PROJECT MANUAL

PROJECT NAME:

IDALS Hoover 5th Floor Renovation

PROJECT ADDRESS:

1305 East Walnut Street Des Moines, Iowa 50319

PROJECT DATE: January 21, 2025

OWNER:

Iowa Department of Administrative Services 109 Southeast 13th Street Des Moines, Iowa 50319

OWNER PROJECT NUMBER: 9426.00

OWNER REQUEST FOR BID NUMBER: RFB 942600-01

CONSTRUCTION MANAGER:

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

CONSTRUCTION MANAGER PROJECT NUMBER: 24-041

ARCHITECT:

ISG 217 E 2nd St, Suite 110 Des Moines, IA 50309

ARCHITECT PROJECT NUMBER: 24-31954



Department of Administrative Services





SEALS PAGE

I hereby certify that the	portion of this technical submis	sion described	below was prepared by me or
under my direct superv	ision and responsible charge.		STESSION CONTRACTOR
Discipline:	Architecture	Stamp:	SP PROFESSION AV PRC
Company Name:	ISG, Inc		
Address: 217 East 2nd Stree	t, Suite 110, Des Moines, IA 50309		Cinco Schooler
Telephone:	515-243-9143		Willing AWO
Name:	Erica M. Schaefer	Responsibili	ty: Divisions 03 - 14
License#:	07376		

I hereby certify that the portion of this technical submission described below was prepared by n under my direct supervision and responsible charge.							
Discipline:	Structural	Stamp:					
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Telephone:	515-243-9143	AWO/WWWWWWWWWWWWWWWWWW					
Name:	Brett Walker	Responsibility: <u>Divisions 03 - 06</u>					
License#:	P28162						

I hereby certify that the under my direct superv	e portion of this technical submis vision and responsible charge.	sion descr	ibed below was prepared by me or
Discipline:	Mechanical / Plumbing	Stamp:	ADAM
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Telephone:	515-243-9143		With INNER STATE
Name:	Adam W. Puls	Respon	sibility: Divisions 21 - 23
License#:	P23206		

I hereby certify that the under my direct superv	ubmission described below was prepared by me or rge.	
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Name:	Royal D. Streed	Responsibility: <u>Divisions 26 - 28</u>
License#:	P26593	

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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 <u>IMPACS Electronic</u> <u>Procurement System</u> 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

NOTICE TO BIDDERS

RFB #942600-01

The Iowa Department of Administrative Services will be receiving bids for renovations to the 5th floor of the Hoover building in Des Moines, Iowa Zip 50319.

The Iowa Department of Administrative Services anticipates construction to begin on February 26, 2025 and end on June 19, 2025.

Bids must be received no later than **2:00 pm, Tuesday, February 11, 2025**. Late bids will not be considered. Bids shall be submitted on <u>IMPACS Electronic Procurement System</u>. 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 meet.google.com/grx-cuqg-wej and teleconference number +1 929-356-5354 Pin: 313156821# at 3:00 pm on February 11, 2025.

The lowa 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 not apply to this project.

Questions must be submitted by 4:00 pm, February 04, 2025, to the Issuing Officer.

Bidding documents may stipulate a specific product. Substitute product will be considered if a written request is received by 4:00 pm, January 31, 2025, 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 Wednesday, January 29, 2025 at 9:00 am at the Hoover Building at 1305 East Walnut Street, Des Moines, Iowa 50319. Interested bidders shall meet in the 1st floor lobby off the main west entrance to the building. This meeting is not mandatory but is highly recommended.

Bidding Documents, including drawing sheets bearing the project name DAS CC IDALS Hoover 5th Floor Renovation, dated 01/21/2025 and the Project Manual prepared by ISG dated 01/21/2025, may be obtained from Beeline & Blue by visiting <u>www.beelineandblue.com</u> or by calling (515) 244-1611 on Friday, January 24, 2025.

For further information regarding this project contact: Michael Bradbury – Issuing Officer Phone: (515) 515-823-9327 E-Mail: <u>construction.procurement@iowa.gov</u>

INSTRUCTIONS TO BIDDERS

RFB #942600-01

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: Renovation of the 5th floor of the Hoover office building, including architectural, mechanical, plumbing, technology, fire sprinkler, electrical, and structural.

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: Purchasing Agent Issuing Officer, State of Iowa, Department of Administrative Services, Hoover State Office Building, 3rd floor, 1305 East Walnut Street, Des Moines, IA 50319-0105, Phone: 515-823-9327; email: construction.procurement@iowa.gov
- B. OWNER REPRESENTATIVE: Jennie Elliott, State of Iowa, Department of Administrative Services, 109 SE 13th Street, Des Moines, IA 50319, Phone: 515-745-3244; email: jennie.elliott@iowa.gov
- C. ON-SITE COORDINATOR: Brad Meister, Project Manager/Energy Associate, 09 SE 13th Street, Des Moines, IA 50319, Phone: 515-720-6262; email: <u>brad.meister@iowa.gov</u>
- D. CONSTRUCTION MANAGER CONTACT: Jarrad Boever, DCI Group, 220 SE 6th St., Suite 200, Des Moines, IA 50309, Phone: 515-480-8280; email: jarradb@dcigroup-us.com
- E. DESIGN PROFESSIONAL CONTACT: Pylar Eaton, ISG Inc., 217 E 2nd St Suite 110, Des Moines, IA 50309, Phone: 515-779-1775; email: pylar.eaton@isginc.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.
- 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 lowa 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 lowa 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 <u>IMPACS Electronic Procurement</u> <u>System</u>, 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 <u>https://das.iowa.gov/sites/default/files/procurement/pdf/Form%2022-ConfidentialityRequest-RFB.pdf</u>), (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 confidential treatment, Agency may release such information or material with or without providing advance notice to Contractor or material with or without providing its release from a court possessing set for confidential treatment, Agency may release such information or material with or without providing advance notice to Contractor and with or material with or without providing advance notice to contractor and with 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 <u>IMPACS</u> <u>Electronic Procurement System</u>. 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 lowa 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.2I 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 Iow 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.

"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 Iowest 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 Iowest responsive bidder's gualifications 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

- 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
 - 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.

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 <u>IMPACS Electronic Procurement System</u> Customer Portal Home page, Bidder selects "View Event" in the Sourcing Events section.

Sourcing Eve	?			
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	View Event 💌

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.

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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 02/12/2025
- B. Anticipated Date of Commencement 02/26/2025
- C. Substantial Completion by 06/19/2025

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

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15 0 31-Jan-25 0 Substitution Requests Due
16 0 04-Feb-25 0 RFB Questions Due
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46		1	25-Mar-25	25-Mar-25 0	Doors, Fram	ne, and Hardware Ordered			1			ו	Doors,	Fra	me, a	and I	Hard	ware	e Orc	dere	d							
47		1	25-Mar-25	25-Mar-25 0	VAV Ordered	d				I VAV Ordered																		
48		1	25-Mar-25	25-Mar-25 0	Aluminum F	rames Ordered						/	Alumir	nųm	Fram	ies (Order	ed					1				-	
49		1	25-Mar-25	25-Mar-25 0	Exhaust Far	ns Ordered						I E	Exhau	aust Fans Ordered														
50		15	26-Mar-25	15-Apr-25 0 [,]	Frames Deli	ivered			1 1 1	;		Ļ	– F	Frames Delivered									1		:		:	
51		25	26-Mar-25	29-Apr-25 0 [,]	Doors and H	Hardware Delivered			1	1		Ļ		Doors and Hardware Delivered														
52		15	26-Mar-25	15-Apr-25 0	VAV Delivere	ed			1			—	<u>۱</u>	VAV Delivered														
53		15	26-Mar-25	15-Apr-25 0 [,]	Aluminum F	rames Delivered						Ļ		Aluminum Frames Delivered														
54		15	26-Mar-25	15-Apr-25 0 [,]	Exhaust Far	ns Delivered						Ļ		Exhaust Fans Delivered														
55		Constru	uction						}					;		:												
56		4	27-Feb-25	04-Mar-25 0	Demo Wals	and Doors			-	ļ	Dei	mģ	Wals	an	d Doo	ors		:										
57		1	27-Feb-25	27-Feb-25 0	Electrical Dis	sconnects				ľ	Electrical Disconnects											:						
58		5	28-Feb-25	06-Mar-25 0	Electrical De	emolition			1	ļ	l Ele	ctri	cal De	Demolition														
59		5	03-Mar-25	07-Mar-25 0	Carpet, Bas	e, and Mastic Removal South				Carpet, Base, and Mastic Removal South																		
60		5	10-Mar-25	14-Mar-25 0	Carpet, Bas	e, and Mastic Removal North				;		Ca'n	oet, B	Base, and Mastic Removal North														
61		1	10-Mar-25	10-Mar-25 0	WallLayout	South			WallLayoutSouth																			
62		3	10-Mar-25	12-Mar-25 0	Electrical Ov	erhead Rough-Ins South			1	Electrical Overhead Rough-Ins South									-									
63		1	11-Mar-25	11-Mar-25 0	Furniture La	yout South				I Furhiture Layout South																		
64		0		11-Mar-25 0	Wall Layout Review with DAS South				Wall Layout Review with DAS South									:										
65		4	12-Mar-25	17-Mar-25 0	Frame New	Walls South			Frame New Walls South																			
66		1	12-Mar-25	12-Mar-25 0	Door Frame	Install South					IC	00	r Fran	nė I	nstall	Sout	th											
67		10	12-Mar-25	25-Mar-25 0	In Floor Elec	ctrical and LV Core Drilling South			In Floor Electrical and LV Core Drilling South																			
		Actual Worl	k 💻	Critical Re	maining W	Page 2	of 5							ר	ASK	filte	r: Hio	le C	Jone	Ac	tiviti€	es.		~ ~		~		
		Remaining	VVOIK •																					© Ur	acie	orp	orat	uon

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#	R	emaining uration	Start	Finish	Activity Nam	e		J		F বিবান	M	1 বাবা	A Notate		M		J বনাব	J বিবাৰ		A		S		С Л	N		D
									14	001	499	12	3 0 1 2	11		49	912	201	44		23	012	40	1 1 2	001	23	1912
68		5	13-Mar-25	19-Mar-25 0	ALT 01 - Sou	und Masking Install South					-		LT 01	- Sc	und N	Mas	king li	nstall	Sou	th			: : :				
69		3	17-Mar-25	19-Mar-25 0	Electrical & L	V Rough-In South						ΙĘ	lectrica	al &	LV Ro	bugl	ח-In S	outh									
70		0	17-Mar-25		In-Wall Block	king Pre-Install Conference					•	▶ In-	-Wall E	Block	king P	're-li	nstal	Confe	en	ce				4			
71		1	17-Mar-25	17-Mar-25 0	WallLayout	North					¦ I	Wa	allLay	out	North	۱¦							1				
72		4	18-Mar-25	21-Mar-25 0	Mechanical	Overhead Rough-Ins South					[∎ N	1echar	niċa	l Over	hea	d Ro	ugh-In	ıs Şo	outh			- - -				
73		5	18-Mar-25	24-Mar-25 0	Restroom B	elow Floor Rough-In					. [Restro	om	Belov	v Flo	oor Ro	bugh-l	n								
74		1	18-Mar-25	18-Mar-25 0	In-Wall Block	king South					. I	l In	-Wall I	Bloc	king S	Sout	h										
75		1	18-Mar-25	18-Mar-25 0	Furniture La	yout North					I	FL	urniture	e La	yout l	Nor	:h										
76		5	18-Mar-25	24-Mar-25 0	Fire Sprinkle	r Modficiations South						•	Fire Sp	orink	der Mo	odfi	ciatior	is Sol	uth								
77		0		18-Mar-25 0	WallLayout	Review with DAS North						► W	allLay	/o¦ut	Revie	ew v	with D	AS No	orth				1 1 1		1		
78		0		18-Mar-25 0	DIAL In-Wal	Inspection South						D	IAL In-	Wa	ll Insp	ecti	on Sc	uth					1				
79		5	19-Mar-25	25-Mar-25 0	Frame New	WallsNorth							Frame	e Ņe	w Wa	IIS N	lorth						1 1 1				
80		1	19-Mar-25	19-Mar-25 0	Door Frame	Install North					¦	D	oor Fr	ame	Insta	all N	orth		!.							!	
81		6	20-Mar-25	27-Mar-25 0	Drywall Han	g and Finish South							Drywa	all¦H	ang a	ind	Finish	Sout	n								
82		5	20-Mar-25	26-Mar-25 0	Electrical Ov	erhead Rough-Ins North			ł				Electri	ical	Overh	neac	Rou	gh-Ins	3 No	rth							
83		3	21-Mar-25	25-Mar-25 0	Restroom &	Kitchenette Exhaust Fan Roug	jh-In						Restro	oģm	& Kit	che	nette	Exhau	ust F	an F	toug	h-In					
84		5	25-Mar-25	31-Mar-25 0	Paint 1st an	d 2nd Coat Ceilings South					: : :		Pain	t 1s	t and	2nd	Coat	Ceilir	וgs '	Sout	h		1 1 1		1	:	
85		6	26-Mar-25	02-Apr-25 04	Electrical & L	V Rough-In North							Elec	trica	al & L\	V Ro	ough-	In Noi	rth								
86		2	26-Mar-25	27-Mar-25 0	Restroom In	-Wall Plumbing Rough-In					1 1 1	0	Restr	oʻon	n In-W	/all I	Plumb	ing Ro	ouģ'	h-In			1 1 1				
87		1	26-Mar-25	26-Mar-25 0	Hard Lid Fra	ming					1		Hard	Lid	Framiı	ng							1				
88		10	26-Mar-25	08-Apr-25 0 [,]	In Floor Elec	trical & LV Core Drilling North						Ċ	📕 In	Flo	or Ele	ctric	al & L	V Cor	еĎ	rilling	, Nor	th					
89		2	26-Mar-25	27-Mar-25 0	Partition Stru	ictural Supports					: : :	0	Partiti	on S	Struct	ural	Supp	orts									
90		10	26-Mar-25	08-Apr-25 04	Mechanical	Overhead Rough-Ins North							— M	ech	anical	Ove	erhea	d Rou	ıgh-l	ins N	lorth						
91		5	26-Mar-25	01-Apr-25 0 [,]	Fire Sprinkle	r Modifications North					: : :		Fire	Spr	inkler	Moo	dificat	ons N	lorth	۱			1 1 1	:		:	
92		1	27-Mar-25	27-Mar-25 0	Sprinkler Ro	ugh-In at Hard Lids			ł		:	÷	Sprink	٨ķr	Roug	h-In	at Ha	ard Lic	ls		-		1 1 1			:	
93		5	27-Mar-25	02-Apr-25 0 [,]	ALT 01 - Sou	und Masking Install North					: : :	ļ	ALT	01	- Sou	nd I	Maski	ng Ins	tall I	North	۱		1 1 1		1		
94		1	28-Mar-25	28-Mar-25 0	Electrical Ro	ugh-In at Hard Lids					1	- E	Electr	ical	Roug	Jh-Ir	n at H	ard Li	ds								
95		3	28-Mar-25	01-Apr-25 0 [,]	Prime and F	irst Coat Paint Walls South							Prim	ie a	nd Fir	st C	oat P	aint V	√alls	Sou	th						
96		5	28-Mar-25	03-Apr-25 04	Pull Circuits	South						Ļ] Pull	Çin	cuits S	Sout	h								1		
97		5	28-Mar-25	03-Apr-25 0	Pull LV Circu	its South						ļ	l Pull	ĽV	Circui	its S	outh		1				1			1	
98		10	02-Apr-25	15-Apr-25 0-	Carpet Insta	ll South					: : :	1		Can	pet In	stall	Sout	h					1 1 1		1	:	
99		5	02-Apr-25	08-Apr-25 0-	Electrical Trir	nout South					: : :	Į	E E	e¢tri	cal Tri	imo	ut Sou	uth			-		1			:	
100		2	03-Apr-25	04-Apr-25 0-	In-Wall Block	king North						1	In-V	Vall	Block	ing	North										
101		0		04-Apr-25 0	DIAL In-Wal	Inspection North					1 1 1		DIA	LIr	-Wall	Ins	oectio	n Nor	th				1				
		Actual Work Remaining	k Work \blacklozenge	Critical Re Milestone 	maining W	Pa	age 3 of	5						ſ	ASK	filte	er: Hio	le Do	ne A	Activi	ities.		©	Orac	le Cc	orpoi	ration

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#	R	emaining	Start	Finish	Activity Nam	e	J	F	M	1	A		M	J	J		A	S	0		N	D	
							P 1	40012	100	123	3012	20	112	0012	2012	420	1123	012	2011	200	12	301	2
102		8	07-Apr-25 (16-Apr-25 0	Drywall Hang	g and Finish North		- 	1			Dryw	all Hai	ng and	Finish	Nort	n		1		1	1	
103		0		08-Apr-25 0	DIAL In-Wall	and Above Ceiling Inspection North		1 1 1	: : :		DIA	۹L Ir	⊦Wall	and Ab	ove Ce	iling	Inspect	ion No	orth	:	:	: •	
104		5	09-Apr-25 (15-Apr-25 0 [,]	Mechanical	Trimout South		1	1		l N	/lech	anical	Trimou	t South	ו	1		1		1	1	
105		5	09-Apr-25 (15-Apr-25 0	Paint 1st and	d 2nd Coat Ceilings North		 : : : :	: : :	: : :	P	Paint	1st ar	nd 2nd	Coat C	eilin	gs Nortl	h	: : : •				
106		5	09-Apr-25 (15-Apr-25 0 [,]	Drywall Hang	g and Finish North Hard Lids		1 1 1		÷		bywa	all Har	ng and	Finish I	Nortl	n Hard I	_ids			1		
107		0		15-Apr-25 0	Written Appr	oval for Final Paint South		1	1		♦ V	Vritte	en App	roval fo	r Final	Pair	it South	I	1		1		
108		5	16-Apr-25 (22-Apr-25 0	Final Paint S	outh		1	1	-		Fina	al Pair	t South	ļ		1					1	
109		5	16-Apr-25 (22-Apr-25 0 [,]	Mechanical	Trimout North		1				Me	chanic	al Trimo	out Nor	th	1				1		
110		3	16-Apr-25 (18-Apr-25 0 [,]	Mechanical I	Rough-In at Hard Lids		 : : :	: : :		1 0	Mecl	hanica	l Roug	n-In at	Harc	l Lids		: : :		: ; ;		
111		4	17-Apr-25 (22-Apr-25 0	Prime and Fi	rst Coat Paint Walls North		1	1			Prin	ne an	d First C	Coat Pa	ain¦t \	Valls No	orth	1		1	1	
112		5	17-Apr-25 (23-Apr-25 0 [,]	Pull Circuits	North		1	1 1 1			Pul	ll Circu	its Nort	h		1		1		1 1 1		
113		5	17-Apr-25 (23-Apr-25 04	Pull LV Circu	its North		1 1 1	1			Pul	ILV Ç	ircuits N	orth		1				1		
114		3	23-Apr-25 (25-Apr-25 0 [,]	Vinyl Base Ir	nstall South		1 1 1	1 1 1		0	Vir	nyl Bas	e Insta	II South	h	1 1 1		1		1		
115		5	23-Apr-25 (29-Apr-25 0 [,]	Aluminum Fr	ames and Glazing Install		1	1			A	luminu	um Frar	nes an	d Gl	azing In	stall			1	1	
116		5	23-Apr-25 (29-Apr-25 0 [,]	Hang Doors		1	 				ļН	lang D	oors					• • • • • • • • • • • • • • • • • • •				
117		5	23-Apr-25 (29-Apr-25 0 [,]	Millwork Insta	all		1 1 1	: : :			I N	1illwork	Install	1		1		1 1 1		1		
118		5	23-Apr-25 (29-Apr-25 0 [,]	Plumbing Tri	mout		1	1			P	lumbir	ng Trimo	put	1	1		1	:	1	1	
119		10	23-Apr-25 (06-May-25 (Carpet & LV	T Install North		1	1 1 1				Carpe	et & LV⁻	r Instal	l No	th		1		1 1 1		
120		1	23-Apr-25 (23-Apr-25 0 [,]	Acoustical C	eiling Grid		1	1		I	Acc	oustica	l Ceilin	g Grid		1		1			1	
121		5	23-Apr-25 (29-Apr-25 0 [,]	Electrical Trin	nout North		 				ΙE	lectrica	al Trimo	ut Norf	th			· · · · · · · · · · · · · · · · · · ·		·		
122		1	24-Apr-25 (24-Apr-25 0 [,]	Mechanical I	Rough-Ins at ACT		1	1		I	Me	chani	cal Rou	gh-Ins	at A	СТ				1		
123		2	24-Apr-25	25-Apr-25 0 [,]	Electrical and	d LV Rough-Ins at ACT		1	:		I	Ele	ectrical	and L\	Roug	h-Ìns	s at AC⊺	Г		:	1		
124		0		25-Apr-25 0 [,]	DIAL Above	Ceiling Inspection North ACT		: : :	: : :		•	DI	AL Abo	ove Cei	ling Ins	spec	tion Nor	th ACT	Ę		1 1 1		
125		1	28-Apr-25	28-Apr-25 0 [,]	ACT Install			1	:			A	CT Ins	tall	1		:		1	:	1	2	
126		0	05-May-25		Written Appr	oval for Final Paint North		1	1			•	Writte	n Appro	val for	Fina	l Paint I	North	1				
127		5	05-May-25	09-May-25 (Final Paint N	lorth		1	1 1 1				Final	Paint N	lorth		1		1				
128		4	08-May-25	13-May-25 (Vinyl Base N	lorth		1	1				Vin	/l Base	North		1				1		
129		10	14-May-25	28-May-25 (Owner Sche	dule Contingency		1	1 1 1					Owner	Sched	ulę (Conting	ency	1		1		
130		5	20-Jun-25	26-Jun-25 0	LV Test and	Terminate		1	1				1		LV Te	st ar	nd Termi	nate			1	1	
131		Closed	out					1	1			1 1 1 1							1				
132		1	29-May-25	29-May-25 (DCI Group F	Punch List		1 1 1	1 1 1			: : :	I	DCI G	roup P	unch	List		1 1 1	:	1	i.	
133		5	30-May-25	05-Jun-25 0	DCI Punch L	ist Correction		1 1 1	1 1 1			:	Ļ	DCI	Punch	List	Correct	ion	1 1 1		: : :		
134		20	30-May-25	26-Jun-25 0	Furniture Ins	tall		1	1			: : :	ļ		Furnit	ure l	nstall		1 1 1		1		
		Actual Wor	k 💻	Critical Re	maining W	Poro 4 a	of F					т,	V C K fi				ativitiaa						┥
		Remaining	Work \blacklozenge	▲ Milestone		rage 4 c	б					I A	JON II				Juvilles	•	© Ora	acle (Corp	oratic	n
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#	Remaining	Start	Finish	Activity Nam	e		J	F		М	A		М		J		J	A	\	S	0		Ν		D
	Duration					P	112	2001	120	012	301	22	2112	200	12	20	122	01	123	012	201	120	01	230	12
135	2	06-Jun-25	09-Jun-25 0	Construction	Clean										Co	nstru	ction	Clea	an					-	
136	1	10-Jun-25	10-Jun-25 0	Owner & De	sign Team Punch List									I	Ow	ner 8	& Des	sign	Team	Puno	ch List				
137	5	11-Jun-25 (17-Jun-25 0	Owner Traini	ng			: : :	1		1 1 1	:		- -		wne	r Traiı	ning			: : :			:	
138	5	11-Jun-25 (17-Jun-25 0	Owner & De	sign Team Punch List Corrections			1 1 1	1		1					wne	r & Þ	esig	n Tea	ım Pu	nch Li	stĊo	nrecti	ons	
139	2	18-Jun-25	19-Jun-25 0	Final Clean							1			Ì	0 F	inal	Cleại	n				÷			
140	0		19-Jun-25 0	Owner Close	eout Conference			- - -			1				• (Śwne	r Clo	seol	ut Co	nferer	nce				
141	0		19-Jun-25 0	Subtantial C	ompletion										• ٤	Subta	ntial	Con	npleti	on					
142	0		26-Jun-25 0	Owner Occu	pancy			: : :	1		: : :	:		-	•	Ow	ner Ç	Ccup	bancy	/	: : :			:	

 Remaining Work 🔶

EXISTING HAZARDOUS MATERIAL INFORMATION

PART 1 -GENERAL

1.01 **EXISTING HAZARDOUS MATERIAL INFORMATION**

- Α. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions.
- Β. The existing hazardous materials survey reports related to this Project, were prepared by:
 - 1. Terracon Asbestos Analysis of Bulk Materials dated 12/12/2024
 - 2. Terracon Lead Analysis of Bulk Materials dated 12/12/2024
- C. **Related Requirements:**
 - 1. Section 3.12 "Hazardous Materials" in the ConsensusDocs 802 contract for notification requirements if materials suspected of containing hazardous materials are encountered.

