not install mainline pipe within drip line of any existing tree. Immediately contact COR if a conflict between mainline pipe routing and an existing field condition is identified.
  - B. Lateral Pipe in Burial Sections:
    - 1. Open trench to install PVC lateral pipe.
  - C. Lateral Pipe in Non-Burial Areas:

1. Open trench to install PVC lateral pipe.
2. As an alternative to trenching, a vibratory plow device specifically manufactured for pipe pulling may be used to install lateral pipe in non-burial areas. Maintain minimum burial depth. Roll trench after pulling pipe.

**3.15 MINIMUM COVER:**

- A. 36-inches over irrigation mainline pipe in landscaped areas. (distance from top of pipe to finish grade)
- B. 22- to 28-inches over irrigation lateral pipe to sprinklers in pre-placed crypt field. Lateral pipe must be installed 6-inches below crypt lid. (distance from top of pipe to finish grade)
- C. 26-inches over irrigation lateral pipe to sprinklers in in-ground cremain burial sections. (distance from top of pipe to finish grade)
- D. 18-inches over irrigation lateral pipe to sprinklers in non-burial areas. (distance from top of pipe to finish grade)
- E. 24-inches over two-wire cable when not in common trench with mainline or lateral piping. Install cable in PVC SCH 40 conduit. (distance from top of control wire to finish grade)
- F. 6-inches vertical separation between mainline pipe and lateral pipe installed in a common trench.
- G. 6-inch minimum horizontal separation between pipes and wiring in a common trench. Tuck wiring underneath and to one side of the mainline.
- H. Install sleeves at depth to maintain specified depth of pipe or wire routed through sleeve.

**3.16 INSTALL AND MAINTAIN SAFETY FENCING AROUND ALL UNATTENDED EXCAVATION. PLACE SAFETY SIGNS ADJACENT TO CONSTRUCTION AREA ROADWAY TO THE SATISFACTION OF THE COR.**

**3.17 ALL EXCAVATIONS MUST BE BACKFILLED BY THE END OF EACH WORKDAY. DO NOT LEAVE ANY OPEN TRENCHES OVERNIGHT, ON WEEKENDS OR ON HOLIDAYS.**

**3.18 IF TRENCHING OPERATION RESTRICTS ACCESS TO A BURIAL SECTION, PROVIDE PLYWOOD AND SAFETY FENCING ACROSS OPEN TRENCH TO ALLOW ACCESS TO BURIAL SECTION. PROVIDE ACCESS TO THE SATISFACTION OF THE RE/COR.**

**3.19 EXCAVATED MATERIAL IS GENERALLY SATISFACTORY FOR BACKFILL. BACKFILL WILL BE FREE FROM RUBBISH, VEGETABLE MATTER, AND STONES LARGER THAN 2-INCHES IN MAXIMUM DIMENSION. REMOVE MATERIAL NOT SUITABLE FOR BACKFILL. BACKFILL PLACED NEXT TO PIPE WILL BE FREE OF SHARP OBJECTS THAT MAY DAMAGE THE PIPE.**

**3.20 ENCLOSE PIPE AND WIRING BENEATH ROADWAYS, WALKS, CURBS, ETC. IN SLEEVES. BACKFILL SLEEVES IN THE FOLLOWING MANNER:**

- A. Backfill trench using excavated material in 6-inch layers. Minimum compaction of backfill for sleeves shall be a minimum 95% Standard Proctor Density, ASTM D698. Backfill to bottom of road base under roads or to finish grade under walks and curbs.