PRODUCTS – NOT USED PART 2 -

PART 3 -**EXECUTION – NOT USED**

EMSL	EMSL Analytical, Inc. 10801 Southern Loop Blvd Pineville, NC 28134 Tel/Fax: (704) 525-2205 / (704) 525-2382 http://www.EMSL.com / charlottelab@emsl.com	EMSL Order: Customer ID: Customer PO: Project ID:	412414096 TCON21 08247382
Attention:	Austin Potthoff	Phone:	(515) 244-3184
	Terracon Consultants, Inc.	Fax:	(515) 244-5249
	600 SW 7th Street	Received Date:	12/09/2024 9:45 AM
	Des Moines, IA 50309	Analysis Date:	12/11/2024 - 12/12/2024
		Collected Date:	12/06/2024
Project:	08247382/ Hoover Bldg 4F & 5F/ 1305 F Walnut St.		

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbe	stos	Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
1-MA5-1	North End, Above	Gray		40% Quartz	None Detected
	Drop Ceiling in Office	Non-Fibrous		10% Ca Carbonate	
412414096-0001	- Grey Concrete	Homogeneous		50% Non-fibrous (Other)	
1-MA5-2	Middle of Open	Gray		40% Quartz	None Detected
	Room, Above Drop	Non-Fibrous		10% Ca Carbonate	
412414096-0002	Ceiling - Grey	Homogeneous		50% Non-fibrous (Other)	
	Concrete				
1-MA5-3	South End of Open	Gray		40% Quartz	None Detected
412414096-0003	Room, Above Drop	Non-Fibrous		60% Non-fibrous (Other)	
412414030-0003	Concrete	Homogeneous			
2-MA2-4-Block	South Wall - East End	Grav		40% Quartz	None Detected
	- Grev CMU Block &	Non-Fibrous		20% Ca Carbonate	None Delected
412414096-0004	Grey Mortar	Homogeneous		40% Non-fibrous (Other)	
2-MA2-4-Mortar	South Wall - East End	Gray		60% Quartz	None Detected
	- Grey CMU Block &	Non-Fibrous		5% Ca Carbonate	
412414096-0004A	Grey Mortar	Homogeneous		35% Non-fibrous (Other)	
2-MA2-5-Block	South Wall - Middle -	Gray		40% Quartz	None Detected
	Grey CMU Block &	Non-Fibrous		20% Ca Carbonate	
412414096-0005	Grey Mortar	Homogeneous		40% Non-fibrous (Other)	
2-MA2-5-Mortar	South Wall - Middle -	Gray		60% Quartz	None Detected
	Grey CMU Block &	Non-Fibrous		5% Ca Carbonate	
412414096-0005A	Grey Mortar	Homogeneous		35% Non-librous (Other)	
2-MA2-6-Block	South Wall - West	Gray		30% Quartz	None Detected
412414096-0006	End - Grey CMU Block & Grey Mortar	Non-Fibrous		70% Non-librous (Other)	
	South Well West	Crow		10% Questa	Nana Datastad
2-IVIA2-6-IVIORAR	End - Grev CMU	Non-Fibrous		40% Qualiz 60% Non-fibrous (Other)	None Detected
412414096-0006A	Block & Grey Mortar	Homogeneous			
3-W/B1-7- loint	South Wall - East End	White		80% Ca Carbonate	None Detected
Compound	- White Gypsum &	Non-Fibrous		20% Non-fibrous (Other)	
	Joint Compound	Homogeneous			
412414096-0007					
3-WB1-7-Gypsum	South Wall - East End	White	5% Cellulose	93% Non-fibrous (Other)	None Detected
	- White Gypsum &	Non-Fibrous	2% Glass		
412414096-0007A	Joint Compound	Homogeneous			
3-WB1-8-Joint	South Wall - Middle -	White		80% Ca Carbonate	None Detected
Compound	Ioint Compound	Non-Fibrous		20% Non-fibrous (Other)	
412414096-0008	Joint Compound	Homogeneous			
3-WB1-8-Gypsum	South Wall - Middle -	White	8% Cellulose	90% Non-fibrous (Other)	None Detected
o wer o cypsum	White Gypsum &	Non-Fibrous	2% Glass		
412414096-0008A	Joint Compound	Homogeneous			
3-WB1-9-Joint	South Wall - West	White		80% Ca Carbonate	None Detected
Compound	End - White Gypsum	Non-Fibrous		20% Non-fibrous (Other)	
	& Joint Compound	Homogeneous			
412414096-0009					



10801 Southern Loop Blvd Pineville, NC 28134 Tel/Fax: (704) 525-2205 / (704) 525-2382 http://www.EMSL.com / charlottelab@emsl.com

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbes	stos	Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
3-WB1-9-Gypsum	South Wall - West End - White Gypsum & Joint Compound	White Non-Fibrous Homogeneous	5% Cellulose 2% Glass	93% Non-fibrous (Other)	None Detected
4-MG7-10	East End - Middle of Room - Green & Tan Carpet Glue	Tan/Green Non-Fibrous Heterogeneous	<1% Cellulose <1% Glass	2% Quartz <1% Ca Carbonate 98% Non-fibrous (Other)	None Detected
4-MG7-11	Middle of Room - Green & Tan Carpet	Tan/Green Non-Fibrous	2% Cellulose 2% Synthetic	2% Quartz <1% Ca Carbonate	None Detected
4-MG7-12	West End - Middle of Room - Green & Tan	Brown/Tan/Green Non-Fibrous	10% Synthetic	8% Ca Carbonate 8% Non-fibrous (Other) 82% Non-fibrous (Other)	None Detected
412414096-0012 Result includes a small amount	Carpet Glue t of inseparable attached carp	Heterogeneous			
5-MG3-13-Cove Base	N.E. Corner of Room - Brown Cove Base with Brown Mastic	Black Non-Fibrous Homogeneous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
5-MG3-13-Brown Mastic	N.E. Corner of Room - Brown Cove Base	Brown Non-Fibrous		2% Mica 98% Non-fibrous (Other)	None Detected
5-MG3-13-Tan Mastic	N.E. Corner of Room - Brown Cove Base	Tan Non-Fibrous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
412414096-0013B 5-MG3-14-Cove Base	with Brown Mastic S.E. Corner of Room - Brown Cove Base with Brown Mastic	Homogeneous Brown/Black Non-Fibrous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
5-MG3-14-Brown Mastic 412414096-0014A	S.E. Corner of Room - Brown Cove Base with Brown Mastic	Brown Non-Fibrous Homogeneous		2% Mica 98% Non-fibrous (Other)	None Detected
5-MG3-14-Tan Mastic	S.E. Corner of Room - Brown Cove Base with Brown Mastic	Tan Non-Fibrous Homogeneous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
5-MG3-15-Cove Base	East Side Pillar - Brown Cove Base with Brown Mastic	Brown Non-Fibrous		10% Ca Carbonate 90% Non-fibrous (Other)	None Detected
5-MG3-15-Brown Mastic	East Side Pillar - Brown Cove Base	Brown Non-Fibrous		<1% Quartz 100% Non-fibrous (Other)	None Detected
5-MG3-15-Tan Mastic	East Side Pillar - Brown Cove Base	Tan Non-Fibrous		20% Ca Carbonate 80% Non-fibrous (Other)	None Detected
6-WB1-16-Joint Compound	N.E. Corner of Room - White Gypsum & Joint Compound	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
6-WB1-16-Gypsum	N.E. Corner of Room - White Gypsum &	White Non-Fibrous	5% Cellulose 2% Glass	93% Non-fibrous (Other)	None Detected
6-WB1-17-Joint Compound	Middler of Room - White Gypsum & Joint Compound	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
412414096-0017 6-WB1-17-Gypsum	Middler of Room - White Gypsum &	White Non-Fibrous	10% Cellulose 2% Glass	88% Non-fibrous (Other)	None Detected
6-WB1-18-Joint Compound	S.W. Corner of Room - White Gypsum & Joint Compound	⊓ornogeneous White Non-Fibrous Homogeneous		80% Ca Carbonate 10% Mica 10% Non-fibrous (Other)	None Detected

Initial report from: 12/12/2024 11:45:00



10801 Southern Loop Blvd Pineville, NC 28134 Tel/Fax: (704) 525-2205 / (704) 525-2382 http://www.EMSL.com / charlottelab@emsl.com
 EMSL Order:
 412414096

 Customer ID:
 TCON21

 Customer PO:
 08247382

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

			Non-Asbe	stos	Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
6-WB1-18-Gypsum	S.W. Corner of Room - White Gypsum & Joint Compound	White Non-Fibrous Homogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
7-MG3-19-Ceramic Cove Base 412414096-0019	S.E. Corner of Room - Off White Ceramic Cove Base & Brown Mastic	Tan/White Non-Fibrous Homogeneous		60% Ca Carbonate 40% Non-fibrous (Other)	None Detected
7-MG3-19-Mastic 412414096-0019A	S.E. Corner of Room - Off White Ceramic Cove Base & Brown Mastic	Brown Non-Fibrous Homogeneous		2% Quartz 98% Non-fibrous (Other)	<1% Chrysotile
7-MG3-20-Ceramic Cove Base 412414096-0020	S.W. Corner of Room - Off White Ceramic Cove Base & Brown Mastic	Tan/White Non-Fibrous Homogeneous		60% Ca Carbonate 40% Non-fibrous (Other)	None Detected
7-MG3-20-Mastic	S.W. Corner of Room - Off White Ceramic Cove Base & Brown Mastic	Brown Non-Fibrous Homogeneous		2% Mica 98% Non-fibrous (Other)	<1% Chrysotile
7-MG3-21-Ceramic Cove Base 412414096-0021	N.W. Corner of Room - Off White Ceramic Cove Base & Brown Mastic	Tan Non-Fibrous Homogeneous		30% Ca Carbonate 70% Non-fibrous (Other)	None Detected
7-MG3-21-Mastic 412414096-0021A Result includes a small amo	N.W. Corner of Room - Off White Ceramic Cove Base & Brown Mastic unt of inseparable attached mat	Brown/White Non-Fibrous Heterogeneous erial.		98% Non-fibrous (Other)	2% Chrysotile

Analyst(s)

Jessica Glover (8) Kelsie Dwyer (5) Matthew Schaefer (26)

Evan L Plumber

Lee Plumley, Laboratory Manager or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis . Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 12/12/2024 11:45:00



10801 Southern Loop Blvd, Pineville, NC, 28134 Telephone: (704) 525-2205 Fax:(704) 525-2382 EMSL-CT-41

Attention: Austin Potthoff Project Name: 08247382/ Hoove	er Building 4F & 5th Floor
Terracon Consultants, Inc. [TCON21]	
600 SW 7th StreetSte. M	
Des Moines, IA 50309 Customer PO: 08247382	
(515) 244-3184 EMSL Sales Rep: Jason McDonald	
austin.potthoff@terracon.com Received: 12/09/2024 09:4	5
Reported: 12/12/2024 14:2	7

Analytical Results

Analyte	Results	RL	Weight	Total Weight (g)	Area Sampled (in²)	Prep Date & Tech	Prep Method	Analysis Date & Analyst	Analytical Method	Q	DF
Client Sam	ple ID: P.C. 1/5th FI	Tan, Drywall, Wal	lls						Date Sam	pled: 12	2/05/24
Matrix: Chi	ps								LIMS Reference ID): LC50	355-01
Lead	<0.007 mg/cm ²	0.007 mg/cm ²	0.2693 g	2.5527	4	12/12/24 EH2	SW846 3051A mg/cm2	12/12/24 EH	SW 846-7000B		1
	Sample Co	mments:									
Client Sam	ple ID: P.C. 2/5th FI	Tan, Metal, Door	Frame						Date Sam	pled: 12	2/05/24
Matrix: Chi	ps								LIMS Reference ID): LC50	355-02
Lead	<0.0008 mg/cm ²	0.0008 mg/cm ²	0.0277 g	0.0277	4	12/12/24 EH2	SW846 3051A mg/cm2	12/12/24 EH	SW 846-7000B		1
	Sample Co	mments:									



10801 Southern Loop Blvd, Pineville, NC, 28134 Telephone: (704) 525-2205 Fax:(704) 525-2382 EMSL-CT-41

Attention: Austin Potthoff	Project Name:	08247382/ Hoover Building 4F & 5th Floor
Terracon Consultants, Inc. [TCON21]		
600 SW 7th StreetSte. M		
Des Moines, IA 50309	Customer PO:	08247382
(515) 244-3184	EMSL Sales Rep:	Jason McDonald
austin.potthoff@terracon.com	Received:	12/09/2024 09:45
	Reported:	12/12/2024 14:27

Certified Analyses included in this Report

Analyte	Certifications
SW 846-7000B in Chips	
Lead	41-AIHA ELLAP

List of Certifications

Description	Number	Expires
American Industrial Hygiene Association (AIHA-LAP) - ELLAP	192283	12/01/2024
American Industrial Hygiene Association (AIHA-LAP) - EMLAP	192283	12/01/2024
American Industrial Hygiene Association (AIHA-LAP) - IHLAP	192283	12/01/2024
c Field of Testing (FOT) on <u>www.emsl.com <http: www.emsl.com=""></http:></u> fo	or a complete listing of	
	Description American Industrial Hygiene Association (AIHA-LAP) - ELLAP American Industrial Hygiene Association (AIHA-LAP) - EMLAP American Industrial Hygiene Association (AIHA-LAP) - IHLAP C Field of Testing (FOT) on www.emsl.com < http://www.emsl.com> for FMSL is certified	DescriptionNumberAmerican Industrial Hygiene Association (AIHA-LAP) - ELLAP192283American Industrial Hygiene Association (AIHA-LAP) - EMLAP192283American Industrial Hygiene Association (AIHA-LAP) - IHLAP192283C Field of Testing (FOT) on www.emsl.com http://www.emsl.com for a complete listing ofE Field of Testing (FOT) on www.emsl.com http://www.emsl.com for a complete listing of

Notes and Definitions

Item	Definition
(Dig)	For metals analysis, sample was digested.
[2C]	Reported from the second channel in dual column analysis.
DF	Dilution Factor
MDL	Method Detection Limit.
ND	Analyte was NOT DETECTED at or above the detection limit.
NR	Spike/Surrogate showed no recovery.
Q	Qualifier
RL	Reporting Limit
Wet	Sample is not dry weight corrected.

Measurement of uncertainty and any applicable definitions of method modifications are available upon request. Per EPA NLLAP policy, sample results are not blank corrected.



10801 Southern Loop Blvd, Pineville, NC, 28134 Telephone: (704) 525-2205 Fax:(704) 525-2382 EMSL-CT-41

EMSL Order ID: 412450655 LIMS Reference ID: LC50655 EMSL Customer ID: TCON21

Attention: Austin Potthoff

Terracon Consultants, Inc. [TCON21] 600 SW 7th StreetSte. M Des Moines, IA 50309 (515) 244-3184 austin.potthoff@terracon.com

Project Name:

08247382/ Hoover Building 4F & 5th Floor

Customer PO: 08247382 **EMSL Sales Rep: Received: Reported:**

Jason McDonald 12/09/2024 09:45 12/12/2024 14:27



Aaron Hartley Laboratory Manager or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. QC sample results are within quality control criteria and met method specifications unless otherwise noted. All results for soil samples are reported on a dry weight basis, unless otherwise noted.

Analysis following EMSL SOP for the Determination of Environmental Lead by FLAA. The laboratory has a reporting limit of 0.008% by wt., based upon a minimum sample weight of 0.25g submitted to the lab, and is not responsible for any result or reporting limit provided in mg/cm2 since it is dependent upon an area value provided by non-lab personnel. A "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty and definitions of modifications are available upon request. Results in this report are not blank corrected unless specified.

EMSL	Lea EMS	d Chain of Custody L Order Number / Lab Use Only		EMSL Analytical, Inc. 200 Route 130 North Cinnaminson, NJ 08077
		L 250655		PHONE: (800) 220-3675
Customer ID:		Billing ID:	Same as left column	EMAIL: CinnaminsonLeadLab(
	nsultants, Inc.	Company Name:		
E Contact Name: Austin Pottho	ff	Billing Contact		
E Street Address: 600 SW 7th S	Street Suite M	E		
E City, State, Zip: Des Moines				
Phone: 515-783-850	10Wa 30309	US E City, State, Zip:		Country:
Email(s) for Report: Autotic Date		Phone:		
	non@terracon.com	Email(s) for Invoice:		
Project HODUPE P. 1	1' allEd orthigh	Project Information		
MSL LIMS Project ID:	1119 4195 Floo	ſ	Order: Pro	ect #102247207
f applicable, EMSL will rovide)	2	US State where samples collected: T/	State of Connecticut (Of	must select project location:
sampled By Name:	Are I Sampled By Signature:	O III	Commercial (Ta	xable) Residential (Non-Taxabl
Lore Th	16611	Cour A princi	ell	No. of Samples in Shipment
		urn-Around-Time (TAT)		
	24 Hour 32 Hour	48 Hour 72 Hou	ır 96 Hour	1 Week 2 Week
MATRIX	METHOD	urs or Less. "32 Hour TAT available for select tests o	unly; samples must be submitted by 11:30)am
HIPS 1% by wt. ppm (mg/kg) Mma/cm		INSTRUMENT	REPORTING LIN	IIT SELECTION
Reporting Limit based on a minimum 0.25g	SW 846-7000B	Flame Atomic Absorption	0.008% (80ppm	
Nol appropriate for Ceramic Tiles - XRF is commended	SW 846-6010D*	ICP-OES	0.0004% (4ppm)	
IR	NIOSH 7082	Flame Atomic Absorption	4µg/filter	
	NIOSH 7300M / NIOSH 7303M	ICP-OES	0.5ug/5ltor	
	NIOSH 7300M / NIOSH 7303M	ICP-MS	0.05ug/filter	
	SW 846-7000B	Flame Atomic Absorption	10ur/wine	
no box is checked, non-ASTM Wipe is sumed	SW 846-6010D*	ICP-OES	1.0ug/wipe	
	SW 846-1311 / 7000B / SM 3111B	Flame Atomic Absorption		
	SW 846-1311 / SW 846-6010D*	ICP-OES	0.4 mg/L (ppm)	
°LP	SW 846-1312 / 7000B / SM 3111B	Flame Atomic Absorption	0.4 mg/L (ppm)	
	SW 846-1312 / SW 846-6010D*	ICP-OES	0.1 mg/L (ppm)	— † — — – þ. – – – – – – – – – – – – – – – – – – –
10	22 CCR App. II, 7000B	Flame Atomic Absorption	40mg/kg (ppm)	──┤───┣━┤───┤
10	22 CCR App. II, 300 846-80 10D	ICP-OES	2mg/kg (ppm)	
	22 CCR App. II, SW 846-6010D*		0.4 mg/L (ppm)	
H .	SW 846-7000B	Elame Atomic Absorption	0.1 mg/L (ppm)	
	SW 846-6010D*	ICP-OES	40mg/kg (ppm)	
Istewater	SM 3111B / SW 846-7000B	Flame Atomic Absorption	0.4 mg/L (ppm)	╶─┼───╄═┽───┤
served with HNO3	EPA 200.7	ICP-OES	0.020 mol/ /r	╾╾┾╾╶╌╌┾╾┚ ┍╼┓
nking Water	EPA 200.5			
preserved	FPA 200 8	107-025	0.003 mg/L (ppm)	
DISDM ENAND		ICP-MS	0.001 mg/L (ppm)	┝───┝━┥───┤
	40 CFR Part 50	ICP-OES	12 µg/filter	╶╌┼╌───┟╤┽╌───┤
۳. <u> </u>				
/L		L		
Sample Number	Sample Location		Volume / Area	Data (Time Original
.6.1	thel Tax Day 11	. 110 -11 11		Date / Time Sampled
()	the Fun Digwall u	valis 2X5		12-5-24/10:30
L. 0 3	Fl lan, metal, Doc	91 Frame 12"x1"		17-5-14/ 10.40
	J	a por		12 521 10.90
	· · · · · · · · · · · · · · · · · · ·			
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od of Shipment: Fed-EK		Sample Condition Upon Re	oo.pc	h
auished by: Corf y Pr. rea	Date/Time:	Sample Condition Upon Re		Date/Time
auished by: Suished by: Suish	Cl Date/Time: 12-5-24/3:	Sample Condition Upon Re OD Received by: WW ~Fx	7915 6695 0136	Date/Time
ad of Shipment: Fed-FK quished by: Corty Purct	Date/Time: 12-5-24/3- Date/Time:	Sample Condition Upon Re POP Received by: White Fx Received by:	7915 4695 0136	Date/Time 12/9/24 945A-
aushed by: FED-FK Corty Purct Julished by: Inter Corty Purct Inter Corty Purct	Date/Time: 12-5-24/3- Date/Time: *6010C Available 1/	Sample Condition Upon Re PD Received by: White Fx Received by:	7915 6695 DI36	Date/Time 12/9/24 945A- Date/Time

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are incorporated into this Chain of Custody by reference in their entirety. Submission of samples to EMSL Analytical, acceptance and acknowledgment of all terms and conditions by Customer.

Page 4 of 4

1

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P

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. State Building Code Plan Review: The plan review and inspections for this project have been applied for by the Architect. Please contact your inspector prior to construction and occupancy.
- B. State Building Code Energy Review: The energy code review and inspections for this project have been applied for by the Architect. Please contact your inspector prior to construction and occupancy.
- C. Electrical Permit and Inspections: Trade Contractor is responsible for permits and inspections.
- D. 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
SECTION 00 4116

BID FORM

The Bid Form must be submitted online through the State's <u>IMPACS Electronic Procurement</u> <u>System</u>.

RFB #942600-01

BID FORM for CONSTRUCTION CONTRACT

for

Hoover Building 1305 East Walnut Street Des Moines, Iowa 50319 Project 9426.00

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 January, 21, 2025, 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: General Construction

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

_____ Dollars

BP 02

Description: Flooring

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

	Dollars
(\$)	

BP 03

Description: Electrical, Low Voltage, and Fire Alarm

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

(\$).		

BP 04

Description: Mechanical and Plumbing

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

Dollars

Dollars

(\$_____).

BP 05

Description: Fire Sprinkler

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

Dollars

(\$_____).

ALTERNATES:

ALT 01

Description: Sound Masking

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

(\$)		
(5)	/	١
	(5)).

ALT 02

Description: Thermostat Replacement

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

(\$_____).

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;

Dollars

 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.

Dollars

- 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.
- 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, is%.
END OF SECTION

BID FORM

SECTION 00 4116.01

NON-DISCRIMINATION CLAUSE

This Section is for informational purposes only. All information will be submitted online through the State's <u>IMPACS Electronic Procurement System</u>.

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 <u>IMPACS Electronic Procurement System</u>.

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. <u>Search the Targeted Small Business Directory</u> 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

PAGE #	
BID NO.	
	(to be completed by bidder)
CONTRACTOR	

submission. This information is subject to verification and confirmation. NOTE: The Department of General Services will not regard your lack of good faith effort to solicit targeted Small Business Enterprise subcontractors on this project. However, every effort shall be made to You are requested to provide the information on this form showing your targeted Small Business enterprises contacts made prior to your bid 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 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

		 	· · · · · · · · · · · · · · · · · · ·		
DTATION USED IN BID	DOLLAR AMOUNT PROPOSED TO BE SUBCONTRACTED				
QUQ	YES/NO				
RECEIVED	DATES				
QUOTES I	YES/NO				
DATES CONTACTED					
TSB					
SUBCONTRACTOR					

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.

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 Contrac	tor") has submitted a Bid to the
Owner,	, (the "Owner") for the	(the "Project") in
accordance with the Bid	ding 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 Surety ("Surety"), are bour	(the "Bond"), the Constructor as Principal and nd to the Owner as Obligee in the maximum amount	as
Surety hereby bind themse and severally, as provided	eves, their heirs, executors, administrators, successors a	and assigns, jointly
 If the Obligee sha Agreement with the 	all accept the bid of the Constructor, the Constructor shall Obligee in accordance with the terms of such Bid.	enter into an
 Constructor shall the faithful performation in the performance of 	procure such bond or bonds as are specified in the Continue of the Work and for the prompt payment of labor and of the Work.	ract Documents for materials furnished
 If the Constructor pay to the Obligee th such agreement the covered by Construct 	r fails to enter such Agreement and give such bonds, the ne difference between the amount of Constructor's bid and Obligee in good faith executes with another Party to perfo ctor's Bid, not to exceed the Bond Sum stated above.	Constructor sha ll d the amount of orm the Work
 If the Constructor be null and void; oth 	r shall fulfill its obligation under Articles 1 through 3, then terwise it shall remain in full force and effect.	this obligation sha
This Bond is entered into a	as of(date)	
This Bond is entered into a SURETY:	as of(date)(seal)	
This Bond is entered into a SURETY:BY:BY:	as of(date)(seal)	
This Bond is entered into a SURETY: BY: Print Name:	as of(date)(seal)	
This Bond is entered into a SURETY: BY: Print Name: Print Title:	as of(date) (seal) (Attach Power of Attorney)	
This Bond is entered into a SURETY: BY: Print Name: Print Title: Witness:	as of(seal) (seal) (Attach Power of Attorney)	
This Bond is entered into a SURETY: BY: Print Name: Print Title: Witness: (Additional signature	as of(seal) (Attach Power of Attorney) (Attach Page)	
This Bond is entered into a SURETY: BY: Print Name: Print Title: Witness: (Additional signature Constructor:	as of(seal) (Attach Power of Attorney) (Attach Power of Attorney) es, if any, appear on attached page) (seal)	
This Bond is entered into a SURETY: BY: Print Name: Print Title: Witness: (Additional signature Constructor: BY:	as of(seal) (Attach Power of Attorney) (Attach Power of Attorney) es, if any, appear on attached page) (seal)	
This Bond is entered into a SURETY: BY: Print Name: Vitness: (Additional signature Constructor: BY: Print Name:	as of(seal) (Attach Power of Attorney) (Attach Power of Attorney) es, if any, appear on attached page) (seal)	
This Bond is entered into a SURETY: BY: Print Name: Vitness: (Additional signature Constructor: BY: Print Name: Print Title:	as of(seal) (Attach Power of Attorney) (Attach Power of Attorney) (seal) (seal)	
This Bond is entered into a SURETY: BY: Print Name: Vitness: (Additional signature Constructor: BY: Print Name: Print Title: Witness: Witness:	as of(seal) (Attach Power of Attorney) (Attach Power of Attorney) (seal) (seal)	

2

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 "redined" version indicating changes to the original text. Consultation with legal and insurance counsel and careful review of the entire document are strongly encouraged.

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.



ConsensusDocs[™] 802 - Standard Form of Agreement Between Owner and Trade Contractor (CM is Owner's Agent) - © 2007, Revised March 2012. THIS DOCUMENT MAY HAVE BEEN MODIFIED FROM THE STANDARD LANGUAGE, and a report of modifications can be generated through the ConsensusDocs platform. Purchase of the document permits the user to print one contract for each party to the contract within one project only. You may only make copies of finalized documents for distribution to parties in direct connection with this contract. Any other uses are strictly prohibited.

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 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 Contract Work in the case of multiple Trade Contract Work in the case of multiple Trade Contract Work in the case of cortrade 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 constructionmeans, 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 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)

X 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



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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 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



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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 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



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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.



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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



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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 profits not related to this Project, loss of business, loss of financing, principal office overhead and expenses, loss of profits not related to this Project, loss of business, loss of financing, principal office overhead and expenses, loss of profits not related to this Project, 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 Contract result 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



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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



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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 cancelation 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 Contract 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 X 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. f 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 be 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 propertyinsurance, 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



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 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 Contractor 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.)

X 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

X 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 lowa 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 Iaw. 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 Iaw, then the Trade Contractor must specifically identify in writing with its bid any and all preferences or preferential treatment (including preferences related to Iabor) enforced by the state or foreign country in which the Trade Contractor is a resident. If the Iow 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 lowa 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.		



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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.

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 Princip	al andas
Surety ("Surety"), are bound to the Owner as Ob	igee in the maximum amount of
	Dollars (\$) (the
"Bond Sum"). The Constructor and Surety hereb	y 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	(sea)
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)	

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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.

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 "C	wner")
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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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.

SURETY	(seal)
Ву:	
Print Name:	
Print Title:	
(Attach Power of Attorney)	
Witness:	
CONSTRUCTOR	(sea
Ву:	
Print Name:	

2

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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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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: Hoover Building, 1305 East Walnut Street, Des Moines, Iowa 50319
- B. DAS Project #: 9426.00
- 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: Jennie Elliott, Iowa Department of Administrative Services, 109 SE 13th Street, Des Moines, IA 50319
- E. Construction Manager: Jarrad Boever, DCI Group, 220 SE 6th Street, Suite 200 Des Moines, IA 50309

1.03 PROJECT SUMMARY

- A. The project includes the renovation of the 5th floor of the Hoover office building, including architectural, mechanical, plumbing, technology, fire sprinkler, electrical, and structural.
- B. Target date to provide substantial completion is June 19, 2025.

1.04 BID SCOPE SUMMARY

- A. Scope Applicable to All Bid Packages:
 - 1. 01 1201 General Work Requirements
 - 2. 01 1202 Special Work Requirements
 - 3. 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.
 - 4. 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.

- 5. On site supervision by Prime Contractor at all times work by that contractor or their subcontractors/suppliers is taking place.
- 6. 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. No job office trailers will be permitted onsite.
- 7. 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.
- 8. 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.
- 9. 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 4:00 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.

1.07 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. Contractor shall utilize the elevator shaft for vertical access as much as feasible. Use of the interior stairwell will need to be scheduled.
- C. All construction workers must have a background check completed prior to entering the campus to perform work. Name, birth date, gender, and social security numbers will be required for these background checks. <u>Contractors will be responsible for the cost</u> <u>associated with the background checks which is \$15.00 per request.</u>
- D. Hot Work Permit Processes and Fire Watch, when necessary, will be adhered to for this project.
 - 1. Fire Watch: Written request will be required four days in advance of work. When the fire alarm system must be put in bypass or test, the contractor shall provide personnel at the fire alarm panel to continuously monitor the panel. The personnel shall be required to

meet with State prior to fire watch for training. Anticipate less than one hour for training. If the fire detection systems will be disabled, the contractor shall also provide sufficient personnel dedicated to fire watch only in the areas disabled and maintain a fire watch log. Template notifications, procedures, and logs are available for the contractor's use.

- 2. Hot Work: Hot work shall be conducted per OSHA guidelines. It will be the responsibility of the contractor to provide personnel for fire watch and to maintain a fire watch log.
- E. All State properties are tobacco free. No smoking will be permitted or tolerated on campus unless in designated areas.
- F. You are permitted access only to the work site and no other area of the institution.
- G. No drugs, alcohol, or firearms are allowed on the work site.
- H. Do not leave money, drugs, alcohol, or firearms in your personal vehicle.
- I. Company and personal vehicles are to be parked and locked in designated or authorized area of the work. Contractor parking shall be located at the Terrace Hill parking lot at the intersection of Grand Avenue and Forest Drive or at available street parking.
- J. Secure all tools at the end of the day.
- K. Maintain control of all tools, supplies, and debris at all times during the work.
- L. All delivery vehicles shall be scheduled with DCI Group 24 hours in advance.
- M. During an emergency, follow the instructions of the security staff.
- N. Any shutdowns to existing systems will need to be coordinated seven (7) business days in advance and will need reviewed with DCI Group and the States maintenance personnel.

1.09 BID PACKAGE INSTRUCTIONS

- A. **Bid Package #01** General Construction: Trade Contractor shall include all of the following, but not limited to, as part of the contract:
 - 1. Includes specification:
 - a. Division 00 Procurement and Contracting Requirements
 - b. Division 01 General Requirements
 - c. 02 4100 Demolition
 - d. 03 3000 Cast-in-Place Concrete
 - e. 05 1200 Structural Steel Framing
 - f. 06 4100 Architectural Wood Casework
 - g. 07 2100 Thermal Insulation
 - h. 07 9200 Joint Sealants
 - i. 08 1213 Hollow Metal Frames
 - j. 08 1416 Flush Wood Doors
 - k. 08 3100 Access Doors and Panels
 - I. 08 4313 Aluminum-Framed Storefronts
 - m. 08 7100 Door Hardware
 - n. 08 8000 Glazing
 - o. 09 0561 Common Work Results for Flooring Preparation
 - p. 09 09 2116 Gypsum Board Assemblies
 - q. 09 5100 Acoustical Ceilings
 - r. 09 9123 Interior Painting
 - s. 09 9123 Interior Painting
 - t. 10 2226 Operable Partitions Acousti-Seal Encore
 - u. 10 2600 Wall and Door Protection
 - v. 10 2800 Toilet, Bath, and Laundry Accessories
 - w. 12 3600 Countertops
 - 2. General
 - a. This contractor shall be responsible for providing dumpster service for all bid packages for the duration of the project.
 - b. Cleaning and sealing of existing concrete, as called for in the finish schedule, shall be the responsibility of this contractor.

- c. Any penetrations created by this contractor, whether from demolition of existing systems or installation of new, shall be sealed by this contractor to match adjacent surface and rating.
- 3. Temporary Construction
 - a. When construction may impact occupied areas this contractor shall install, maintain, and remove a temporary partition separating the construction area from the general public. Temporary walls may be constructed with a ZipWall or similar system with two means of egress. Coordinate with the Construction Manager on temporary wall and exit locations.
 - b. The contractor is responsible for signage as needed to maintain life safety while temporary partitions are in place.
 - c. This contractor shall be responsible for protecting finishes to remain in areas outside of the construction area from the construction area to the freight elevator.
- 4. Demolition
 - a. This Contractor shall, in cooperation with the Construction Manager, fully inspect and record existing conditions of existing construction to remain BEFORE demolition or removal begins. Documentation of existing conditions shall be submitted to the construction manager prior to the start of work. Any damage not previously identified and recorded will be replaced and/or repaired by this contractor at this contractor's expense.
 - b. Prior to the start of demolition, this bid package shall coordinate a meeting with DCI Group, the State, and bid packages 3, 4, and 5 to review existing systems to remain and systems that will remain live during demolition.
 - c. Contractor shall coordinate with other Bid Package Contractors prior to the start of demolition to ensure salvaged items have been removed and area has been deenergized.
 - d. Contractor is responsible for complete demolition scope per the contract documents including, but not limited to, drywall and furniture walls, doors, frames, flooring, window and frame, whiteboard, vinyl base, and misc. drywall. Removed by others will include, but not be limited to:
 - 1) Bid Package #03: Electrical lighting, bulbs, outlets, wiring, and pathways.
 - 2) Bid Package #03: Low-Voltage outlets, wiring, lighting controls, access controls, control wiring, and pathways.
 - 3) Bid Package #04: Mechanical duct, dampers, actuators, grilles, diffusers
 - 4) Bid Package #04: Controls thermostats and control wiring
 - 5) Bid Package #04: Plumbing pipe, valves, connections, floor and roof penetrations
 - 6) Bid Package #05: Fire Sprinkler sprinkler heads and piping
 - e. This contractor shall be responsible for the tray removal and disposal in H569.
 - f. Flooring removal shall include the removal of mastic to be sufficient for new flooring installation.
- 5. Framing and Finishes
 - This contractor shall be responsible for all drywall assemblies, including but not limited to, new framing, box headers, hard lids, insulation, drywall, and finishing. This includes above ceiling supports where necessary to adequately support walls that do not extend to the deck. Modification to existing ceiling panels for wall supports shall be the responsibility of this contractor.
 - b. Contractor shall layout all walls and coordinate a review with DCI Group and the State prior to installing track to verify no conflicts with in-floor tray system.
 - c. This contractor shall coordinate with the folding panel partition supports for the removable gypsum board panel install.
 - d. This contractor shall install all drywall control joints.

- e. Contractor shall be responsible for the removal, modification, and replacement of the existing vented ceiling panels where required for new installations by this contractor. Contractor shall take care in modification of existing panels to ensure penetrations / cuts will be covered by drywall installation.
- f. Provide all inwall blocking for contractor and owner supplied devices and equipment. A pre-install meeting shall be conducted with the other contractors, DCI Group, ISG, and the State to confirm blocking requirements and locations. This scope shall include removal and patching of drywall as needed for blocking installation.
- g. Contractor shall be responsible for all miscellaneous drywall infills and repairs / patching identified in the contract documents. This shall include patching walls where electrical, low voltage, and fire alarm devices, boxes, or conduit have been removed. An allowance of \$10,000 shall be included with the lump sum bid to address additional patching requested beyond those identified in the contract documents. Rates shall be mutually agreed upon between the contractor, DCI Group, and the State prior to proceeding with work. All additional work shall be provided to the DCI Group prior to beginning and time and material tickets shall be provided to the DCI Group superintendent and signed by DCI Group within one business day of work taking place. Requests for reimbursement for hours that are not accompanied by a DCI Group signed time and material ticket will not be approved.
- h. Contractor shall patch and skim walls where vinyl base has been removed to provide a smooth and consistent backing for new base and consistent wall finish.
- i. Contractor shall be responsible for infilling walls where stone base was removed by others, to provide a smooth and consistent backing for new base and consistent wall finish.
- j. This contractor shall provide and install a new access panel in Women's H515.
- 6. Casework
 - a. This contractor shall be responsible for the procurement and installation of all new casework, shelves, and countertops.
 - b. Solid surface transaction top and transaction tray shall be the responsibility of this contractor.
 - c. Contractor shall be responsible for countertop cutouts and shall coordinate with Bid Package #04 for sink and faucet templates.
- 7. Doors, Frames, Hardware, and Glazing
 - a. The contractor shall be responsible for accepting and installing all doors, frames, and hardware. Material to be provided by Owner through Doors Inc. Contractor shall coordinate with the Walsh contact for any requirements. Michael Milliken 515-979-9645 mmilliken@doorsinciowa.com.
 - b. This contractor shall be responsible for providing and installing all aluminum frames.
 - c. The transaction window glazing shall be provided by this contractor, including glass, aluminum channels, sealant, and speak holes.
 - d. This contractor shall be responsible for providing glazing for all doors and frames.
 - e. It shall be the responsibility of this contractor to complete the interior wall to mullion and the interior wall to glazing details. This shall include, but not be limited to, insulation, tape, and break metal.
 - f. All door hardware, including electrified hardware, for doors with access controls shall be installed by this contractor. Coordinate with Bid Package #03 for electrical connections and Owner access controls contractor for card reader connections.
 - g. The contractor shall include one return visit during the 11-month warranty period, and at the Owner's request, to review all doors installed by this bid package and adjust any doors not closing or locking properly.

- h. This contractor shall be responsible for installing all door accessories. This shall include, but not be limited to, door stops, astragals, silencers, closers, door position switches, kickplates, request to exit sensors, door mounted coat hooks, and coordinators.
- i. This contractor shall provide and install temporary frame spreaders. This Contractor will be responsible for anchoring wall framing to the hollow metal frames and verifying hollow metal frames remain plumb, level, and square after drywall is installed and before doors are installed.
- 8. Painting and Joint Sealants
 - a. Contractor is responsible for the complete painting scope of work per the contract documents. This shall include, but not be limited to, painting of ceiling, drywall, door frames, window frames, paintable sealants, and casework reveals.
 - b. As part of this scope, this contractor shall stencil all fire walls, fire barriers, fire partitions, smoke barriers, and smoke partitions all construction areas. See G1-21 of the construction documents for additional requirements.
 - c. Contractor is responsible for all sealant at transitions between a painted surface and dissimilar material. This shall include, but not be limited to, door and window frames (new and existing), casework, countertops, access panels, and fire extinguisher cabinets.
 - d. Install acoustical accessories and sealants at drywall/stud/track intersections with deck, floors or walls where required.
 - e. Provide all touch-ups of minor damage or marred surfaces.
 - f. Contractor shall anticipate multiple mobilizations into spaces to prime coat, 1st coat, and final coat walls and ceilings. The final coat shall not be applied until prior written approval by the Construction Manager.
 - g. This Contractor is to protect adjacent surfaces from one's work. This Contractor will be responsible for removing and cleaning any unintentional paint, stain, and finish from adjacent surfaces. This includes concrete floors.
- 9. Ceilings
 - a. Contractor shall be responsible for the installation of all ceilings, including acoustical ceilings, drywall lids, bulkheads, and soffits.
 - b. This contractor shall be responsible for the ceiling modifications to the existing ceilings to accommodate new construction. This shall include selective demolition and patching of the grid and new ceiling tiles to match existing in the area of work. All removed ceiling panels shall be salvaged and this contractor shall include the relocation of 50 ceiling panels, outside of what could be anticipated needing relocated from the construction drawings to address previously damaged panels.
 - c. Provide all fasteners, trim pieces, and grid wires as required to complete this scope of work including support of light fixtures.
 - d. Perimeter grid to be tight to wall; if a gap exists, it is the responsibility of this Contractor to fill the gap, so as to be aesthetically pleasing.
 - e. Contractor shall remove all marks left by clamps on the ceiling grid or provide clamps that will not mark the grid.
 - f. Minimize laps in the grid and place in discrete locations on main runners.
 - g. Where equipment is installed on ceiling tiles, it will be the responsibility of the contractor installing the equipment to mount it in the ceiling tile. It shall be the responsibility of Bid Package #01 to provide ceiling tile to other trades for install.
- 10. Specialties
 - a. This contractor shall be responsible for the installation of all fire extinguisher cabinets and fire extinguishers. All inspections shall be current on fire extinguishers prior to turnover.
 - b. This contractor shall be responsible for the operable partition wall, including all structural modifications and supports required for install.

c. It shall be the responsibility of this contractor to provide and install all grab bars and mirrors. This contractor shall also be responsible for installation of Owner supplied paper towel dispensers, soap dispensers, and toilet paper dispensers. All equipment shall have blocking installed behind and shall be anchored to the wall with fasteners.