- 3.21 BACKFILL MAINLINE, LATERAL PIPE AND WIRING IN TURF AREAS IN THE FOLLOWING MANNER:
- A. Backfill the trench and directional boring excavations by depositing the backfill material equally on both sides of the pipe or wire in 6-inch layers and compacting to the density of surrounding soil.
- 3.22 DRESS BACKFILLED AREAS TO ORIGINAL GRADE. REMOVE EXCESS BACKFILL TO ON-SITE LOCATION AS DIRECTED BY THE COR.
- 3.23 RESOD ALL TRENCHES AND AREAS DISTURBED BY CONSTRUCTION OF THE IRRIGATION SYSTEM. SEE INSTALLATION DETAILS INSTALLATION PROCEDURE DESCRIPTION.
- 3.24 WHERE UTILITIES CONFLICT WITH IRRIGATION TRENCHING AND PIPE WORK, CONTACT THE COR FOR TRENCH DEPTH ADJUSTMENTS.
- 3.25 HORIZONTAL BORING:
- A. Use horizontal directional drilling techniques as recommended by NASTT, ASTM F1962, ASCE and in accordance with accepted industry practices.
  - B. Locate and stake bore pit locations. Contact COR to confirm that bore pit locations are acceptable.
  - C. Dispose of excess directional boring slurry legally off-site.
  - D. Backfill bore pits to original grade. Backfill by depositing the backfill material in 6-inch layers and compacting to the density of surrounding soil. Remove excess backfill to on-site location as direction by the COR.
  - E. Resod bore pit if located in existing turf area.
- 3.26 SLEEVING
- 3.27 INSTALL SLEEVING AT A DEPTH THAT PERMITS THE ENCASED PIPE OR WIRING TO REMAIN AT THE SPECIFIED BURIAL DEPTH.
- 3.28 EXTEND SLEEVE ENDS A MINIMUM OF 12-INCHES BEYOND THE EDGE OF THE PAVED SURFACE. COVER PIPE ENDS AND MARK EDGE OF PAVEMENT WITH A CHISEL OR SAW CUT.
- 3.29 VERIFY THAT SLEEVE SIZING IS ADEQUATE PRIOR TO INSTALLATION. NOTE THAT SLEEVES REQUIRED FOR PIPE ARE A MINIMUM OF TWICE THE DIAMETER OF THE PIPE.
- 3.30 ASSEMBLING PIPE AND FITTINGS
- 3.31 GENERAL:
- A. Keep pipe free from dirt and pipe scale. Cut pipe ends square and debur. Clean pipe ends.
  - B. Keep ends of assembled pipe capped. Remove caps only when necessary to continue assembly.

- C. Trenches may be curved to change direction or avoid obstructions within the limits of the curvature of the pipe. Minimum radius of curvature and offset per 20-foot length of mainline and lateral pipe by pipe size are shown in the following table. All curvature results from the bending of the pipe lengths. No deflection will be allowed at a pipe joint.

Size	Radius	Offset Per 20' Length
1 ½"	25'	7'-8"
2"	25'	7'-8"
2 ½"	100'	1'-11"
3"	100'	1'-11"
4"	100'	1'-11"
6"	150'	1'-4"

**3.32 MAINLINE PIPE AND FITTINGS:**

**A. PVC Rubber-Gasketed Pipe:**

1. Use pipe lubricant. Join pipe in the manner recommended by manufacturer and in accordance with accepted industry practices.
2. Ductile iron fittings will not be struck with a metallic tool. Cushion blows with a wood block or similar shock absorber.

**3.33 LATERAL PIPE AND FITTINGS:**

**A. PVC Solvent Weld Pipe:**

1. Use primer and solvent cement. Join pipe in manner recommended by manufacturer and in accordance with accepted industry practices.
2. Cure for a minimum of 30 minutes before handling and 24 hours before pressurizing or installing with vibratory plow – or as per manufacturer recommendations.
3. Snake pipe from side to side within trench.

**B. Fittings: D.I. mainline and Sch 80 glued laterals use of cross type fittings is not permitted.**

**C. Lateral Pipe and swing joints installed in Pre-Placed Crypt sections:**

1. Lateral pipe and fittings may be installed prior to backfill over pre-placed crypts to ensure correct placement and depth.
2. Contractor responsible for locating the correct tee or el fitting locations in pre-placed crypt areas by using GPS survey grade equipment or installing the pipe and measuring the distance from the crypt ends prior to backfill. All tee locations to be staked and approved by COR.
3. Cap all swing joint ends prior to backfill.
4. Mark swing joint locations prior to backfill and final grade using 30-inch length of 1-inch PVC pipe or other approved method. Submit alternate method with submittal review if applicable. Note that grid markers are typically set after the final grade and will typically not be available for reference in location sprinkler locations in pre placed crypt sections.

**3.34 SPECIALIZED PIPE AND FITTINGS:**

**A. Mechanical joint connections: Install fittings, fasteners and gaskets in manner recommended by manufacturer and in accordance with accepted industry practices.**

**B. PVC Threaded Connections:**

1. Use only factory-formed threads. Field-cut threads are not permitted.
2. Apply thread sealant in manner recommended by component, pipe and sealant manufacturers and in accordance with accepted industry practices.
3. Use plastic components with male threads and metal components with female threads where connection is plastic-to-metal.

**3.35 JOINT RESTRAINT HARNESS:**

- A. Restrain length of pipe at valves and changes in pipe direction as presented in the installation details and per the joint restraint manufacturer's printed instructions.
- B. Install harness in the manner recommended by the manufacturer and in accordance with accepted industry practices.
- C. Use restrained casing spacers for gasketed pipe routed through sleeving. Install harness in the manner recommended by the manufacturer and in accordance with accepted industry practices. Install self-restraining casing spacers at all gasketed pipe bell joints and every 10-feet along the gasketed mainline pipe installed through sleeving. Provide correct number and type of restraints per manufacturer's printed instructions.