11. Allowance

- a. Include lump sum Allowance of \$10,000.00 for miscellaneous drywall repairs. Contractor to submit invoices, delivery slips, and/or time sheets to show actual quantities to be signed off by construction manager at time of execution/delivery. Contractor shall provide time and material tickets to the DCI Group superintendent for signature within one business day of work taking place. Requests for reimbursement for hours that are not accompanied by a DCI Group signed time and material ticket will not be approved.
- B. **Bid Package #02** Flooring: Trade Contractor shall include all of the following, but not limited to, as part of the contract:
 - 1. Includes specification:
 - a. Division 00 Procurement and Contracting Requirements
 - b. Division 01 General Requirements
 - c. 09 0561 Common Work Results for Flooring Preparation
 - d. 09 6500 Resilient Flooring
 - e. 09 6813 Tile Carpeting
 - 2. Contractor is responsible for complete flooring scope including, but not limited to, carpet, luxury vinyl tile, vinyl base, and transitions. Sealing of existing concrete to remain exposed will be by Bid Package #01.
 - 3. Contractor is responsible for patching and leveling all existing subfloors as needed to achieve required tolerances for new flooring material.
 - 4. This contractor shall be responsible for subfloor testing requirements to ensure existing conditions meet manufacturer recommendations. Report results and deficiencies to the construction manager and designer before proceeding with work.
 - 5. This contractor shall coordinate with Bid Package #04 on strainer elevation during flooring work.
- C. **Bid Package #03** Electrical, Low Voltage, and Fire Alarm: Trade Contractor shall include all of the following, but not limited to, as part of the contract:
 - 1. Includes specification:
 - a. Division 00 Procurement and Contracting Requirements
 - b. Division 01 General Requirements
 - c. 02 4100 Demolition
 - d. 07 9200 Joint Sealants
 - e. 26 0010 Basic Electrical Requirements
 - f. 26 0505 Selective Demolition for Electrical
 - g. 26 0519 Low-Voltage Electrical Power Conductors and Cables
 - h. 26 0526 Grounding and Bonding for Electrical Systems
 - i. 26 0529 Hangers and Supports for Electrical Systems
 - j. 26 0533.13 Conduit for Electrical Systems
 - k. 26 0533.16 Boxes for Electrical Systems
 - I. 26 0533.23 Surface Raceways for Electrical Systems
 - m. 26 0553 Identification for Electrical Systems
 - n. 26 0583 Wiring Connections
 - o. 26 0923 Lighting Control Devices

- p. 26 2726 Wiring Devices
- q. 26 5100 Interior Lighting
- r. 27 5119 Sound Masking Systems
- s. 28 4600 Fire Detection and Alarm
- 2. General
 - a. Contractor shall be responsible for the removal, modification, and replacement of the existing vented ceiling panels where required for new installations by this contractor. Contractor shall take care in modification of existing panels to ensure penetrations / cuts will be covered.
 - b. Contractor is responsible for cutting all wall, floor, and roof openings for the electrical work. Contractor is responsible for all removal and replacement of materials that are impacted by this scope of work. Replacement of material shall match existing conditions.
 - c. Any penetrations created by this contractor, whether from demolition of existing systems or installation of new, shall be sealed by this contractor to match adjacent surface and rating. This shall include penetrations that remain from the demolition of through floor or through wall piping, duct, or pathways.
 - d. Contractor shall be aware that any shutdowns to systems that will affect occupied spaces may need to be conducted during non-business hours and shall be coordinated seven business days in advance. No additional compensation will be considered for this off-hours work.
 - e. This Contractor shall be responsible for all core drilling into the in-floor tray system and installation of Owner provided doghouse for all new electrical and low voltage installations. Contractor shall coordinate with the construction manager and furniture provider on the layout of furniture and floor boxes to confirm locations prior to install.
 - f. Prior to substantial completion, this contractor shall provide new and typed electrical panel schedule in all panels impacted by this project.
 - g. Include any filler plates, trim materials, or sealants which may be required between the work of this contract and the work of others where shown, or where required of allowable tolerances within the work of the contract and the adjacent work of others.
 - h. Provide Unistrut and other hanging devices as required to support any equipment provided in this bid package.
 - i. This Contractor is responsible to provide clean conduit and devices at the end of installation of all new construction installed by this Contractor.
 - j. Contractor to participate in all startup and commissioning required to bring the system up to full operation and control.
 - k. All new cabling shall be properly secured in conduit, J-hooks, or other cable management systems. Cabling shall not rest on ceilings.
 - I. This Contractor shall assume all liability for running electrical equipment until the turnover at the date of project completion.
- 3. Demolition
 - a. It shall be the responsibility of this contractor to disconnect and make safe all electrical and low voltage that may be impacted by demolition activities. Utilities that must remain in place to serve systems to remain, required for construction, or required for life safety shall be clearly marked and reviewed with the demolition contractor prior to the start of demolition activities. Notify the Construction Manager when areas are ready so the demolition crews can begin.
 - b. Prior to the start of demolition, this bid package shall participate in a meeting with DCI Group, the State, and bid packages 1, 3, 4, and 5 to review existing systems to remain and systems that will remain live during demolition.

- c. This contractor shall complete all electrical disconnects and demolition, including but not limited to, light fixtures, devices, wiring, and pathways.
- d. It shall be the responsibility of this contractor to remove and properly dispose of the existing self-illuminated Tritium exit signs. Disposal methods shall be documented and turned over to DCI Group.
- e. All systems to be abandoned in place shall be clearly marked on contractor's asbuilt documentation to be turned over at the end of the project.
- 4. Electrical
 - a. Contractor is responsible for all electrical scope including, but not limited to, new electrical, overrides, panels, breakers, and receptacles. This shall also include all in-floor circuiting and electrical trim out at doghouses.
 - b. This contractor shall be responsible for obtaining an electrical permit for work performed by this bid package. Copies of permit requests, inspections reports, and closed permits shall be provided to the Construction Manager.
 - c. At the start of construction, this contractor shall review all panel locations to verify room for installation and code required clearances. Any discrepancies shall be brought the construction manager and designer immediately.
 - d. This contractor shall mark all new walls with red paint on the studs when in-wall rough-ins by this package are complete and ready for drywall.
 - e. Where electrical pathways and conductors are called to be extended, it shall be the responsibility of this contractor.
 - f. Where recessed boxes are abandoned but not removed, it shall be the responsibility of this contractor to provide and install new blank face plates.
 - g. Contractor is responsible for the installation of Owner provided furniture harnesses. Coordinate locations and requirements with Owner.
 - h. Where electrical or low voltage devices are shown to be salvaged and reinstalled, it shall be the responsibility of this contractor.
 - i. This contractor shall be responsible for providing pathways, circuiting, and power connections to all mechanical and electrical equipment and controllers. This contractor shall coordinate with the trades providing the equipment and with the approved submittals.
 - j. This Contractor shall wire all integral disconnects/starters for Mechanical Equipment. The Mechanical Contractor shall provide all integral disconnects/starters for mechanical equipment.
 - k. This Contractor shall provide and install all non-integral disconnects for mechanical equipment.
 - I. Contractor shall be required to label all electrical receptacles per Owner's labeling requirements. Coordinate with Owner on requirements.
 - M. All door hardware, including electrified hardware, for doors with access controls shall be supplied by the Owner through Doors Inc. and installed by Bid Package #01. Bid Package #03 shall be responsible for electrical connections.
- 5. Lighting
 - a. This contractor shall be responsible for the complete scope of the lighting installation, including but not limited to, rewiring existing circuits as needed, new fixtures, emergency lighting, bulb replacement, switching, overrides, and lighting controls.
 - b. Bid Package #04 will be responsible for the building automation system connection and programing for lighting controls. It will be the responsibility of Bid Package #03 to provide and install all lighting control devices and equipment. This contractor shall coordinate with Siemens, the State of Iowa's building automation systems contractor, on requirements and Bid Package #04 scope prior to bid to confirm scope. The State's contact at Siemens for this project is Brandon Wagoner, (515) 414-5810 brandon.wagoner@siemens.com

- c. This contractor shall be responsible for OSHA compliant lighting levels in all areas of work. Existing light fixtures may be utilized for construction lighting.
- d. It shall be the responsibility of this contractor to complete all emergency lighting, including but not limited to, connection of light fixtures to emergency circuit, transfer devices, exit signs, and labeling of emergency fixtures.
- e. This contractor shall be responsible for replacing all light bulbs in the existing light fixtures with new LED bulbs provided by Owner.
- 6. Low Voltage
 - a. This contractor shall be responsible for all in wall or above ceiling low voltage and technology rough-ins including, but not limited to boxes and conduit stubbed above ceiling. This shall include rough-ins for Owner provided access controls. In floor low voltage cabling to furniture systems will be completed by the Owner's vendor ICN.
 - b. Termination, testing and labeling of low voltage to be done by (ICN). Contractor will be responsible to coordinate with owner, construction manager and ICN.
 - c. This contractor shall be responsible for bringing all new cabling into IT closets and clearly labeling cabling for Owner connection to Owner provided patch panels. Cabling shall be neatly coiled into IT closets with sufficient slack for Owner connection. Contractor shall coordinate with Owner on labeling and slack
 - d. requirements.
 - e. Contractor shall be required to label all data receptacles per Owner's labeling requirements. Coordinate with Owner on requirements.
 - f. This contractor shall include one post occupancy visit onsite to adjust lighting control sensors based on Owner feedback.
- 7. Audio & Visual
 - a. This contractor shall be responsible for pathways, junction boxes, and back boxes for all audio and visual technologies. Audio and visual equipment will be provided and installed by Owner's vendor CTI.
 - b. This contractor shall be responsible for maintaining the existing public announcement system and testing the system after drywall and ceiling installs to review if announcements can be heard in all rooms. Coordinate with DCI Group and the State on testing of this system.
- 8. Fire Alarm
 - a. Contractor to swap out all smoke heads (save for reinstall) to heat heads and reprogram during construction in the affected areas. This shall include coordination with fire alarm monitoring company, DCI, and owner. The contractor shall provide personnel for fire alarm panel monitoring while system is in bypass. The personnel monitoring panel will need to undergo up to 30 minutes of training with DAS personnel. The contractor will also be responsible for the reinstallation and reprogramming of the smoke heads at the end of the project. Heat heads to be turned over to the owner.
 - b. This contractor shall be responsible for protection of existing horn and strobe devices to remain.
 - c. This contractor shall be responsible for all new fire alarm installation, including but not limited to, horns, strobes, and detection systems.
 - d. Where fire alarm pathways and conductors are called to be relocated and/or extended, it shall be the responsibility of this contractor.
- D. **Bid Package #04** Mechanical and Plumbing: Trade Contractor shall include all of the following, but not limited to, as part of the contract:
 - 1. Includes specification:

- a. Division 00 Procurement and Contracting Requirements
- b. Division 01 General Requirements
- c. 02 4100 Demolition
- d. 07 2100 Thermal Insulation
- e. 07 9200 Joint Sealants
- f. 22 0000 Plumbing
- g. 23 0000 Mechanical
- 2. General
 - a. Shutdowns of mechanical and plumbing systems shall be coordinated with the Construction Manager seven (7) business days in advance of work.
 - b. Contractor shall be responsible for the removal, modification, and replacement of the existing vented ceiling panels where required for new installations by this contractor. Contractor shall take care in modification of existing panels to ensure penetrations / cuts will be covered.
 - c. Include any filler plates, trim materials, or sealants which may be required between the work of this contract and the work of others where shown, or where required of allowable tolerances within the work of the contract and the adjacent work of others.
 - d. Contractor to protect the existing mechanical and plumbing items that are to remain. Contractor is responsible for cleaning existing items before tying them into the new system. Verify existing items that are to be removed and reinstalled are in working order before removing.
 - e. Contractor is responsible for cutting all wall, floor, and roof openings for the mechanical and plumbing work. Contractor is responsible for all removal and replacement of materials that are impacted by this scope of work. Replacement of material shall match existing conditions.
 - f. Provide Unistrut and other hanging devices as required to support any equipment provided in this bid package.
 - g. This Contractor is responsible to provide clean duct, piping, and devices at the end of installation of all new construction installed by this Contractor.
 - h. Contractor to participate in all startup and commissioning required to bring the system up to full operation and control.
 - i. Prior to the start of demolition, this bid package shall participate in a meeting with DCI Group, the State, and bid packages 1, 3 and 5 to review existing systems to remain and systems that will remain live during demolition.
 - j. Any penetrations created by this contractor, whether from demolition of existing systems or installation of new, shall be sealed by this contractor to match adjacent surface and rating. This shall include penetrations that remain from the demolition of through floor or through wall piping, duct, or pathways.
 - k. All piping and duct to be installed as high above ceiling as possible. Access to all equipment must be maintained to allow for routine maintenance i.e. access hatches and replacement of filters must be maintained with as little interference as possible.
 - I. This Contractor shall be responsible for all core drilling required for this scope of work. Core drill locations shall be submitted to Architect/Engineer for approval prior to proceeding with work. This shall include exact dimensional locations as well as sizes.
 - m. This contractor shall be aware that any work impacting occupants use of existing restrooms or water will need to be conducted during off hours. This shall also include above ceiling work on fourth floor that will impact existing in use office space. No additional compensation will be considered for off-hours work.
 - n. This Contractor shall assume all liability for running mechanical and plumbing equipment until the turnover at the date of project completion.
- 3. Demolition

- a. Contractor is responsible for complete disconnect and removal of all mechanical and plumbing systems called to be removed or abandoned.
- b. It shall be the responsibility of this contractor to disconnect and make safe all mechanical and plumbing that may be impacted by demolition activities. Existing plumbing shall be drained of water prior to the start of demolition activities excluding utilities that must remain active to maintain existing systems to remain active or for life safety.
- c. All plumbing shall be capped either permanently or temporarily until ready for new connections.
- d. Utilities that must remain in place to serve systems to remain, required for construction, or required for life safety shall be clearly marked and reviewed with the demolition contractor prior to the start of demolition activities.
- e. Contractor shall seal any duct openings that are created during the removal of existing ductwork. This shall include temporarily sealing ductwork openings that will remain open for a portion of the construction.
- f. All utilities to be abandoned in place shall be clearly marked on contractor's asbuilt documentation to be turned over at the end of the project.
- g. Contractor shall ensure sufficient systems remain in place to provide temporary cooling, heating, and dehumidification to all spaces. Any controls reprogramming required for temporary measures shall be included. Any openings, existing or created by construction that could result in dust infiltration into the mechanical systems shall be sealed or covered with construction filters. Construction filters shall be replaced at a minimum weekly or as needed. This contractor shall provide a plan for temporary conditioning to the Construction Manager for review prior to the start of demolition.
- h. Contractor shall salvage and turnover equipment as noted in the construction documents.
- i. Contractor shall be responsible for any demolition required to complete this bid packages scope to include ceiling demo. This will include the reinstallation and finishing of these areas back to their original condition.
- 4. Mechanical
 - a. This Contractor is responsible for the complete mechanical scope of work on this project, including but not limited to, ductwork, insulation, exhaust fans, VAVs, hydronic piping, grilles, and diffusers.
 - b. It shall be the responsibility of this contractor to complete the rooftop penetrations and gooseneck exhaust detail for the new exhaust fans. Contractor shall coordinate with the roof warranty holder, Brockway Mechanical & Roofing, for modifications and repairs to the EPDM roof. Contact is Nate Jennetten (515) 262-2528 njennetten@brockwaymechanical.com.
 - c. This Contractor is responsible for all connections to existing ductwork.
 - d. Contractor shall coordinate installation of ceiling diffusers with Bid Package #1.
 - e. This contractor shall be responsible for all mechanical insulation including repair of insulation damaged during removals.
 - f. This contractor shall be responsible for all testing and balancing. This shall include balancing existing VAVs to new airflows.
 - g. In all systems that require filters, this contractor shall provide and install new filters at substantial completion.
 - h. The Mechanical Contractor shall provide all integral disconnects/starters for Mechanical Equipment. Bid Package #03 shall wire all integral disconnects/starters for mechanical equipment.
 - i. Bid Package #03 shall provide and install all non-integral disconnects for mechanical equipment.
- 5. Plumbing

- a. This Contractor is responsible for the complete plumbing scope of work on this project. This shall include, but not be limited to, sanitary, water, venting, cleanouts, floor drains, and plumbing fixtures.
- b. This contractor shall be responsible for all plumbing insulation including repair of insulation damaged during removals.
- c. Procurement and installation of lavatory floor mount upright support shall be the responsibility of this contractor. Coordination with Bid Package #01 for installation prior to final framing and drywall will be the responsibility of this contractor.
- d. All pipes shall be clearly labeled to identify their use.
- e. This contractor will be responsible for the removal and reinstallation of ceiling panels on 4th floor to accommodate the new plumbing installations. All work on 4th floor will need to be conducted during off hours and all existing furniture, finishes, equipment, and personal belonging protected in the area. The area shall be put back to existing conditions before each workday.
- f. This contractor shall be responsible for the complete floor drain assemblies including, but not limited to, piping, trap primers, seals, clamps, collars, and waterproof membranes. This contractor shall be responsible for concrete removals and replacement, including sloping around the drain. Coordinate with Bid Package #02 for confirming strainer elevation during flooring installation.

6. HVAC & Lighting Controls

- a. This contractor shall be responsible for salvaging all thermostats to be replaced or on walls to be demolished. Existing thermostats shall be turned over to the Owner.
- b. This bid package will be responsible for the entirety of the HVAC controls and for the building automation system connection and programing for lighting controls. It will be this contractor's responsibility to coordinate with Siemens, the State of lowa's building automation systems contractor, and the Bid Package #03 scope prior to bid to confirm scope. The State's contact at Siemens for this project is Brandon Wagoner, (515) 414-5810 brandon.wagoner@siemens.com
- c. Include lump sum Allowance of \$20,000.00 for procurement and programming of HVAC and lighting controls through Siemens. Contractor to submit invoices, delivery slips, and/or time sheets to show actual quantities to be signed off by construction manager at time of execution/delivery.
- E. **Bid Package #05** Fire Sprinkler: Trade Contractor shall include all of the following, but not limited to, as part of the contract:
 - 1. Includes specification:
 - a. Division 00 Procurement and Contracting Requirements
 - b. Division 01 General Requirements
 - c. 02 4100 Demolition
 - d. 07 9200 Joint Sealants
 - e. 21 0000 Fire Protection
 - 2. General
 - a. Contractor shall be responsible for the removal, modification, and replacement of the existing vented ceiling panels where required for new installations by this contractor. Contractor shall take care in modification of existing panels to ensure penetrations / cuts will be covered.
 - b. Shutdowns of systems shall be coordinated with the Construction Manager seven
 (7) business days in advance of work.
 - c. Include any filler plates, trim materials, or sealants which may be required between the work of this contract and the work of others where shown, or where required of allowable tolerances within the work of the contract and the adjacent work of others.
 - d. Contractor to protect the existing fire suppression items that are to remain. Contractor is responsible for cleaning existing items before tying them into the new

system. Verify existing items that are to be removed and reinstalled are in working order before removing.

- e. Contractor is responsible for cutting all wall, floor, and roof openings for the fire protection work. Contractor is responsible for all removal and replacement of materials that are impacted by this scope of work. Replacement of material shall match existing conditions.
- f. Provide Unistrut and other hanging devices as required to support any equipment provided in this bid package.
- g. This Contractor is responsible to provide piping and devices at the end of installation of all new construction installed by this Contractor.
- h. Prior to the start of demolition, this bid package shall participate in a meeting with DCI Group, the State, and bid packages 1, 3 and 5 to review existing systems to remain and systems that will remain live during demolition.
- i. Any penetrations created by this contractor, whether from demolition of existing systems or installation of new, shall be sealed by this contractor to match adjacent surface and rating. This shall include penetrations that remain from the demolition of through floor or through wall piping, duct, or pathways.
- j. All piping to be installed as high above ceiling as possible. Access to all equipment must be maintained to allow for routine maintenance i.e. access hatches and replacement of filters must be maintained with as little interference as possible.
- k. This Contractor shall be responsible for all core drilling required for this scope of work. Core drill locations shall be submitted to Architect/Engineer for approval prior to proceeding with work. This shall include exact dimensional locations as well as sizes.
- 3. Fire Sprinkler
 - a. This contractor shall be responsible for the complete scope for fire sprinkler modifications. This shall include, but not be limited to, removals, relocations, and new installations.
 - b. This contractor shall review the existing conditions onsite and confirm existing and new sprinkler head types meet code requirements.
 - c. This contractor shall be responsible for all authority having jurisdiction submittals, permits, and inspections related to the fire sprinkler system.
 - d. This shall include coordination with fire alarm monitoring company, DCI, and owner for tag out of the fire alarm system anytime modifications are taking place. The contractor shall provide personnel for fire alarm panel monitoring while system is in bypass. The personnel monitoring panel will need to undergo up to 30 minutes of training with DAS personnel. If the fire detection systems will be disabled, the contractor shall also provide sufficient personnel dedicated to fire watch only in the areas disabled and maintain a fire watch log.
- F. **Alternate #01** Sound Masking: Trade Contractor shall include all of the following, but not limited to, as part of the contract:
 - 1. Contractor shall provide and install a complete above ceiling sound masking system. This shall include, but not be limited to, all emitters, accessories, cabling, supports, sound masking generator, controller, band equalizer, amplifier, and rack mount kit.
 - 2. Contractor shall provide a submittal showing proposed layout of emitters based on manufacturer recommendations.
 - 3. Programming, startup, and Owner training of the system is by this contractor. Connections to the Owner network will be installed by others.
 - 4. Contractor shall assume a minimum of 3 hours for Owner training onsite. Contractor shall be responsible for providing a training agenda for review in advance.
 - 5. Contractor shall include one post occupancy visit to adjust sound masking based on Owner feedback.
 - 6. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
- 7. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- 8. Execute accepted alternates under the same conditions as other work of the Contract.
- G. **Alternate #02** Thermostat Replacement: Trade Contractor shall include all of the following, but not limited to, as part of the contract:
 - Contractor shall replace all existing thermostats in offices, conference rooms, and open office spaces on 5th Floor with new thermostats. This does not include corridors and shared restrooms.
 - 2. This shall include all controls work associated with these replacements. At no time shall the floor or building be without conditioning during this work.
 - 3. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 4. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
 - 5. Execute accepted alternates under the same conditions as other work of the Contract.
- H. Work Performed by Owner: The State of Iowa will perform the following work items:
 - 1. Relocate all moveable furniture, fixtures and equipment (FF&E), including window treatments; and personal materials from each sequenced work area prior to demolition and construction activities and after new construction is completed.
 - 2. Access controls cabling, device installation, terminations, trim out, and programming.
 - 3. Low voltage cabling, testing, and terminations.
 - 4. In-floor electrical demolition and capping.
 - 5. Furniture installation.
- I. **Owner Furnished Products:** The State of Iowa will provide the following materials for installation by the contractor:
 - 1. Furniture
 - 2. Electrical and low voltage doghouses

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

SECTION 00 7302

GENERAL WORK REQUIREMENTS

1.01 BIDDING

- A. The Contractor shall include all applicable fees, permits, freight, hoisting, scaffolding, clean up, supervision, overhead, etc. to perform his work.
- B. 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.
- C. 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.
- D. 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.
- E. 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.
- F. 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.
- G. All Contractors are responsible for on-the-job supervision of their work, or any subcontracted work. <u>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.</u> 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.
- H. 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.
- I. Tools, materials, and equipment storage and security is the responsibility of each Contractor.
- J. All work shall comply with the applicable codes and standards adopted by the Authority having Jurisdiction.
- K. 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.
- L. All contractors must have the appropriate licenses to perform work in the jurisdiction(s).
- M. 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.

- N. 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.
- O. The Contractor will be required to attend all pre-installation conferences before commencement of related work.
- P. 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.

1.02 SAFETY

- A. The contractor shall comply with all local and federal, safety and health requirements.
- B. The contractor will provide a safety plan customized for the project to DCI Group.
- C. 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.
- D. 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.
- E. 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.
- F. Contractors performing hot work are to have a fire extinguisher in their work areas at all times as applicable.
- G. All Contractors are responsible for their own fall protection.
- H. 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.
- I. 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.
- J. No fire exit can be blocked at any time.

1.03 SITE MANAGEMENT

- A. 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.
- B. 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.