**3.36 DETECTABLE WARNING TAPE:**

- A. Install warning tape per manufacturer's printed instructions above 6-inches above all mainline.

**3.37 INSTALLATION OF MAINLINE COMPONENTS**

**3.38 ISOLATION GATE VALVE ASSEMBLY:**

- A. As presented in the installation details, per manufacturer's printed instructions.
- B. Install where indicated in the irrigation plans.
- C. Brand "GV" in 2-inch high by 3/16-inch deep letters on valve box lid.

**3.39 AIR/VACUUM RELIEF VALVE ASSEMBLY:**

- A. As presented in the installation details, per manufacturer's printed instructions.
- B. Install where indicated in the irrigation plans.
- C. Paint "AV" in 2-inch high letters on valve box lid. Use a stencil and Krylon Professional Striping spray paint.

**3.40 QUICK COUPLING VALVE ASSEMBLY:**

- A. As presented in the installation details, per manufacturer's printed instructions.
- B. Install where indicated in the irrigation plans.
- C. Brand "QC" in 2-inch high by 3/16-inch deep letters on valve box lid.

**3.41 INSTALLATION OF SPRINKLER IRRIGATION COMPONENTS**

**3.42 MAINLINE PIPE FLUSHING:**

- A. Thoroughly flush mainline before installation of Remote Control Valve Assemblies.

- B. Identify service tee(s) to be used for mainline flushing. Plug service tees not being used for flushing.
- C. Connect 2-inch pipe to flushing service tee(s). Use pipe to direct water away from trench and into drainage swale, curb section or storm sewer, i.e. to an area that will direct the water away from the work area. Direct water so that it does not disrupt the cemetery operations or erode site.
- D. Use a volume of water such that the velocity in the largest pipe flushing to this point is a minimum of 3 FPS.
- E. Multiple points may be flushed simultaneously.
- F. Flush for a minimum of 20 minutes. Continue flushing until the water is clear of any and all debris.
- G. RE/COR will review the flushing operation and clarity of water before stopping the flushing operation.
- H. Disconnect pipe from service tee(s) and install remote control valve(s).

3.43 REMOTE CONTROL VALVE ASSEMBLY:

- A. Install per manufacturer's printed instructions where indicated on the drawings.
- B. Adjust valve to regulate the downstream operating pressure to 70 PSI for pop-up rotary sprinklers and 35 PSI for spray sprinklers.
- C. Wire connectors and waterproof sealant will be used to connect valve wiring to solenoid wires. Install connectors and sealant per manufacturer's printed instructions.
- D. Install only one remote control valve to a valve box. Locate valve box 5-feet from and align square with nearby edges of paved areas. Group valve boxes together where possible equidistant from the adjacent valve boxes.
- E. Attach ID tag with controller station number to control wiring at solenoid.
- F. Paint controller and station number in 2-inch high letters on valve box lid. Use a stencil and Krylon Professional Striping spray paint.

3.44 POP-UP ROTOR SPRINKLER ASSEMBLY:

- A. Thoroughly flush lateral pipe before installing sprinkler assembly. Water must be clear of any debris before flushing operation stops.
- B. Install per the installation details at locations shown on the drawings.
- C. Install sprinklers perpendicular to the finish grade.
- D. Install swing joint with the appropriate angle between the lateral pipe and the lay length nipple per the installation details.
- E. Supply appropriate nozzle or adjust arc of coverage of each sprinkler for best performance.
- F. Adjust the radius of throw of each sprinkler for best performance.
- G. Install 18-inch width of sod around all sprinkler blocks in areas to be seeded.

3.45 POP-UP SPRAY SPRINKLER ASSEMBLY:

- A. Thoroughly flush lateral pipe before installing sprinkler assembly. Water must be clear of any debris before flushing operation stops.

- B. Install per the installation details at locations shown on the drawings.
- C. Install spray sprinklers 3-inches from adjacent edges of paved areas, walls or fences.
- D. Install sprinklers perpendicular to the finish grade.
- E. Install swing joint per manufacturer's printed instructions.
- F. Supply appropriate nozzle or bubbler. Adjust arc of coverage of each sprinkler for best performance.
- G. Adjust the radius of throw of each sprinkler for best performance.

#### 3.46 INSTALLATION OF CONTROL SYSTEM COMPONENTS

##### 3.47 CONTROLLER UNIT:

- A. Program new zones as directed in the Maintenance and Operation Instructions – see plan and details.