- C. 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.
- D. All contractors/vendors are responsible for their own cutting and patching unless otherwise specified.
- E. All contractors are responsible for maintaining dust control during their work. Contractor will provide a dust control plan customized for the project to DCI Group.
- F. Contractors shall be responsible for maintaining traffic control coordination with the Owner, DCI Group, and the Authority Having Jurisdiction.
- G. 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.
- H. 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.
- I. 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.
- J. 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.
- K. Any areas disturbed or damaged by one's operation are to be repaired to Owner/Construction Manager's satisfaction.
- L. The Contractor shall clean their installed materials prior to the next successor activity.
- M. 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.
- N. 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.
- O. 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.
- P. 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.
- Q. 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.
- R. 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 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 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.
- S. 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.

- T. 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.
- U. All contractors are responsible for familiarizing themselves with the coordination and sequencing requirements related to Owner furnished equipment.
- V. 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.

1.04 SCHEDULE MANAGEMENT

- A. 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.
- B. 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.
- C. All Contractors shall cooperate with the Construction Manager and with other Contractors. The completion of the Work will depend upon a collective effort by all parties involved.

1.05 GENERAL HOUSEKEEPING

A. 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.

- B. 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.
- C. 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.

SPECIAL WORK REQUIREMENTS

1.01 GENERAL

- A. Bidders are to hold their bids for a period of thirty (30) days after the bid.
- B. Contractors and their employees shall show upmost respect for the occupying students and staff. Profanity and unnecessary loud language will not be tolerated.
- C. 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.
- D. All contractors working on site shall be required to pass State of Iowa background checks.
- E. The use of motorized scissor lifts will not be allowed except under special circumstances and must have prior approval from the Construction Manager.
- F. All deliveries must be accepted by the Contractor.
- G. 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.
- H. Contractor includes complete cleanup and haul off to dumpster (Provided by Bid Package #01) for all typical construction debris resulting from this scope of work. 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.
- I. 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.
- J. Contractors working on roofs are required to take appropriate precautionary measures to protect existing roofing from damage. Contractors are required to take all precautionary measures necessary to ensure that their items do not fall or blow off the roofs.
- K. 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.
- L. 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.
- M. The Prime Contractor's shall provide the Construction Manager detailed information as outlined below for the purpose of developing the Construction Schedule:

a. SUBMITTALS:

- i. 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.
- ii. Format: Submittal Schedule shall be prepared in an Excel spreadsheet.
- iii. 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.
- N. See preliminary construction schedule in Section 00 3113. This schedule will aid the bidder(s) in understanding the preliminary scheduling and planning for the project. As the construction schedule is finalized the <u>Prime Contractor and their Subcontractors</u> 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.

- O. 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.
- P. The Owner owns the Owners schedule contingency as shown in the preliminary construction schedule on the following pages. The Construction Manager manages and will adjust the schedule contingency. As days are not utilized the substantial completion dates shall be adjusted accordingly.
- Q. Expected work hours will be 7:00 AM to 4:00 PM Monday thru Friday (5 day work week). Four ten hours days may also be acceptable if agreeable by all contractors, the construction manager, and the State. 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.
- R. After contract award bid the Contractor is required to attend a meeting with the Construction Manager to review bid package scopes.
- S. 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.
- T. The jobsite is on Public Property. Smoking or smokeless tobacco <u>WILL NOT</u> be allowed. Also, no shelled sunflower seeds are allowed inside the enclosed facility.
- U. No radios or headsets are allowed in the construction areas.
- V. 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.
- W. 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.

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.

SUBSTITUTION REQUEST FORM

Project:	Substitution Request Number:
	From:
То:	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 Differences between proposed substitution and speci	0 yrs old ☐ More than 10 years old
Point-by-point comparative data prepared by cont	ractor 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
Supporting Data Attached: Drawings Prod	duct Data 🗌 Samples 🗌 Tests 🗌 Reports 🔲

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 a	as necessary for acce	pted substitution will be com	plete in all respects.

Submitted by:				
Signed by:				
Firm:				
Address:				
Telephone:				
Attachments:				
A/E's REVIEW A	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 🗌	

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 predetermined 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**

PAYMENT PROCEDURES

PART1- GENERAL

1.01 SECTION INCLUDES

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

1.02 SCHEDULE OF VALUES

- A. Coordination: Trade Contactor 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 30th of any year needs to be submitted by July 15th 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 5% of the value of the work performed. Upon substantial completion for the entire work, a sum sufficient to decrease the total retained to 5% 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

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. Background Checks
- G. Notifications for Capitol Complex
- H. Fire Watch for Capitol Complex

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.
 - 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.
 - 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 BACKGROUND CHECKS

- A. Background checks must be performed on all on site employees, including sub-contractors.
- B. The Contractor hereby explicitly authorized the Iowa DAS to conduct criminal history and/or other background investigation(s) of the Contractor, its officers, supervisory personnel, employees, and other staff retained by the Contractor or their sub-contractors for the performance of the contract.
- C. A state of Iowa record check request form will be provided at the pre-construction meeting. Information required may include:
 - 1. Last Name
 - 2. First Name
 - 3. Middle Name
 - 4. Date of Birth
 - 5. State Driver's License or State ID #
 - 6. Social Security #

3.06 NOTIFICATIONS FOR CAPITOL COMPLEX

- 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.

3.07 FIRE WATCH FOR CAPITOL COMPLEX

- 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.

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 Lo	ocations within]	Building:			
Hours of W	Vork:			_	
Impact: disruption	[] Parking	[] Noise	[] Odors	[] Equipment	[] Other
[][Dust [] Fir	e Alarm [] H	IVAC []P	lumbing/Restroom	[] Lighting
[] P	ower/Electrical	[] Private/F	Public Utility Lo	ocate []	
Escort:	[] Required	[] Not Req	uired	[] Need assistance	to determine
Additional	Information: (o	r attached ma	np/drawing of a	ffected 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

Procore. As recommendations are modified by **Procore**, 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 **Procore** 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. **Procore** 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 **Procore** 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 **Procore** to the maximum extent possible. If a form does not exist in **Procore** 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 **Procore** (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 **Procore** 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 **Procore**.

1.06 CONNECTIVITY PROBLEMS

A. Procore 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. Procore 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 Procore 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 Procore 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 Procore 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. **Procore** project management application (no equal) Provided by Procore Technologies, Inc. www.**Procore**.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
 - 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

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 preconstruction 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.

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.

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.

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. 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. Contractors will be allowed to utilize the existing facilities on the Hoover 5th Floor. Contractor shall be respectful of the existing facilities and keep the clean and orderly. Abuse of the existing facilities will result in temporary facilities being provided outdoors at the contractors expense.
 B. Meintein daily in clean and conitory condition
- 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-ofway.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

3.04 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.

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 slopped 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.

EXECUTION

PART1- 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 1/4 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 be 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?
Q Yes
No

Final Completion Project Checklist

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?
Q Yes
No

SECTION 02 4100 DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Building demolition excluding removal of hazardous materials and toxic substances.
- B. Selective demolition of building elements for alteration purposes.

1.02 REFERENCE STANDARDS

- A. 29 CFR 1926 Safety and Health Regulations for Construction; Current Edition.
- B. NFPA 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.03 SUBMITTALS

- A. Site Plan: Indicate:
 - 1. Areas for temporary construction and field offices.
 - 2. Areas for temporary and permanent placement of removed materials.
- B. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs.
 - 1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.
 - 2. Summary of safety procedures.
 - 3. Demolition firm qualifications.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 DEMOLITION

- A. Remove portions of the existing building in the sequence necessary to accomplish new work.
- B. Remove other items indicated, for salvage, relocation, and recycling.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Coordinate haul routes.
 - 3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 4. Provide, erect, and maintain temporary barriers and security devices.
 - 5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
 - 6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 7. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
 - 8. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
 - 9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.
- D. Do not begin removal until vegetation to be relocated has been removed and vegetation to remain has been protected from damage.

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- E. Protect existing structures and other elements to remain in place and not removed.
 - 1. Provide bracing and shoring.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- F. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- G. Hazardous Materials:
 - 1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

3.03 EXISTING UTILITIES

- A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 7 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
 - 1. Verify construction and utility arrangements are as indicated.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from areas that remain occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction necessary to prevent noise and debris from effecting areas outside the construction area.
 - 2. Provide walk-off mats as required to separate demolition and construction from existing building.
- C. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- D. Remove existing work as indicated and required to accomplish new work.
 - 1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction indicated.
 - 2. Remove items indicated on drawings.
 - 3. Relocate items indicated on drawings.
 - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

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- E. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 - 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 - 3. Verify that abandoned services serve only abandoned facilities before removal.
 - 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.
- F. Protect existing work to remain.
 - 1. Prevent movement of structure. Provide shoring and bracing as required.
 - 2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
 - 4. Patch to match new work.
- G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
 - 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
 - 2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
 - 3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
 - 4. Modify existing doors as necessary to clear new floor finishes. Refinish door, frame and trim as required.
- H. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- I. Refinish existing surfaces as indicated:
 - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- J. Clean existing systems and equipment.
- K. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- L. Do not begin new construction in alterations areas before demolition is complete.
- M. Comply with all other applicable requirements of this section.

3.05 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Remove from site all materials not to be reused on site; do not burn or bury.
- C. Leave site in clean condition, ready for subsequent work.
- D. Clean up spillage and wind-blown debris from public and private lands.
- E. Assume full responsibility for acceptable disposition of removal materials and for damages resulting from disposal operations.

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END OF SECTION

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SECTION 03 3000 CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES -- (INCLUDED FOR MINOR CONCRETE WORK ONLY)

- A. Concrete formwork.
- B. Floors and slabs on grade.
- C. Concrete foundation walls.
- D. Concrete reinforcement.
- E. Joint devices associated with concrete work.
- F. Concrete curing.
- G. Concrete finishing.
 - 1. Floor surfaces to be left exposed.

1.02 RELATED REQUIREMENTS

- A. Section 07 9200 Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.
- B. Section Division 22 Plumbing Piping Specialties: Mechanical items for casting into concrete.
- C. Section Division 26 Grounding and Bonding for Electrical Systems: Electrical items for casting into concrete. Coordinate location with electrical contractor.

1.03 REFERENCE STANDARDS

- ACI CODE-318 Building Code Requirements for Structural Concrete and Commentary; 2019 (Reapproved 2022).
- B. ACI PRC-207.1 Mass Concrete Guide; 2021.
- C. ACI PRC-211.1 Selecting Proportions for Normal-Density and High Density-Concrete Guide; 2022.
- D. ACI PRC-302.1 Guide to Concrete Floor and Slab Construction; 2015.
- E. ACI PRC-304 Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).
- F. ACI PRC-305 Guide to Hot Weather Concreting; 2020.
- G. ACI PRC-306 Guide to Cold Weather Concreting; 2016.
- H. ACI PRC-308 Guide to External Curing of Concrete; 2016.
- I. ACI PRC-347 Guide to Formwork for Concrete; 2014 (Reapproved 2021).
- J. ACI SPEC-301 Specifications for Concrete Construction; 2020.
- K. ASTM A615/A615M Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2022.
- L. ASTM C1602/C1602M Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.
- M. ASTM C33/C33M Standard Specification for Concrete Aggregates; 2023.
- N. ASTM C39/C39M Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2023.
- O. ASTM C94/C94M Standard Specification for Ready-Mixed Concrete; 2024.
- P. ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2023.
- Q. ASTM C150/C150M Standard Specification for Portland Cement; 2022.
- R. ASTM C171 Standard Specification for Sheet Materials for Curing Concrete; 2020.
- S. ASTM C173/C173M Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2023.

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- T. ASTM C260/C260M Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).
- U. ASTM C309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.
- V. ASTM C494/C494M Standard Specification for Chemical Admixtures for Concrete; 2019, with Editorial Revision (2022).
- W. ASTM C595/C595M Standard Specification for Blended Hydraulic Cements; 2021.
- X. ASTM C618 Standard Specification for Coal Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2023, with Editorial Revision.
- Y. ASTM C685/C685M Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.
- Z. ASTM C1059/C1059M Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2021.
- AA. ASTM C1240 Standard Specification for Silica Fume Used in Cementitious Mixtures; 2020.
- BB. ASTM C1602/C1602M Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2022.
- CC. ASTM E1155 Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers; 2020.
- DD. ASTM E1643 Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.
- EE. ASTM E1745 Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2017 (Reapproved 2023).

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
- C. Mix designs: Submit mix design for each mix showing compliance with specified requirements.
- D. Test Reports: Submit report for each test or series of tests specified.
- E. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
- F. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI SPEC-301 and ACI CODE-318.
- B. Follow recommendations of ACI PRC-305 when concreting during hot weather.
- C. Follow recommendations of ACI PRC-306 when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
 - 2. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
 - 3. Form Ties: Contractor's choice of standard product type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT MATERIALS

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).

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- 1. Type: Deformed billet-steel bars.
- 2. Finish: Unfinished, unless otherwise indicated.
- B. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
 - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
 - 3. Do not use clay bricks or similar blocks/chunks of material as rebar chairs. Concrete dobies as rebar chairs are acceptable.

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C150/C150M, Type I Normal, Type II Moderate, Portland type; or ASTM C595/C595M, Type IL Portland-Limestone Cement Type.
 - 1. Acquire cement for entire project from same source.
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
 - 1. Acquire aggregates for entire project from same source.
 - 2. Provide aggregate free of shale at all slab locations exposed to freeze/thaw action, visible locations, and locations exposed to water.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Calcined Pozzolan: ASTM C618, Class N.
- E. Silica Fume: ASTM C1240, proportioned in accordance with ACI PRC-211.1.
- F. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

2.04 ADMIXTURES

- A. Chemical Admixture:
 - 1. Manufacturers by concrete supplier:
 - a. Euclid Chemical Company: www.euclidchemical.com/#sle.
 - b. Fritz-Pak: www.fritzpak.com/#sle.
 - c. GCP Applied Technologies: www.gcpat.com/#sle.
 - d. Mapei Corporation: www.mapei.com/#sle.
 - e. Master Builders Solutions: www.master-builders-solutions.com/#sle.
 - f. Sika Corporation U.S.: www.usa.sika.com/#sle.
 - g. Substitutions: See Section 01 6000 Product Requirements.
- B. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- C. Admixtures shall comply with ASTM C494/C494M.
- D. Air Entrainment Admixture: ASTM C260/C260M.

2.05 ACCESSORY MATERIALS

- A. Underslab Vapor <u>Barrier</u>: Polyethylene or equivalent, complying with ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. The use of single ply polyethylene is prohibited.
 - 1. Acceptable Products:
 - a. Stego Wrap 15 mil, Class A by Stego Industries, LLC: www.stegoindustries.com.
 - b. Moistop Ultra 15 mil, Class A by Henry Company: www.henry.com.
 - c. Vapor Block 15 mil, Class A by Raven Industries: www.vaporblock.com.
 - d. Viper VaporCheck II 15 mil by ISI Building Products: www.isibp.com.
 - e. WR Meadows 15 mil Perminator HP: www.wrmeadows.com.
 - f. Substitutions: See Section 01 6000 Product Requirements.
 - 2. Vapor Barrier Accessories: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations in vapor barrier.
- B. Non-Shrink Cementitious Grout: Premixed compound consisting of nonmetallic aggregate, cement, water reducing and plasticizing agents.
 - 1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
 - 2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.

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- C. Epoxy Grout Systems: Where indicated provide Hilti Hit-Hy 200 Epoxy System; other indicated systems; or approved equivalent system.
 - 1. Hilti: www.hilti.com.
 - 2. Substitutions: See Section 01 6000 Product Requirements.

2.06 BONDING AND JOINTING PRODUCTS

- A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
 - 1. Products:
 - a. SpecChem, LLC; Strong Bond Acrylic Bonder: www.specchemllc.com/#sle.
 - b. W. R. Meadows, Inc; ACRY-LOK: www.wrmeadows.com/#sle.
 - c. Substitutions: See Section 01 6000 Product Requirements.
- B. Expansion-Joint Filler: Polyethylene/polypropylene semi-rigid closed-cell backing complying with ASTM D 3575/ASTM D 8139/ASTM D 1751, 1/2 inch thick and full depth of slab less 1/2 inch with peel-off feature. Provide product by Master Builders Solutions, W.R. Meadows, Namaco, or equivalent.
 - 1. Place peel-off feature at top of slab when sealants are specified. Remove peel-off portion of expansion-joint filler prior to application of sealants.
 - 2. Place peel off feature at bottom of slab when no sealants are specified.
- C. Plate Dowel System: Steel plate dowel and plastic dowel sleeve; with integral fasteners for attachment to formwork.

2.07 CURING MATERIALS

1.

- A. Liquid Membrane Curing Compound: ASTM C309, Type 2, Class B, White Pigmented.
 - Product: L&M CURE R2 by Laticrete or approved equivalent.
 - a. Other Approved Products:
 - 1) SpecRez White by SpecChem.
- B. Moisture-Retaining Sheet: ASTM C171.
 - 1. White-burlap-polyethylene sheet, weighing not less than 3.8 ounces per square yard.

2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI PRC-211.1 recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI SPEC-301.
 - 1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- C. Admixtures: Add acceptable admixtures as recommended in ACI PRC-211.1 and at rates recommended or required by manufacturer.
- D. Materials In General: Do not use materials or combinations thereof that will result in a reaction that is detrimental to the structural integrity or visual appearance of concrete.
- E. Normal Weight Concrete: Refer to structural notes on the drawings.

2.09 MIXING

- A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.
- B. Transit Mixers: Comply with ASTM C94/C94M.
- C. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

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- A. Formwork: Comply with requirements of ACI SPEC-301. Design and fabricate forms to support all applied loads until concrete is cured and for easy removal without damage to concrete.
- B. Verify that forms are clean and free of rust before applying release agent.
- C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.
 1. Use latex bonding agent only for non-load-bearing applications.
- E. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- F. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade according to ASTM E1643 and manufacturer's written instructions; place sheets in position with longest dimension parallel with direction of pour.
 - 1. Vapor Retarder Over Granular Fill: Install compactable granular fill before placing vapor retarder as shown on the drawings. Do not use sand unless indicated otherwise.
 - 2. Install vapor barrier in lieu of retarder at indicated locations. Refer to accessory materials of this section.
 - 3. Level and compact base material.
 - 4. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise (a) at a point acceptable to the Architect or (b) where obstructed by impediments (such as dowels, waterstops, or any other site condition requiring early termination of the vapor barrier). At the point of termination, seal vapor barrier to the foundation wall, grade beam or slab itself.
 - 5. Lap joints minimum 6 inches and seal with manufacturer's recommended tape.
 - 6. Apply seam tape to a clean and dry vapor barrier.
 - 7. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions.
 - 8. Avoid the use of non-permanent stakes driven through vapor retarder.
 - 9. If non-permanent stakes are driven through vapor retarder, repair as recommended by vapor retarder manufacturer.
 - 10. Repair damaged vapor retarder before covering with vapor barrier material of similar (or better) permeance, puncture and tensile.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

A. Comply with requirements of ACI SPEC-301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI PRC-304.
- B. Place concrete for floor slabs in accordance with ACI PRC-302.1.
- C. Ensure reinforcement, inserts, and other similar items will not be disturbed during concrete placement.
- D. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 SLAB JOINTING

- A. Locate joints as indicated on drawings.
 - 1. If no pattern is shown, contractor shall provide for 15 by 15 feet saw cut areas and shall contact Engineer for exact locations of joints.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
 - 1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.

- D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 24 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.
 - 1. Do not exceed 2 inches deep when/if slab thicknesses are greater than 8 inches.
- E. Construction Joints: Where not otherwise indicated, use materials compatible with plate dowel system steel plate dowel and plastic dowel sleeves with integral fasteners for attachment to formwork.

3.06 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Refer to structural notes on the drawings.

3.07 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
 - 1. Where indicated install mechanical plugs for tie holes in accordance with manufacturers instructions.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide other finishes as follows:
 - Grout-Cleaned Finish (Class A per ACI PRC-347): Wet concrete surfaces and apply grout of a consistency of thick paint to coat surface and fill small holes. Mix one part portland cement to one and one-half parts fine sand with 1:1 moisture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
 - a. Locations: Provide this finish only where indicated on the drawings.
- D. Concrete Slabs: Finish to requirements of ACI PRC-302.1 and as follows:
 - 1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI PRC-302.1; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
 - 2. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.
 - a. Installation of sealant is recommended prior to installation of floor sealers to prevent the need for cleaning of saw cut joints for proper sealant adhesion.
 - b. Chemical Curer/Sealer/Dustproofer/Hardener(When Applicable): Apply product per manufacturer's instructions after curing and protection procedures are complete.
 - 1) Acceptable Product:
 - (a) Laticrete International, Inc: www.laticrete.com/#sle.
 - (b) Product: L&M Dress & Seal WB/WB 30; Acrylic Cure, Sealer, and Dustproofer.
 - (1) Location: Storage/mechanical/exposed areas not to receive other finishes.
 - (c) Product: L&M Seal Hard; Concrete Sealer, Densifier, Chemical Hardener.
 (1) Location: Garage/shop/warehouse type areas.
 - 2) Other Acceptable Manufacturers:
 - (a) Dayton Superior Corporation: www.daytonsuperior.com/#sle.
 - (b) Master Builders Solutions: www.master-builders-solutions.com/#sle.
 - (c) Ashford Formula by Curecrete Distribution, Inc: www.ashfordformula.com/#sle.
 - (d) L.M. Scofield Company: www.scofield.com/#sle.
 - (e) Prosoco, Inc: www.prosoco.com/#sle.
 - (f) Euclid Chemical Company: www.euclidchemical.com/#sle.
 - 3) Substitutions: See Section 01 6000 Product Requirements.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains as indicated on drawings.

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- F. At exterior slabs, aprons, and other horizontal locations provide a light broom finish and liquid membrane curing compound finish unless indicated otherwise.
- G. At interior slabs do not over trowel where concrete is to be left exposed to avoid slippery surfaces when wet. Review finishing with Architect's representative prior to completing the work.

3.08 CURING AND PROTECTION

- A. Comply with requirements of ACI PRC-308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
- C. Surfaces Not in Contact with Forms:
 - 1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than 14 days by saturated burlap unless noted otherwise.
 - a. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
 - 2. Final Curing: Begin after initial curing but before surface is dry.
 - 3. Where damp curing is not feasible due to location, and with written permission of SER, spray with an approved curing compound. In general, curing compound is not an acceptable substitute for damp curing.

3.09 MASS CONCRETE

- A. Unless otherwise noted, any concrete member with least dimension greater than 29 inches is defined as Mass Concrete; ACI PRC-207.1. Smaller elements utilizing high strength concrete may be identified as Mass Concrete in the drawings or specification.
- B. Mass Concrete is subject to the following temperature limitations:
 - 1. Maximum internal temperature is 150 degrees Fahrenheit.
 - 2. Maximum differential (gradient) between internal (core) and nearby surface temperatures is 35 degrees Fahrenheit. Maximum differential between core and surface temperatures more than 20 feet apart is 40 degrees Fahrenheit.
- C. Contractor shall submit a Thermal Control and Placement Plan containing:
 - 1. Calculations of maximum internal temperature and maximum gradient, based on the approved mix design or designs.
 - 2. Required concrete temperature at time of placement (Maximum Placement Temperature).
 - 3. Estimated set time and finishing plan.
 - 4. Number and approximate location of temperature sensors, and measurement interval.
 - 5. Intended blanketing, with assumed likely range of external temperatures during and after placement. Note that blankets may be required in warm weather to control temperature gradient.
 - 6. Likely length of time that blankets are required to minimize gradient.
 - 7. If necessary, Plan shall also include cooling through internal piping.
 - 8. Through-thickness construction joints.
 - 9. Placement methodology (bucketing, pumps, conveyors, etc.) and intended placement rate.
 - 10. Placement intent for slabs (full thickness, or layers).
- D. On slabs, recheck surface elevations for changes due to subsidence or sloughing after initial screeding.
- E. Typical wet curing requirements apply to Mass Concrete, but blanket requirements in other sections are superseded by requirement C.5 above. Blankets are required in warm weather to reduce thermal gradient. Maintain blankets until core and surface temperatures are and are expected to remain within 40 degrees of one another; but blankets need not be maintained for more than two weeks.
- F. Typical cold weather temperature requirements apply to Mass Concrete unless superseded by the approved Thermal Control and Placement Plan.

3.10 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to Architect for review prior to commencement of concrete operations.
- D. For testing requirements refer to structural notes on the drawings and, where applicable, as indicated below.
- E. Refer to Section 01 3510 Structural Testing and Special Inspection Requirements for testing requirements.

3.11 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
 - 1. Concrete damaged by the construction activities required to complete the Work of this section shall also be considered defective concrete.
- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.12 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 05 1200 STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural steel framing members.
- B. Structural steel support members.
- C. Grouting under base plates.

1.02 REFERENCE STANDARDS

- A. AISC (MAN) Steel Construction Manual; 2023, with Errata (2024).
- B. AISC 303 Code of Standard Practice for Steel Buildings and Bridges; 2022.
- C. ASTM A36/A36M Standard Specification for Carbon Structural Steel; 2019.
- D. ASTM A153/A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- E. ASTM A307 Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
- F. ASTM A500/A500M Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.
- G. ASTM A563/A563M Standard Specification for Carbon and Alloy Steel Nuts (Inch and Metric); 2021a.
- H. ASTM A992/A992M Standard Specification for Structural Steel Shapes; 2022.
- I. ASTM E94/E94M Standard Guide for Radiographic Examination Using Industrial Radiographic Film; 2017.
- J. ASTM E164 Standard Practice for Contact Ultrasonic Testing of Weldments; 2019.
- K. ASTM E165/E165M Standard Practice for Liquid Penetrant Testing for General Industry; 2023.
- L. ASTM E709 Standard Guide for Magnetic Particle Testing; 2021.
- M. ASTM F436/F436M Standard Specification for Hardened Steel Washers Inch and Metric Dimensions; 2019.
- N. ASTM F3125/F3125M Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength; 2023.
- O. AWS A2.4 Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.
- P. AWS D1.1/D1.1M Structural Welding Code Steel; 2020, with Errata (2023).
- Q. RCSC (HSBOLT) Specification for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections; 2020.

1.03 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
 - 2. Provide member and connection design and details not indicated within design documents. Indicate calculated and/or assumed design loads for member and connection design and details
 - 3. Indicate cambers and loads.
 - 4. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.
 - 5. Indicate unit identification mark for each unique item.

1.04 QUALITY ASSURANCE

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- A. Fabricate structural steel members in accordance with AISC (MAN) "Steel Construction Manual."
- B. Erector: Company specializing in performing the work of this section with minimum 5 years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Steel Angles and Plates: ASTM A36/A36M.
- B. Steel W Shapes and Tees: ASTM A992/A992M.
- C. Cold-Formed Structural Tubing: ASTM A500/A500M, Grade B.
- D. Structural Bolts and Nuts: Carbon steel, ASTM A307, Grade A and galvanized in compliance with ASTM A153/A153M Class C.
- E. High-Strength Structural Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, with matching compatible ASTM A563/A563M nuts and ASTM F436/F436M washers.
 1. Provide these bolts only at locations if and where indicated on the drawings.
- F. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- G. Grout: ASTM C1107/C1107M; Non-shrink; premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
 - 1. Minimum Compressive Strength at 48 Hours: 2,000 pounds per square inch.
 - 2. Minimum Compressive Strength at 28 Days: 7,000 pounds per square inch.
- H. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.
 - 1. Color: Manufacturer's Standard.

2.02 FABRICATION

- A. Shop fabricate to greatest extent possible.
- B. Mark each item with its identification mark. Use a non-permanent method at units that will remain exposed; welding is not acceptable, it shall be ground smooth, filled, and primed by the supplier at no additional cost to the Owner.
- C. Continuously seal joined members by continuous welds. Grind exposed welds smooth.
- D. Fabricate connections for bolt, nut, and washer connectors.

2.03 FINISH

A. Shop prime structural steel members. Do not prime surfaces that will be fireproofed, field welded, in contact with concrete, or high strength bolted.

2.04 CONCRETE ANCHORING SYSTEMS

- A. Approved Manufacturers/Products:
 - 1. HILTI: www.us.hilti.com.
 - 2. MiTek: www.mitek-us.com.
 - 3. DeWALT: www.anchors.dewalt.com.
 - 4. Red Head: www.itwredhead.com.
 - 5. Simpson Strong-Tie: www.strongtie.com.
 - 6. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

3.02 ERECTION

A. Erect structural steel in compliance with AISC 303.

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- B. Allow for erection loads and provide sufficient temporary bracing to maintain structure in safe condition, plumb, and in true alignment until completion of erection and installation of permanent bracing.
- C. Field weld components indicated on shop drawings.
- D. Use carbon steel bolts only for temporary bracing during construction, unless otherwise specifically permitted on drawings. Install high-strength bolts in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts".
- E. Do not field cut or alter structural members without approval of Architect.
- F. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.
- G. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for nonshrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.

3.03 TOLERANCES

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

3.04 FIELD QUALITY CONTROL

- An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. High-Strength Bolts: Provide testing and verification of field-bolted connections in accordance with RCSC (HSBOLT) "Specification for Structural Joints Using High-Strength Bolts," testing at least 50 percent of bolts at each connection.
- C. Welded Connections: Visually inspect all field-welded connections and test at least 100 percent of welds using one of the following:
 - 1. The following only apply to welds exceeding 5/16 inches.
 - 2. Radiographic testing performed in accordance with ASTM E94/E94M.
 - 3. Ultrasonic testing performed in accordance with ASTM E164.
 - 4. Liquid penetrant inspection performed in accordance with ASTM E165/E165M.
 - 5. Magnetic particle inspection performed in accordance with ASTM E709.

END OF SECTION

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SECTION 05 5000 METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel items.

1.02 RELATED REQUIREMENTS

A. Section 09 9123 - Interior Painting: Paint finish.

1.03 REFERENCE STANDARDS

- A. ASTM A53/A53M Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2022.
- B. ASTM A153/A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- C. ASTM A307 Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength; 2021.
- D. ASTM A500/A500M Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2023.
- E. ASTM A992/A992M Standard Specification for Structural Steel Shapes; 2022.
- F. AWS A2.4 Standard Symbols for Welding, Brazing, and Nondestructive Examination; 2020.
- G. AWS D1.1/D1.1M Structural Welding Code Steel; 2020, with Errata (2023).
- H. SSPC-SP 2 Hand Tool Cleaning; 2018.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on all finishing products, including VOC content.
- C. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
 - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
 - 2. Indicate unit identification mark and location for each unique item.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

- A. Steel W Shapes and Tees: ASTM A992/A992M.
- B. Steel Tubing: ASTM A500/A500M Grade B cold-formed structural tubing.
- C. Pipe: ASTM A 53/A 53M Grade B Schedule 40, black finish.
- D. Bolts, Nuts, and Washers: ASTM A307, Grade A, galvanized to ASTM A153/A153M where connecting galvanized components.
- E. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- F. Shop and Touch-Up Primer: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.
 - 1. Color: Manufacturer's Standard.
- G. Touch-Up Primer for Galvanized Surfaces: Fabricator's standard, complying with VOC limitations of authorities having jurisdiction.

2.02 FABRICATION

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Mark each item with its identification mark. Use a non-permanent method at units that will remain exposed; welding is not acceptable, it shall be ground smooth, filled, and primed by the supplier at no additional cost to the Owner.

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- C. Fabricate items with joints tightly fitted and secured.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FINISHES - STEEL

- A. Prime paint steel items.
 - 1. Exceptions: Galvanize items to be embedded in concrete and items to be embedded in masonry.
- B. Prepare surfaces to be primed in accordance with SSPC-SP2 minimum.
 - 1. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
 - 2. Prime Painting: One coat.
 - a. Provide primer products indicated for surfaces to be primed and painted, Refer to Section 09 9113 Exterior Painting and Section 09 9123 Interior Painting.

2.04 FABRICATION TOLERANCES

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

2.05 CONCRETE ANCHORING SYSTEMS

- A. Approved Manufacturers/Products:
 - 1. HILTI: www.us.hilti.com.
 - 2. MiTek: www.mitek-us.com.
 - 3. DeWALT: www.anchors.dewalt.com.
 - 4. Red Head: www.itwredhead.com.
 - 5. Simpson Strong-Tie: www.strongtie.com.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 PREPARATION

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Perform field welding in accordance with AWS D1.1/D1.1M.
- D. Obtain approval prior to site cutting or making adjustments not scheduled.
- E. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

3.04 TOLERANCES

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

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END OF SECTION

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SECTION 06 4100 ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated cabinet units.
- B. Hardware.
- C. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 Rough Carpentry: Support framing, grounds, and concealed blocking.
- B. Section 09 2116 Gypsum Board Assemblies: Prefabricated Wood Blocking System.
- C. Section 12 3600 Countertops.

1.03 REFERENCE STANDARDS

- A. ANSI A208.1 American National Standard for Particleboard; 2022.
- B. ANSI A208.2 Medium Density Fiberboard (MDF) for Interior Applications; 2022.
- C. AWI/AWMAC/WI (AWS) Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- D. AWMAC/WI (NAAWS) North American Architectural Woodwork Standards; 2021, with Errata.
- E. BHMA A156.9 Cabinet Hardware; 2020.
- F. NEMA LD 3 High-Pressure Decorative Laminates; 2005.
- G. PS 1 Structural Plywood; 2023.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
 - 1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
 - 2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- B. Product Data: Provide data for hardware accessories.
- C. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, texture, and patterns.

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.07 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

2.02 WOOD-BASED COMPONENTS

A. Hardwood Lumber: NHLA; Graded in accordance with, Grade II/Custom; average moisture content of 5-10 percent; species as recommended by manufacturer.

2.03 PANEL MATERIALS

A. Particleboard: ANSI A208.1; medium density industrial type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, composed of wood chips bonded with

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interior grade adhesive under heat and pressure; sanded faces; thickness as required; use for concealed components.

- B. Medium Density Fiberboard (MDF): ANSI A208.2; type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated; composed of wood fibers pressure bonded with interior grade adhesive to suit application; sanded faces; thickness as required.
 1. Use as backing for plastic laminate unless otherwise indicated.
- C. Plywood for Non-Decorative Purposes: NIST PS 1, Interior rated adhesives, core of wood plies from listed species unless otherwise indicated, thickness as indicated or as required by application.
- D. Hardboard: AHA A135.4; Pressed wood fiber with resin binder, Class 1 Tempered, 1/4 inch thick, smooth two sides (S2S); use for drawer bottoms, dust panels, and other components indicated on drawings.

2.04 LAMINATE MATERIALS

- A. Manufacturers:
 - 1. Arborite: www.arborite.com/#sle.
 - 2. Formica Corporation: www.formica.com/#sle.
 - 3. Lamin-Art, Inc: www.laminart.com.
 - 4. Panolam Industries International, Inc: www.panolam.com/#sle.
 - 5. Wilsonart LLC: www.wilsonart.com/#sle.
 - 6. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.
- B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.
- C. Provide specific types as indicated.
 - 1. Horizontal Surfaces: HGS, 0.048 inch nominal thickness, color and finish as selected by Architect from manufacturers full range of colors.
 - 2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, color and finish as selected by Architect from manufacturers full range of colors.
 - 3. Cabinet Liner: CLS, 0.020 inch nominal thickness, color and finish as selected by Architect from manufacturers full range of colors.

2.05 COUNTERTOPS

A. Countertops: See Section 12 3600.

2.06 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application.
- B. Plastic Edge Banding: Extruded PVC, flat shaped; smooth finish; with or without self-locking serrated tongue; of width to match component thickness.
 - 1. Color: Match adjacent plastic laminate.
 - 2. Materials Thickness:
 - a. Door and Drawer Edges: 0.118 inches.
 - b. Other Edges: 0.018 inches.
 - 3. Use at exposed sheet material edges and perimeter of all doors and drawers.
 - 4. Products:
 - a. WoodTape by Doellken-Woodtape: www.na.doellken.com.
 - b. Canplast: www.canplast.com.
 - c. Rehau: www.rehau.com.
 - d. PVC Bumper Molding by Patwin Plastics: www.patwin.com.
 - e. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.
- C. Fasteners: Size and type to suit application.
- D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

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- E. Concealed Joint Fasteners: Threaded steel.
- F. Grommets: Standard plastic grommets for cut-outs, in color as selected by Architect.

2.07 HARDWARE

- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Additional Hardware Items: As detailed and noted on the casework sections and elevations.
- C. Locking Shelf Supports: Standard side-mounted system using multiple holes for pin supports with locking clips, clear finish, for nominal 1 inch spacing adjustments.
 - 1. Product: 8705CL 1/4" Pin Shelf Lock for 3/4" Shelf, Finish Clear manufactured by www.hardwareresources.com or designer pre-approved equivalent.
- D. Drawer and Door Pulls: "U" shaped wire pull, steel with satin finish, 4 inch centers.
- E. Keyed Cabinet Locks: Keyed cylinder, two keys per lock, master keyed, steel with chrome finish.
- F. Drawer Slides:
 - 1. Type: Full extension.
 - 2. Static Load Capacity: 100 lbs minimum.
 - 3. Mounting: Side mounted.
 - 4. Stops: Integral type.
 - 5. Features: Provide soft-close/stay closed type.
 - 6. Manufacturers:
 - a. Accuride International, Inc; Light-Duty Drawer Slides: www.accuride.com/#sle.
 - b. Blum, Inc: www.blum.com/#sle.
 - c. Grass America Inc: www.grassusa.com/#sle.
 - d. Hettich America, LP: www.hettich.com/sle.
 - e. Knape & Vogt Manufacturing Company: www.knapeandvogt.com/#sle.
 - f. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.
- G. Hinges: European style concealed self-closing type, steel with nickel-plated finish.
 - 1. Function: Standard grade, 110 degrees swing minimum, side and depth cam adjustable, screw or cam height adjustment.
 - 2. Basis of design: 500 Series Standard Duty by Hardware Resources, arm style and mounting plates to suite cabinet construction and door style.
 - 3. Manufacturers:
 - a. Blum, Inc: www.blum.com/#sle.
 - b. Grass America Inc: www.grassusa.com/#sle.
 - c. Hardware Resources: www.hardwareresources.com/#sle.
 - d. Hettich America, LP: www.hettich.com/sle.
 - e. Titus Cabinet Hardware: www.titusplus.com/us/en/#sle.
 - f. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.

2.08 FABRICATION

- A. Cabinet Style: Flush overlay.
- B. Cabinet Doors and Drawer Fronts: Flush style.
- C. Drawer Fronts and Boxes Construction Technique: Wood, laminate, and hardboard, unless indicated otherwise, in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated.
- D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
 - 1. Provide separate base to be installed and leveled prior to cabinet installation.
- E. Finished Ends: Finish ends of all casework not hidden by permanent construction; including locations adjacent to appliances and removable lowers cabinets.

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- F. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- G. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- H. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- I. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Seal cut edges.

2.09 SHOP FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. For opaque finishes, apply wood filler in exposed nail and screw indentations and sand smooth.
- C. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.
- D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 Finishing for grade specified and as follows:
- E. Finish work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1500, use systems preferred by manufacturers based usage type, or equivalent.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
 1. Set separate base, plumb, level, and secure rigidly in-place prior to setting cabinets.
- C. Use fixture attachments in concealed locations for wall mounted components.
- D. Use concealed joint fasteners to align and secure adjoining cabinet units.
- E. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim for this purpose.
- F. Secure cabinets to floor using appropriate angles and anchorages.
- G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 07 2100 THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation at perimeter foundation wall.
- B. Batt insulation in exterior wall construction.

1.02 REFERENCE STANDARDS

- A. ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2023.
- B. ASTM C665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- C. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- D. ASTM E136 Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2024.

1.03 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

1.04 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene (XPS) Board Insulation: Comply with ASTM C578 with either natural skin or cut cell surfaces.
 - 1. Type and Compressive Resistance: Type IV, 25 psi (173 kPa), minimum.
 - 2. Flame Spread Index (FSI): Class A 0 to 25, when tested in accordance with ASTM E84.
 - 3. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
 - 4. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.
 - 5. Board Size: 48 x 96 inch.
 - 6. Board Thickness: As indicated on the drawings.
 - 7. Board Edges: Square.
 - 8. Installation Locations:
 - a. Natural Skin Surfaces: All locations unless indicated otherwise.
 - b. Cut Cell Surfaces: Locations at grade where parging is indicated.
 - 9. Manufacturers:
 - a. DuPont de Nemours, Inc: building.dupont.com/#sle.
 - b. Kingspan Insulation LLC: www.kingspan.com/#sle.
 - c. Owens Corning Corporation: www.ocbuildingspec.com/#sle.
 - d. Diversifoam Products: www.diversifoam.com.
 - e. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.

2.02 MINERAL FIBER BLANKET INSULATION MATERIALS

- A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 - 4. Formaldehyde Content: Zero.
 - 5. Facing: Unfaced.

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- 6. Products:
 - a. CertainTeed Corporation: www.certainteed.com/#sle.
 - b. Johns Manville: www.jm.com/#sle.
 - c. Owens Corning Corporation: www.ocbuildingspec.com/#sle.
- 7. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.
- B. Mineral Wool Blanket Thermal Insulation: Flexible or semi-rigid preformed insulation, complying with ASTM C665.
 - 1. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 2. Products:
 - a. Johns Manville: www.jm.com/#sle.
 - b. ROCKWOOL: www.rockwool.com/#sle.
 - c. Thermafiber, Inc: www.thermafiber.com/#sle.
 - d. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.

2.03 ACCESSORIES

- A. Sheet Vapor Retarder: Clear polyethylene film for above grade application, 6 mil thick.
- B. Tape: Polyethylene self-adhering type, 2 inch wide.
- C. Insulation Fasteners: Appropriate for purpose intended.
- D. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Apply adhesive to back of boards:
 - 1. By methods approved by board and adhesive manufacturers.
- B. Install boards horizontally on foundation perimeter.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BATT INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At wood framing, place vapor retarder on warm side of insulation by stapling at 6 inches on center. Lap and seal sheet retarder joints over face of member.
- F. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over face of member
- G. Tape seal tears or cuts in vapor retarder.
- H. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane; tape seal in place.

3.04 PROTECTION

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

END OF SECTION

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SECTION 07 9200 JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C920 Standard Specification for Elastomeric Joint Sealants; 2018.
- B. ASTM C1193 Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- C. ASTM C1330 Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2023.

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
- B. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- D. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.

1.04 WARRANTY

A. Extended Correction Period: Correct defective work within five year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Base Manufacturer: Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com.
- B. Other Acceptable Manufacturers:
 - 1. Master Builders Solutions: www.master-builders-solutions.com/en-us.
 - 2. Bostik Inc: www.bostik-us.com.
 - 3. Dow Chemical Company: www.dow.com.
 - 4. Manus Products, Inc.: www.manus.net.
 - 5. Pecora Corporation: www.pecora.com.
 - 6. Red Devil: www.reddevil.com.
 - 7. Sherwin-Williams Company: www.sherwin-williams.com.
 - 8. Sika Corporation: www.usa.sika.com.
 - 9. W.R.Meadows, Inc: www.wrmeadows.com.
 - 10. Hilti: www.hilti.com.
 - 11. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:

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- 1. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints and penetrations of pipes, tubes, conduit, ductwork, and structural framing through walls, ceilings, and floors in finished and unfinished spaces.
 - c. Joints indicated on the drawings.
 - d. Interior joints to be sealed shall include those between non-conditioned spaces and conditioned spaces.
 - e. Other joints indicated below.
- 2. Do not seal the following types of joints:
 - a. Joints indicated to be treated with manufactured expansion joint cover, or some other type of sealing device.
 - b. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - c. Joints where installation of sealant is specified in another section.
 - d. Joints between suspended panel ceilings/grid and walls.
- B. Interior Joints: Use nonsag polyurethane sealant, unless otherwise indicated.
 - 1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.
 - 2. Wall and Ceiling Joints in Wet Areas: Nonsag polyurethane sealant for continuous liquid immersion.
 - 3. Floor Joints in Wet Areas: Nonsag polyurethane non-traffic-grade sealant suitable for continuous liquid immersion.
 - 4. Joints between Fixtures in Wet Areas and Floors, Walls, and Ceilings: Mildew-resistant silicone sealant; Refer to colors below.
 - 5. In Sound-Rated Assemblies: Acrylic emulsion latex sealant.
 - 6. Other Floor Joints: Self-leveling polyurethane traffic-grade sealant.
- C. Interior Wet Areas: Bathrooms, restrooms, kitchens, food service areas, and food processing areas; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, and other similar items.
- D. Sound-Rated Assemblies: Walls and ceilings identified as STC-rated, sound-rated, or acoustical.

2.03 JOINT SEALANTS - GENERAL

A. Colors: Color shall be selected by the Architect from manufacturer's full range unless specifically indicated to be a specific color.

2.04 NONSAG JOINT SEALANTS

- A. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 - 1. Products:
 - a. Tremsil 200 manufactured by Tremco Commercial Sealants.
 - b. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.
- B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Color: To be selected by Architect from manufacturer's standard range.
 - 3. Products:
 - a. Master Builders Solutions; MasterSeal NP1 or NP2: www.master-builderssolutions.com/en-us/#sle.
 - b. Tremco Commercial Sealants & Waterproofing; Dymeric 240 FC or Dymonic FC: www.tremcosealants.com/#sle.
 - c. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.
- C. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, nonbleeding, non-sagging; not intended for exterior use.