##### 3.48 COMMUNICATION WIRE:

- A. Route wire in mainline trench. Bundle where two or more are in the same trench. Bundle with pipe wrapping tape spaced at 10-foot intervals.
- B. Provide a 24-inch excess length of cable in an 8-inch diameter loop at each 90 degree change of direction, at both ends of sleeves, and at 100-foot intervals along continuous runs of wiring. Do not tie loop. Coil 24-inch length of cable within each remote control valve box.
- C. If a cable must be spliced, make splice with wire connectors and waterproof sealant installed per the manufacturer's instructions. Locate splice in turf areas using a valve box that contains an irrigation valve assembly, or in a separate valve box. Use same procedure for connection to valves as for in-line splices. If a separate valve box is used for wire splices, brand "WS" in 2-inch high by 3/16-inch deep letters on valve box lid.
- D. Unless noted on plans, install cable parallel with and below mainline pipe.
- E. Encase cable in electrical conduit.
- F. Protect wire not installed with mainline pipe with a continuous run of warning tape placed in the backfill 6-inches above the wiring.

#### 3.49 INSTALLATION OF OTHER COMPONENTS

##### 3.50 TOOLS AND SPARE PARTS:

- A. Prior to the Review at completion of construction, provide operating keys, servicing tools, spare parts, and any other items indicated on the drawings.

3.51 OTHER MATERIALS: INSTALL OTHER MATERIALS OR EQUIPMENT SHOWN ON THE DRAWINGS OR INSTALLATION DETAILS THAT ARE PART OF THE IRRIGATION SYSTEM, EVEN THOUGH SUCH ITEMS MAY NOT HAVE BEEN REFERENCED IN THESE SPECIFICATIONS.

3.52 MAINTENANCE AND OPERATION INSTRUCTIONS

3.53 IRRIGATION SYSTEM MAINTENANCE:

- A. Prior to Final Inspection, provide verbal instructions to operating personnel on proper operation and maintenance of the expanded irrigation system. Training session should cover maintaining, operating and repairing the new irrigation system components.
- B. Instructions for the provided irrigation system in the form of manuals as follows:
  - 1. Catalog cut sheets for valves, sprinklers, pipe and fittings, wire and wire connectors, ID tags, shop drawings, and all other irrigation equipment shown or described on the drawings and within these specifications.
  - 2. Manufacturer's Operation and Maintenance manuals.
  - 3. Manufacturer's Technical Service Bulletins.
  - 4. Manufacturer's Warranty Documentation.
  - 5. Recommended routine maintenance inspections for weekly, monthly and annual inspections, recommended actions for the inspections, recommended method for recording the findings of the inspections and proper winterization techniques.
  - 6. Listing of technical support contacts.
- C. Operation and maintenance submittal package must be complete prior to being reviewed by the COR. Incomplete submittals will be returned without review.

3.54 CONTROL SYSTEM PROGRAMMING:

- A. Program controller for new plant material. Verify operation of program with operating personnel and RE/COR.

3.55 COLORED CONTROLLER CHARTS:

- A. Prepare a map diagram showing location of all valves, piping, and route of the control wires. Identify all valves as to size, station, number and type of irrigation. "As-built" drawings must be approved before charts are prepared. Map diagram can be constructed using AutoCAD or PDF computer software. Adjacent lateral pipes to be of different color, use four different colors for lateral pipe.
- B. Include legend listing components used for the controller. Include a separate sprinkler table listing station number, sprinkler manufacturer and model, zone capacity, and number of sprinklers on the zone.
- C. Provide one colored full sized controller chart for each irrigation plan sheet showing the area covered by the controller. Provide four 11"x17" reduced colored charts of the actual "as-built" drawing. Chart must be readable at the reduced size.
- D. Laminate one 11"x17" sized colored chart and place laminated chart in lid of each controller.

3.56 PROJECT RECORD DRAWINGS

3.57 THE CONTRACTOR IS RESPONSIBLE FOR DOCUMENTING INSTALLED SYSTEM PER SECTION 1.4 SUBMITTALS AND ALL CHANGES TO THE DESIGN.

3.58 MAINTENANCE

- A. B. During the one (1) year guarantee period, the Contractor shall drain/blow down the existing and new irrigation system and winterize each fall for the winter and shall put the irrigation system back into operation each spring at no additional cost.

3.59 CLEANUP

3.60 UPON COMPLETION OF WORK, REMOVE FROM THE SITE ALL MACHINERY, TOOLS, EXCESS MATERIALS, AND RUBBISH. RESTORE SITE TO NORMAL OR ORIGINAL CONDITION.

**--- E N D ---**

**END OF SECTION**