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- 1. Color: To be selected by Architect from manufacturer's full range.
- 2. Products:
 - a. Tremco Commercial Sealants & Waterproofing; Tremflex 834: www.tremcosealants.com/#sle.
 - b. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.

2.05 SELF-LEVELING JOINT SEALANTS

- A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion.
 - 1. Color: To be selected by Architect from manufacturer's full range.
 - 2. Products:
 - a. THC-901, Vulkem 445SSL (also Dymonic FC, or Dymeric 240 FC) manufactured by Tremco Commercial Sealants & Waterproofing.
 - b. MasterSeal SL 1, SL 2 (also NP 1, or NP 2 manufactured by Master Builders Solutions.
 - c. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.

2.06 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 - 1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B Bi-Cellular Polyethylene.
 - 2. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type C Closed Cell Polyethylene.
 - 3. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.

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- C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.
- H. Concrete Floor Joint Filler: After full cure, shave joint filler flush with top of concrete slab.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION

A. Protect sealants until cured.

END OF SECTION

SECTION 08 1213 HOLLOW METAL FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal frames for non-hollow metal doors.

1.02 RELATED REQUIREMENTS

- A. Section 08 1416 Flush Wood Doors: Non-hollow metal door for hollow metal frames.
- B. Section 08 7100 Door Hardware: Hardware and weatherstripping.
- C. Section 08 8000 Glazing: Glazed borrowed lites.
- D. Section 09 9123 Interior Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. ADA Standards 2010 ADA Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.4 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors; 2024.
- C. ANSI/SDI A250.8 Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
- D. ANSI/SDI A250.10 Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2020.
- E. ASTM A653/A653M Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- F. ASTM A1008/A1008M Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.
- G. ASTM A1011/A1011M Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.
- H. ASTM C143/C143M Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
- I. ASTM C476 Standard Specification for Grout for Masonry; 2023.
- J. BHMA A156.115 Hardware Preparation in Steel Doors and Frames; 2016.
- K. ICC A117.1 Accessible and Usable Buildings and Facilities; 2017.
- L. NAAMM HMMA 830 Hardware Selection for Hollow Metal Doors and Frames; 2002.
- M. NAAMM HMMA 831 Hardware Locations for Hollow Metal Doors and Frames; 2011.
- N. NAAMM HMMA 861 Guide Specifications for Commercial Hollow Metal Doors and Frames; 2014.
- O. SDI 117 Manufacturing Tolerances for Standard Steel Doors and Frames; 2023.

1.04 SUBMITTALS

- A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.
- B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

1.05 QUALITY ASSURANCE

A. Maintain at project site copies of reference standards relating to installation of products specified.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Frames with Integral Casings:
 - 1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.

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- 2. Fleming Door Products, an Assa Abloy Group company: www.assaabloydss.com/#sle.
- 3. Republic Doors, an Allegion brand: www.republicdoor.com/#sle.
- 4. Steelcraft, an Allegion brand: www.allegion.com/sle.
- 5. Mesker: www.meskerdoor.com.
- 6. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.

2.02 PERFORMANCE REQUIREMENTS

- A. Door Frame Type: Provide hollow metal door frames with integral casings.
- B. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
- C. Accessibility: Comply with ICC A117.1 and ADA Standards.
- D. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior frame that is also indicated as being sound-rated must comply with the requirements specified for exterior frames and for sound-rated frames; where two requirements conflict, comply with the most stringent.
- E. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115, NAAMM HMMA 830, NAAMM HMMA 831 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- F. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- G. Frames Depth: Size frame depth to accommodate wall assembly thickness and to allow proper attachment to assembly components.

2.03 HOLLOW METAL DOOR FRAMES WITH INTEGRAL CASINGS

- A. Frame Finish: Factory primed and field finished.
- B. Interior Door Frames, Non-Fire Rated: Face welded type.
 - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
 - a. Level 2 Heavy-duty.
 - b. Physical Performance Level B 500 000 cycles; in accordance with ANSI/SDI A250.4.
 - c. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.

2.04 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Finish: Paint in field. Color as selected by the Architect.

2.05 ACCESSORIES

- A. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- B. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

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B. Fill exterior doors and doors between heated and unconditioned space with foam-in-place insulation. Product: Great Stuff Pro window and door by Dow or approved equivalent.

3.03 INSTALLATION

- A. Install frames in accordance with manufacturer's instructions and related requirements of specified frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- D. Comply with glazing installation requirements of Section 08 8000.
- E. Install door hardware as specified in Section 08 7100.
- F. Coordinate installation of electrical connections to electrical hardware items.
- G. Touch up damaged factory finishes.

3.04 TOLERANCES

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

END OF SECTION

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SECTION 08 1416 FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush and flush glazed configuration; non-rated.

1.02 RELATED REQUIREMENTS

- A. Section 08 1213 Hollow Metal Frames.
- B. Section 08 7100 Door Hardware.
- C. Section 08 8000 Glazing.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) North American Architectural Woodwork Standards; 2021, with Errata.
- C. NFPA 80 Standard for Fire Doors and Other Opening Protectives; 2025.
- D. WDMA I.S. 1A Interior Architectural Wood Flush Doors; 2021, with Errata (2022).

1.04 SUBMITTALS

- A. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- B. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
 1. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- C. Samples: Submit two samples of door veneer, 4 by 4 inch in size illustrating wood grain, stain color, and sheen.
- D. Specimen warranty.
- E. Warranty, executed in Owner's name.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.06 WARRANTY

- A. Manufacturer Warranty: Provide manufacturer's warranty on interior doors for the life of the installation. Complete forms in Owner's name and register with manufacturer.
 - 1. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. Masonite Architectural: www.architectural.masonite.com/#sle.
 - 2. VT Industries, Inc: www.vtindustries.com/#sle.
 - 3. Oshkosh Door Company: www.oshkoshdoor.com.
 - 4. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.

2.02 DOORS

A. Doors: See drawings for locations and additional requirements.

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- 1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS), AWMAC/WI (NAAWS) or WDMA I.S. 1A.
- 2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 - 1. Provide solid core doors at each location.
 - 2. Wood veneer facing with factory transparent finish at all wood door locations.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type structural composite lumber core (SCLC), plies and faces as indicated.

2.04 DOOR FACINGS

- A. Veneer Facing for Transparent Finish: Wood species as scheduled on the drawings, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face; unless otherwise indicated.
 - 1. Vertical Edges: Same species as face veneer.
 - 2. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.
 - 3. Wood Veneer: Select grade; sapwood.
- B. Facing Adhesive: Type I waterproof.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
 - 1. Provide solid blocks at lock edge for hardware reinforcement.
- C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
- D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- F. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 -Finishing for grade specified and as follows:
 - 1. Transparent:
 - a. System 5, Varnish, Conversion.
 - b. Stain: As selected by Architect.
 - c. Sheen: Semigloss.
- B. Factory finish doors in accordance with approved sample.
- C. Seal door top edge with color sealer to match door facing.
 - 1. This requirement only applies when top edge is visible from elevated areas.

2.07 ACCESSORIES

- A. Hollow Metal Door Frames: See Section 08 1213.
- B. Glazing: See Section 08 8000.
- C. Glazing Stops: Wood, of same species as door facing, mitered corners; prepared for countersink style tamper proof screws.
- D. Door Hardware: See Section 08 7100.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

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- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
 1. Install fire-rated doors in accordance with NFPA 80 requirements.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.

3.03 TOLERANCES

- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

3.05 SCHEDULE - SEE DRAWINGS

END OF SECTION

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SECTION 08 3100 ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Ceiling-mounted access units.

1.02 SUBMITTALS

- A. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.
- B. Manufacturer's Installation Instructions: Indicate installation requirements and rough-in dimensions.

PART 2 PRODUCTS

2.01 CEILING MOUNTED ACCESS UNITS

- A. Basis of Design:
 - 1. Type AP-1: UF-5000 by ACUDOR; Steel Trim, Steel Flush Face.
 - 2. Type AP-2: DW-5040 by ACUDOR; Drywall Flange, Steel Flush Face.
- B. Manufacturers:
 - 1. Activar Construction Products Group, Inc. JL Industries: www.activarcpg.com/#sle.
 - 2. ACUDOR Products Inc: www.acudor.com/#sle.
 - 3. Babcock-Davis: www.babcockdavis.com/#sle.
 - 4. Bilco Co: www.bilco.com.
 - 5. Cendrex, Inc: www.cendrex.com/#sle.
 - 6. Elmdor: www.elmdor.com/#sle.
 - 7. Dur-Red Products: www.dur-red.com.
 - 8. Karp Associates, Inc: www.karpinc.com.
 - 9. Nystrom, Inc: www.nystrom.com/#sle.
 - 10. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.
- C. Ceiling-Mounted Units: Factory-fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.
 - 1. Material: Steel.
 - 2. Style: As indicated by Basis of Design.
 - 3. Door Style: Single thickness with rolled or turned in edges.
 - 4. Steel Finish: Primed.
 - 5. Primed and Factory Finish: Polyester powder coat; color as selected by Architect from manufacturer's standard colors.
 - 6. Door/Panel Size: As indicated on the drawings.
 - 7. Hardware:
 - a. Hinges for Non-Fire-Rated Units: Concealed, constant force closure spring type.
 - b. Latch/Lock: Tamperproof tool-operated cam latch.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 INSTALLATION

- A. Install units in accordance with manufacturer's instructions.
- B. Install frames plumb and level in openings, and secure units rigidly in place.
- C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION

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SECTION 08 4313 ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum-framed storefront, with vision glass.

1.02 RELATED REQUIREMENTS

- A. Section 08 7100 Door Hardware: Hardware items other than specified in this section.
- B. Section 08 8000 Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

- A. AAMA CW-10 Care and Handling of Architectural Aluminum from Shop to Site; 2015.
- B. AAMA 611 Specification for Anodized Architectural Aluminum; 2024.
- C. ASTM B221 Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2021.
- D. ASTM B221M Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2021.
- E. ASTM E283/E283M Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2019.
- F. ASTM E330/E330M Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference; 2014 (Reapproved 2021).

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

- A. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, and internal drainage details.
- B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.08 WARRANTY

- A. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.
- B. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

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2.01 MANUFACTURERS

- A. Basis of Design:
 - 1. Kawneer; Product 451T Series: www.kawneer.com; and
 - 2. Tubelite; Product T14000 Series: www.tubeliteinc.com.
- B. Other Acceptable Aluminum-Framed Storefronts Manufacturers:
 - 1. Arcadia, Inc: www.arcadiainc.com/#sle.
 - 2. Boyd Aluminum: www.boydaluminum.com/#sle.
 - 3. CMI Architectural Products, Inc: www.cmiarch.com.
 - 4. FreMarg Innovations: www.fremarginnovations.com.
 - 5. Kawneer North America: www.kawneer.com/#sle.
 - 6. Manko Window Systems, Inc: www.mankowindows.com/#sle.
 - 7. Oldcastle BuildingEnvelope: www.oldcastlebe.com/#sle.
 - 8. Pittco Architectural Metals Inc: www.pittcometals.com/#sle.
 - 9. Tubelite, Inc: www.tubeliteinc.com/#sle.
 - 10. Wausau Window and Wall Systems: www.wausauwindow.com.
 - 11. YKK AP America, Inc: www.ykkap.com/commercial/#sle.
 - 12. EFCO, LLC: www.efcocorp.com.
 - 13. Vitro Architectural Products: www.vitroamerica.com.
 - 14. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.

2.02 ALUMINUM-FRAMED STOREFRONT

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
 - 1. Glazing Position: Centered (front to back).
 - 2. Finish: Class I color anodized.
 - a. Factory finish all surfaces that will be exposed in completed assemblies.
 - b. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
 - 3. Finish Color: Black.
 - 4. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
 - 5. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
 - 6. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
 - 7. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
 - 8. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
 - 9. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
- B. Performance Requirements
 - 1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
 - a. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
 - 2. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.

2.03 COMPONENTS

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- A. Aluminum Framing Members: Tubular aluminum sections, drainage holes and internal weep drainage system.
 - 1. Framing members for interior applications need not be thermally broken.
 - 2. Framing members around exterior door perimeters need not be thermally broken.
 - 3. Glazing Stops: Flush.

2.04 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Fasteners: Manufacturer's standard corrosion-resistant nonstaining nonbleeding fasteners and accessories compatible with adjacent materials. Where exposes shall be stainless steel.
- C. Concealed Flashings: Stainless steel, 26 gauge, 0.0187 inch minimum thickness.
- D. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- E. Glazing Accessories: See Section 08 8000.

2.05 FINISHES

A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils thick.

2.06 ACCESSORIES

A. Shims: Plastic shims.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Install glass in accordance with Section 08 8000, using glazing method required to achieve performance criteria.
- J. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.04 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.

3.05 PROTECTION

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A. Protect installed products from damage until Date of Substantial Completion. **END OF SECTION**

SECTION 08 7100 DOOR HARDWARE

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes commercial door hardware for the following:
 - 1. Swinging doors.
 - 2. Sliding doors.
 - 3. Other doors to the extent indicated.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Mechanical door hardware.
 - 2. Electromechanical door hardware.
 - 3. Cylinders specified for doors in other sections.
- C. Related Sections:
 - 1. Division 08 Section "Hollow Metal Doors and Frames".
 - 2. Division 08 Section "Flush Wood Doors".
 - 3. Division 08 Section "Aluminum-Framed Entrances and Storefronts".
- D. Codes and References: Comply with the version year adopted by the Authority Having Jurisdiction.
 - 1. ANSI A117.1 Accessible and Usable Buildings and Facilities.
 - 2. ICC/IBC International Building Code.
 - 3. NFPA 70 National Electrical Code.
 - 4. NFPA 80 Fire Doors and Windows.
 - 5. NFPA 101 Life Safety Code.
 - 6. NFPA 105 Installation of Smoke Door Assemblies.
 - 7. State Building Codes, Local Amendments.
- E. Standards: All hardware specified herein shall comply with the following industry standards as applicable. Any undated reference to a standard shall be interpreted as referring to the latest edition of that standard:
 - 1. ANSI/BHMA Certified Product Standards A156 Series.
 - 2. UL10C Positive Pressure Fire Tests of Door Assemblies.
 - 3. ANSI/UL 294 Access Control System Units.
 - a. UL 305 Panic Hardware.
 - b. ANSI/UL 437- Key Locks.

1.03 SUBMITTALS

- A. Product Data: Manufacturer's product data sheets including installation details, material descriptions, dimensions of individual components and profiles, operational descriptions and finishes.
- B. Door Hardware Schedule: Prepared by or under the supervision of supplier, detailing, fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Comply with scheduling sequence and vertical format in DHI's "Sequence and Format for the Hardware Schedule."
 - 2. Organization: Organize the Door Hardware Schedule into door hardware sets indicating complete designations of every item required for each door or opening. Organize door

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hardware sets in same order as in the Door Hardware Sets at the end of Part 3. Submittals that do not follow the same format and order as the Door Hardware Sets will be rejected and subject to resubmission.

- 3. Content: Include the following information:
 - a. Type, style, function, size, label, hand, and finish of each door hardware item.
 - b. Manufacturer of each item.
 - c. Fastenings and other pertinent information.
 - d. Location of door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - e. Explanation of abbreviations, symbols, and codes contained in schedule.
 - f. Mounting locations for door hardware.
 - g. Door and frame sizes and materials.
 - h. Warranty information for each product.
- 4. Submittal Sequence: Submit the final Door Hardware Schedule at earliest possible date, particularly where approval of the Door Hardware Schedule must precede fabrication of other work that is critical in the Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the Door Hardware Schedule.
- C. Shop Drawings: Details of electrified access control hardware indicating the following:
 - 1. Wiring Diagrams: Upon receipt of approved schedules, submit detailed system wiring diagrams for power, signaling, monitoring, communication, and control of the access control system electrified hardware. Differentiate between manufacturer-installed and field-installed wiring. Include the following:
 - a. Elevation diagram of each unique access controlled opening showing location and interconnection of major system components with respect to their placement in the respective door openings.
 - b. Complete (risers, point-to-point) access control system block wiring diagrams.
 - c. Wiring instructions for each electronic component scheduled herein.
 - 2. Electrical Coordination: Coordinate with related sections the voltages and wiring details required at electrically controlled and operated hardware openings.
- D. Keying Schedule: After a keying meeting with the owner has taken place prepare a separate keying schedule detailing final instructions. Submit the keying schedule in electronic format. Include keying system explanation, door numbers, key set symbols, hardware set numbers and special instructions. Owner must approve submitted keying schedule prior to the ordering of permanent cylinders/cores.
- E. Informational Submittals:
 - 1. Product Test Reports: Indicating compliance with cycle testing requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified independent testing agency.

1.04 CLOSEOUT SUBMITTALS

- A. Operating and Maintenance Manuals: Provide manufacturers operating and maintenance manuals for each item comprising the complete door hardware installation in quantity as required in Division 01, Closeout Procedures.
- B. Project Record Documents: Provide record documentation of as-built door hardware sets in digital format (.pdf, .docx, .xlsx, .csv) and as required in Division 01, Project Record Documents.

1.05 QUALITY ASSURANCE

A. Manufacturers Qualifications: Engage qualified manufacturers with a minimum 5 years of documented experience in producing hardware and equipment similar to that indicated for this Project and that have a proven record of successful in-service performance.

- B. Certified Products: Where specified, products must maintain a current listing in the Builders Hardware Manufacturers Association (BHMA) Certified Products Directory (CPD).
- C. Installer Qualifications: A minimum 3 years documented experience installing both standard and electrified door hardware similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- D. Door Hardware Supplier Qualifications: Experienced commercial door hardware distributors with a minimum 5 years documented experience supplying both mechanical and electromechanical hardware installations comparable in material, design, and extent to that indicated for this Project. Supplier recognized as a factory direct distributor by the manufacturers of the primary materials with a warehousing facility in Project's vicinity. Supplier to have on staff a certified Architectural Hardware Consultant (AHC) available during the course of the Work to consult with Contractor, Architect, and Owner concerning both standard and electromechanical door hardware and keying.
- E. Source Limitations: Obtain each type and variety of door hardware specified in this section from a single source unless otherwise indicated.
 - 1. Electrified modifications or enhancements made to a source manufacturer's product line by a secondary or third party source will not be accepted.
 - 2. Provide electromechanical door hardware from the same manufacturer as mechanical door hardware, unless otherwise indicated.
- F. Each unit to bear third party permanent label indicating compliance with the referenced testing standards.
- G. Keying Conference: Conduct conference to comply with requirements in Division 01 Section "Project Meetings." Keying conference to incorporate the following criteria into the final keying schedule document:
 - 1. Function of building, purpose of each area and degree of security required.
 - 2. Plans for existing and future key system expansion.
 - 3. Requirements for key control storage and software.
 - 4. Installation of permanent keys, cylinder cores and software.
 - 5. Address and requirements for delivery of keys.
- H. Pre-Submittal Conference: Conduct coordination conference in compliance with requirements in Division 01 Section "Project Meetings" with attendance by representatives of Supplier(s), Installer(s), and Contractor(s) to review proper methods and the procedures for receiving, handling, and installing door hardware.
 - Prior to installation of door hardware, conduct a project specific training meeting to instruct the installing contractors' personnel on the proper installation and adjustment of their respective products. Product training to be attended by installers of door hardware (including electromechanical hardware) for aluminum, hollow metal and wood doors. Training will include the use of installation manuals, hardware schedules, templates and physical product samples as required.
 - 2. Inspect and discuss electrical roughing-in, power supply connections, and other preparatory work performed by other trades.
 - 3. Review sequence of operation narratives for each unique access controlled opening.
 - 4. Review and finalize construction schedule and verify availability of materials.
 - 5. Review the required inspecting, testing, commissioning, and demonstration procedures
- I. At completion of installation, provide written documentation that components were applied according to manufacturer's instructions and recommendations and according to approved schedule.

1.06 DELIVERY, STORAGE AND HANDLING

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- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Tag each item or package separately with identification related to the final Door Hardware Schedule, and include basic installation instructions with each item or package.
- C. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to the Owner shall be established at the "Keying Conference".

1.07 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.
- B. Door and Frame Preparation: Doors and corresponding frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.

1.08 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Warranty Period: Unless otherwise indicated, warranty shall be one year from date of Substantial Completion.

PART 2 PRODUCTS

2.01 BUTT HINGES

- A. Hinges: ANSI/BHMA A156.1 butt hinges with number of hinge knuckles and other options as specified in the Door Hardware Sets.
 - 1. Quantity: Provide the following hinge quantity:
 - a. Two Hinges: For doors with heights up to 60 inches.
 - b. Three Hinges: For doors with heights 61 to 90 inches.
 - c. Four Hinges: For doors with heights 91 to 120 inches.
 - d. For doors with heights more than 120 inches, provide 4 hinges, plus 1 hinge for every 30 inches of door height greater than 120 inches.
 - 2. Hinge Size: Provide the following, unless otherwise indicated, with hinge widths sized for door thickness and clearances required:
 - a. Widths up to 3'0": 4-1/2" standard or heavy weight as specified.
 - b. Sizes from 3'1" to 4'0": 5" standard or heavy weight as specified.
 - 3. Hinge Weight and Base Material: Unless otherwise indicated, provide the following:
 - a. Exterior Doors: Heavy weight, non-ferrous, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate standard weight.
 - b. Interior Doors: Standard weight, steel, ball bearing or oil impregnated bearing hinges unless Hardware Sets indicate heavy weight.

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- 4. Hinge Options: Comply with the following:
 - a. Non-removable Pins: With the exception of electric through wire hinges, provide set screw in hinge barrel that, when tightened into a groove in hinge pin, prevents removal of pin while door is closed; for all out-swinging lockable doors.
- 5. Manufacturers:
 - a. McKinney (MK) TA/T4A Series, 5-knuckle.

2.02 POWER TRANSFER DEVICES

- A. Electric Door Wire Harnesses: Provide electric/data transfer wiring harnesses with standardized plug connectors to accommodate up to twelve (12) wires. Connectors plug directly to throughdoor wiring harnesses for connection to electric locking devices and power supplies. Provide sufficient number and type of concealed wires to accommodate electric function of specified hardware. Provide a connector for through-door electronic locking devices and from hinge to junction box above the opening. Wire nut connections are not acceptable. Determine the length required for each electrified hardware component for the door type, size and construction, minimum of two per electrified opening.
 - 1. Provide one each of the following tools as part of the base bid contract:
 - a. McKinney (MK) Electrical Connecting Kit: QC-R001.
 - b. McKinney (MK) Connector Hand Tool: QC-R003.
 - 2. Manufacturers:
 - a. McKinney (MK) QC-C Series.

2.03 CYLINDERS AND KEYING

- A. General: Cylinder manufacturer to have minimum (10) years experience designing secured master key systems and have on record a published security keying system policy. Manufacturer shall be based in the United States of America.
 - 1. Manufacturers:
 - a. Medeco (MC).
 - b. No Substitution.
- B. Cylinder Types: Original manufacturer cylinders able to supply the following cylinder formats and types:
 - 1. Threaded mortise cylinders with rings and cams to suit hardware application.
 - 2. Rim cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 - 3. Bored or cylindrical lock cylinders with tailpieces as required to suit locks.
 - 4. Tubular deadlocks and other auxiliary locks.
 - 5. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.
 - 6. Keyway: Manufacturer's Standard.
- C. High Security Cylinders: ANSI/BHMA A156.5, Grade 1 Certified Products Directory (CPD) listed cylinders certified to UL437, including pick, attack and drill resistance. Pick resistance to incorporate two or more independent locking mechanisms including a pin tumbler device with five or six pin chambers, mushroom-shaped driver pins, and sidebar locking mechanism operated independently from the six top pin tumbler device. Drill resistance to incorporate cylinder housing with fixed case-hardened inserts protecting the pin tumbler shear line, cylinder plugs with case-hardened inserts protecting both the pin tumbler shear line and the side bar, mushroom-shaped stainless steel driver pins, and stainless steel side pins. Cylinders to be factory keyed.
 - 1. New high security key systems shall not be established with products that have an expired patent. Expired systems shall only be specified and supplied to support existing systems.
 - 2. Cylinders shall have tumbler pins that lift and rotate and shall include at least 3 side pins which all interact with the sidebar to operate.
 - 3. Manufacturers:

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- a. Medeco (MC) Medeco 4.
- b. No Substitution.
- D. Keying System: Each type of lock and cylinders to be factory keyed.
 - 1. Supplier shall conduct a "Keying Conference" to define and document keying system instructions and requirements.
 - 2. Furnish factory cut, nickel-silver large bow permanently inscribed with a visual key control number as directed by Owner.
 - 3. Existing System: Field verify and key cylinders to match Owner's existing system.
- E. Key Quantity: Provide the following minimum number of keys:
 - 1. Change Keys per Cylinder: Two (2)
 - 2. Master Keys (per Master Key Level/Group): Five (5).
 - 3. Construction Keys (where required): Ten (10).
- F. Construction Keying: Provide construction master keyed cylinders.
- G. Key Registration List (Bitting List):
 - 1. Provide keying transcript list to Owner's representative in the proper format for importing into key control software.
 - 2. Provide transcript list in writing or electronic file as directed by the Owner.

2.04 CYLINDRICAL LOCKS AND LATCHING DEVICES

- A. Cylindrical Locksets, Grade 1 (Heavy Duty): ANSI/BHMA A156.2, Series 4000, Operational Grade 1 Certified Products Directory (CPD) listed cylindrical locksets. Listed manufacturers shall meet all functions and features as specified herein.
 - 1. Electromechanical locksets shall have the following functions and features:
 - a. Universal Molex plug-in connectors that have standardized color-coded wiring and are field configurable in fail safe or fail secure and operate from 12vdc to 24vdc regulated.
 - b. EcoFlex or equivalent technology that reduces energy consumption up to 92% as certified by GreenCircle.
 - c. Options to be available for request-to-exit or enter signaling, latchbolt and deadbolt monitoring.
 - d. Two-year limited warranty on electrified functions.
 - 2. Manufacturers:
 - a. Sargent Manufacturing (SA) 10X Line.
 - b. No Substitution.

2.05 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
 - 1. Flat-Lip Strikes: For locks with three-piece antifriction latchbolts, as recommended by manufacturer.
 - 2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
 - 3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.
 - 4. Double-lipped strikes: For locks at double acting doors. Furnish with retractable stop for rescue hardware applications.
- B. Standards: Comply with the following:
 - 1. Strikes for Mortise Locks and Latches: BHMA A156.13.
 - 2. Strikes for Bored Locks and Latches: BHMA A156.2.
 - 3. Strikes for Auxiliary Deadlocks: BHMA A156.36.

4. Dustproof Strikes: BHMA A156.16.

2.06 SURFACE DOOR CLOSERS

- A. All door closers specified herein shall meet or exceed the following criteria:
 - 1. General: Door closers to be from one manufacturer, matching in design and style, with the same type door preparations and templates regardless of application or spring size. Closers to be non-handed with full sized covers.
 - 2. Standards: Closers to comply with UL-10C for Positive Pressure Fire Test and be U.L. listed for use of fire rated doors.
 - 3. Size of Units: Comply with manufacturer's written recommendations for sizing of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Where closers are indicated for doors required to be accessible to the Americans with Disabilities Act, provide units complying with ANSI ICC/A117.1.
 - 4. Closer Arms: Provide heavy duty, forged steel closer arms unless otherwise indicated in Hardware Sets.
 - 5. Closers shall not be installed on exterior or corridor side of doors; where possible install closers on door for optimum aesthetics.
 - 6. Closer Accessories: Provide door closer accessories including custom templates, special mounting brackets, spacers and drop plates as required for proper installation. Provide through-bolt and security type fasteners as specified in the hardware sets.
- B. Door Closers, Surface Mounted (Large Body Cast Iron): ANSI/BHMA A156.4, Grade 1 Certified Products Directory (CPD) listed surface mounted, heavy duty door closers with complete spring power adjustment, sizes 1 thru 6; and fully operational adjustable according to door size, frequency of use, and opening force. Closers to be rack and pinion type, one piece cast iron body construction, with adjustable backcheck and separate non-critical valves for closing sweep and latch speed control.
 - 1. Manufacturers:
 - a. Sargent Manufacturing (SA) 281 Series.

2.07 ARCHITECTURAL TRIM

- A. Door Protective Trim
 - 1. General: Door protective trim units to be of type and design as specified below or in the Hardware Sets.
 - 2. Size: Fabricate protection plates (kick, armor, or mop) not more than 2" less than door width (LDW) on stop side of single doors and 1" LDW on stop side of pairs of doors, and not more than 1" less than door width on pull side. Coordinate and provide proper width and height as required where conflicting hardware dictates. Height to be as specified in the Hardware Sets.
 - 3. Where plates are applied to fire rated doors with the top of the plate more than 16" above the bottom of the door, provide plates complying with NFPA 80. Consult manufacturer's catalog and template book for specific requirements for size and applications.
 - 4. Protection Plates: ANSI/BHMA A156.6 protection plates (kick, armor, or mop), fabricated from the following:
 - a. Stainless Steel: 300 grade, 050-inch thick.
 - 5. Options and fasteners: Provide manufacturer's designated fastener type as specified in the Hardware Sets. Provide countersunk screw holes.
 - 6. Manufacturers:
 - a. Rockwood (RO).

2.08 DOOR STOPS AND HOLDERS

A. General: Door stops and holders to be of type and design as specified below or in the Hardware Sets.

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- B. Door Stops and Bumpers: ANSI/BHMA A156.16, Grade 1 door stops and wall bumpers. Provide wall bumpers, either convex or concave types with anchorage as indicated, unless floor or other types of door stops are specified in Hardware Sets. Do not mount floor stops where they will impede traffic. Where floor or wall bumpers are not appropriate, provide overhead type stops and holders.
 - 1. Manufacturers:
 - a. Rockwood (RO).

2.09 ARCHITECTURAL SEALS

- A. General: Thresholds, weatherstripping, and gasket seals to be of type and design as specified below or in the Hardware Sets. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing on interior doors where indicated. At exterior applications provide non-corrosive fasteners and elsewhere where indicated.
- B. Smoke Labeled Gasketing: Assemblies complying with NFPA 105 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for smoke control ratings indicated, based on testing according to UL 1784.
 - 1. Provide smoke labeled perimeter gasketing at all smoke labeled openings.
- C. Fire Labeled Gasketing: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to UL-10C.
 - 1. Provide intumescent seals as indicated to meet UL10C Standard for Positive Pressure Fire Tests of Door Assemblies, and NFPA 252, Standard Methods of Fire Tests of Door Assemblies.
- D. Sound-Rated Gasketing: Assemblies that are listed and labeled by a testing and inspecting agency, for sound ratings indicated.
- E. Replaceable Seal Strips: Provide only those units where resilient or flexible seal strips are easily replaceable and readily available from stocks maintained by manufacturer.
- F. Manufacturers:
 - 1. Pemko (PE).

2.10 ELECTRONIC ACCESSORIES

- A. Door Position Switches: Door position magnetic reed contact switches specifically designed for use in commercial door applications. On recessed models the contact and magnetic housing snap-lock into a 1" diameter hole. Surface mounted models include wide gap distance design complete with armored flex cabling. Provide SPDT, N/O switches with optional Rare Earth Magnet installation on steel doors with flush top channels.
 - 1. Manufacturers:
 - a. Securitron (SU) DPS Series.
- B. Switching Power Supplies: Provide power supplies with either single or dual voltage configurations at 12 or 24VDC. Power supplies shall have battery backup function with an integrated battery charging circuit and shall provide capability for power distribution, direct lock control and Fire Alarm Interface (FAI) through add on modules. Power supplies shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs.
 - 1. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
 - 2. Manufacturers:
 - a. Securitron (SU) AQD Series.
- C. Intelligent Switching Power Supplies: Provide power supplies with single, dual or multi-voltage configurations at 12 and/or 24VDC. Power Supply shall have battery backup function with an integrated battery charging circuit. The power supply shall have a standard, integrated Fire Alarm Interface (FAI). The power supply shall provide capability for secondary voltage, power

distribution, direct lock control and network monitoring through add on modules. The power supply shall be expandable up to 16 individually protected outputs. Output modules shall provide individually protected, continuous outputs and/or individually protected, relay controlled outputs. Network modules shall provide remote monitoring functions such as status reporting, fault reporting and information logging.

- 1. Provide the least number of units, at the appropriate amperage level, sufficient to exceed the required total draw for the specified electrified hardware and access control equipment.
- 2. Manufacturers:
 - a. Securitron (SU) AQL Series.

2.11 FABRICATION

A. Fasteners: Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. Provide screws according to manufacturers recognized installation standards for application intended.

2.12 FINISHES

- A. Standard: Designations used in the Hardware Sets and elsewhere indicate hardware finishes complying with ANSI/BHMA A156.18, including coordination with traditional U.S. finishes indicated by certain manufacturers for their products.
- B. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware
- C. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine scheduled openings, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.02 PREPARATION

- A. Hollow Metal Doors and Frames: Comply with ANSI/DHI A115 series.
- B. Wood Doors: Comply with ANSI/DHI A115-W series.

3.03 INSTALLATION

- A. Install each item of mechanical and electromechanical hardware and access control equipment to comply with manufacturer's written instructions and according to specifications.
 - 1. Installers are to be trained and certified by the manufacturer on the proper installation and adjustment of fire, life safety, and security products including: hanging devices; locking devices; closing devices; and seals.
- B. Mounting Heights: Mount door hardware units at heights indicated in following applicable publications, unless specifically indicated or required to comply with governing regulations:
 - 1. Standard Steel Doors and Frames: DHI's "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames."
 - 2. DHI TDH-007-20: Installation Guide for Doors and Hardware.
 - 3. Where indicated to comply with accessibility requirements, comply with ANSI A117.1 "Accessibility Guidelines for Buildings and Facilities."
 - 4. Provide blocking in drywall partitions where wall stops or other wall mounted hardware is located.

- C. Retrofitting: Install door hardware to comply with manufacturer's published templates and written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 9 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
- D. Push Plates and Door Pulls: When through-bolt fasteners are in the same location as a push plate, countersink the fasteners flush with the door face allowing the push plate to sit flat against the door.
- E. Thresholds: Set thresholds for exterior and acoustical doors in full bed of sealant complying with requirements specified in Division 7 Section "Joint Sealants."
- F. Storage: Provide a secure lock up for hardware delivered to the project but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.04 FIELD QUALITY CONTROL

- A. Field Inspection (Punch Report): Reference Division 01 Sections "Closeout Procedures". Produce project punch report for each installed door opening indicating compliance with approved submittals and verification hardware is properly installed, operating and adjusted. Include list of items to be completed and corrected, indicating the reasons or deficiencies causing the Work to be incomplete or rejected.
 - 1. Organization of List: Include separate Door Opening and Deficiencies and Corrective Action Lists organized by Mark, Opening Remarks and Comments, and related Opening Images and Video Recordings.

3.05 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

3.06 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered and dry place. Protect exposed hardware installed on doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean adjacent surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of owner occupancy.

3.07 DEMONSTRATION

A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and electromechanical door hardware.

3.08 DOOR HARDWARE SETS

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
 - 1. Quantities listed are for each pair of doors, or for each single door.
 - 2. The supplier is responsible for handing and sizing all products.
 - 3. Where multiple options for a piece of hardware are given in a single line item, the supplier shall provide the appropriate application for the opening.

- 4. At existing openings with new hardware the supplier shall field inspect existing conditions prior to the submittal stage to verify the specified hardware will work as required. Provide alternate solutions and proposals as needed.
- B. Manufacturer's Abbreviations:
 - 1. MK McKinney
 - 2. SA SARGENT
 - 3. MC Medeco
 - 4. RO Rockwood
 - 5. PE Pemko
 - 6. SU Securitron

Hardware Sets

Set: 1.0

Doors: H512, H514, H542, H548, H550, H552, H554, H558, H568, H574, H576, H578, H584, H586

3 Hinge, Full Mortise	TA2714	US10	MK
1 Entry/Office Lock	LC 10XG05 LL	US10	SA
1 Cylinder	20203 49 W S	US10	MC
1 Wall Stop	409	US10	RO
1 Gasketing	S44GR		PE

<u>Set: 1.1</u>

Doors: H540

3 Hinge, Full Mortise	TA2714	US10	MK
1 Entry/Office Lock	LC 10XG05 LL	US10	SA
1 Cylinder	20203 49 W S	US10	MC
1 Overhead Stop	1-X36	US10	RX
1 Gasketing	S44GR		PE

Doors: H544

3 Hinge, Full Mortise	TA2714	US10	MK
1 Privacy Lock	10XU65 LL	US10	SA
1 Wall Stop	409	US10	RO
1 Gasketing	S44GR		PE

<u>Set: 3.0</u>

Set: 2.0

Doors: H518, H546

3 Hinge, Full Mortise	TA2714	US10	MK
1 Passage Latch	10XU15 LL	US10	SA
1 Surface Closer	281 UO	EP	SA
1 Kick Plate	K1050X1.5LDW CSK BEV	US10	RO
1 Wall Stop	409	US10	RO
1 Gasketing	S44GR		PE

<u>Set: 3.1</u>

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Doors: H516A, H516B

3 Hinge, Full Mortise	TA2714	US10	MK
1 Passage Latch	10XU15 LL	US10	SA
1 Surface Closer	281 CPS	EP	SA
1 Kick Plate	K1050X1.5LDW CSK BEV	US10	RO
1 Wall Stop	409	US10	RO
1 Gasketing	S44GR		PE
	<u>Set: 4.0</u>		

Doors: H545

3 Hinge, Full Mortise	TA2714	US10	MK
1 Passage Latch	10XU15 LL	US10	SA
1 Wall Stop	409	US10	RO
1 Gasketing	S44GR		PE

<u>Set: 5.0</u>

Doors: H569

3 Hinge, Full Mortise	TA2714	US10	MK
1 Storeroom/Closet Lock	LC 10XG04 LL	US10	SA
1 Cylinder	20203 49 W S	US10	MC
1 Surface Closer	281 CPS	EP	SA
1 Kick Plate	K1050X1.5LDW CSK BEV	US10	RO
1 Wall Stop	409	US10	RO
1 Gasketing	S44GR		PE

<u>Set: 6.0</u>

Doors: H560A, H562A, H562

2 Hinge, Full Mortise	TA2714	US10	MK	
1 Hinge, Full Mortise	TA2714 QC	US10	MK	4
1 Fail Secure Lock	LC RX 10XG71 LL	US10	SA	4
1 Cylinder	20203 49 W S	US10	MC	
1 Surface Closer	281 UO	EP	SA	
1 Kick Plate	K1050X1.5LDW CSK BEV	US10	RO	
1 Wall Stop	409	US10	RO	
1 Gasketing	S44GR		PE	

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1 Frame Harness	QC-C1500 (as required)	MK	4
1 Door Harness	QC-C (as required)	MK	4
1 Position Switch	DPS-M-GR	SU	4
1 Power Supply	AQL4-R8E1	SU	4
1 Card Reader	provided by access control.		

<u>Set: 6.1</u>

Doors: H560

2 Hinge, Full Mortise	TA2714	US10	MK	
1 Hinge, Full Mortise	TA2714 QC	US10	MK	4
1 Fail Secure Lock	LC RX 10XG71 LL	US10	SA	4
1 Cylinder	20203 49 W S	US10	MC	
1 Surface Closer	281 CPS	EP	SA	
1 Kick Plate	K1050 X1.5LDW CSK BEV	US10	RO	
1 Wall Stop	409	US10	RO	
1 Gasketing	S44GR		PE	
1 Frame Harness	QC-C1500 (as required)		MK	4
1 Door Harness	QC-C (as required)		MK	4
1 Position Switch	DPS-M-GR		SU	4
1 Power Supply	AQL4-R8E1		SU	4
1 Card Reader	provided by access control.			

<u>Set: 7.0</u>

Doors: H510A

3 Hinge, Full Mortise	TA2714 NRP	US10	MK
1 Rim Exit with Local Alarm	AL 8810 EO	US10	SA
1 Cylinder Housing	X type required	US10	MC
1 Cylinder	X type required	US10	MC
1 Surface Closer with Stop	281 CPS	EP	SA
1 Kick Plate	K1050X1.5LDW CSK BEV	US10	RO
1 Gasketing	S44GR		PE

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glazing units.
- B. Glazing compounds.

1.02 RELATED REQUIREMENTS

- A. Section 08 1113 Hollow Metal Doors and Frames: Glazed lites in doors and borrowed lites.
- B. Section 08 1416 Flush Wood Doors: Glazed lites in doors.
- C. Section 08 4313 Aluminum-Framed Storefronts: Glazing provided as part of storefront assembly.

1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 Safety Standard for Architectural Glazing Materials; Current Edition.
- B. ANSI Z97.1 American National Standard for Safety Glazing Materials Used in Buildings -Safety Performance Specifications and Methods of Test; 2015 (Reaffirmed 2020).
- C. ASTM C864 Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005 (Reapproved 2019).
- D. ASTM C920 Standard Specification for Elastomeric Joint Sealants; 2018.
- E. ASTM C1036 Standard Specification for Flat Glass; 2021.
- F. ASTM C1048 Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass; 2018.
- G. ASTM C1193 Standard Guide for Use of Joint Sealants; 2016 (Reapproved 2023).
- H. ASTM C1376 Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass; 2021a.
- I. ASTM E2190 Standard Specification for Insulating Glass Unit Performance and Evaluation; 2019.
- J. GANA (SM) GANA Sealant Manual; 2008.

1.04 SUBMITTALS

- A. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- B. Samples: Submit two samples 12 by 12 inch in size of glass units.
- C. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.06 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.07 WARRANTY

A. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

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- A. Float Glass Manufacturers:
 - 1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
 - 2. Guardian Glass, LLC: www.guardianglass.com/#sle.
 - 3. Pilkington North America Inc: www.pilkington.com/na/#sle.
 - 4. Saint Gobain North America: www.saint-gobain.com/#sle.
 - 5. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
 - 6. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.

2.02 GLASS MATERIALS

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
 - 1. Annealed Type: ASTM C1036, Type I Transparent Flat, Class 1 Clear, Quality Q3.
 - 2. Kind FT Fully Tempered Type: Complies with ASTM C1048.
 - 3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.

2.03 GLAZING UNITS

- A. Type G-1 Monolithic Interior Vision Glazing:
 - 1. Applications: Interior glazing unless otherwise indicated.
 - 2. Glass Type: Annealed float glass.
 - 3. Tint: Clear.
 - 4. Thickness: 1/4 inch, nominal.
- B. Type G-2 Monolithic Safety Glazing: Non-fire-rated.
 - 1. Applications:
 - a. Glazed lites in doors, except fire doors.
 - b. Glazed sidelights to doors, except in fire-rated walls and partitions.
 - c. Other locations required by applicable federal, state, and local codes and regulations.
 - d. Other locations indicated on drawings.
 - 2. Glass Type: Fully tempered safety glass as specified.
 - 3. Tint: Clear.
 - 4. Thickness: 1/4 inch, nominal.
- C. Type G-3 Monolithic Interior Vision Glazing:
 - 1. Applications: Transaction Window.
 - 2. Glass Type: Fully tempered float glass.
 - 3. Tint: Clear.
 - 4. Thickness: 3/8 inch, nominal.

2.04 GLAZING COMPOUNDS

A. Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

2.05 ACCESSORIES

- A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.
- B. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
- C. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.
- D. Transaction Window Glass Channels: Provide mill finished aluminum channels by CR Laurence Co. or equivalent.
- E. Transaction Window Speak Holes: See drawings for details.

PART 3 EXECUTION

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3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

- A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

3.04 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

- A. Application Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.05 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

- A. Application Interior Glazed: Set glazing infills from the interior of the building.
- B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- E. Place glazing tape on free perimeter of glazing in same manner described above.
- F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- G. Carefully trim protruding tape with knife.

3.06 CLEANING

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove nonpermanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

3.07 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

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B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION

SECTION 09 0561 COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
 - 1. Resilient tile.
 - 2. Carpet tile.
 - 3. Any type of flooring that can trap moisture and cause failure of setting adhesives.
- B. Removal of existing floor coverings.
- C. Preparation of new and existing concrete floor slabs for installation of floor coverings.
 - 1. Including floors that were previously remediated.
 - 2. Including floors with previously abated hazardous materials.
- D. Testing of concrete floor slabs for moisture and alkalinity (pH).
- E. Remediation of new and existing concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
 - 1. New concrete floors shall be ready and in a condition that allows for proper installation of new flooring. Contractor shall perform remediation of new concrete floor slabs where remediation is indicated by testing report.
 - a. In the event that a new concrete floor slab testing shows that the moisture or alkalinity (pH) conditions are unacceptable, due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.
 - 2. Contractor shall remediate all existing concrete floor slabs on grade that are to remain unless expressly indicated on the drawings that the existing floor slab has a vapor barrier present and also states that the floor shall not be remediated. Cost for remediation shall be included in the bids.
 - a. In the event that an existing concrete floor slab has a vapor barrier present, and testing shows that the moisture and alkalinity (pH) conditions are acceptable, a contract modification will be issued in favor of the Owner.
- F. Patching compound.
- G. Remedial floor coatings.

1.02 REFERENCE STANDARDS

- A. ASTM C109/C109M Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 50 mm [2 in.] Cube Specimens); 2023.
- B. ASTM C472 Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete; 2020.
- C. ASTM D4259 Standard Practice for Preparation of Concrete by Abrasion Prior to Coating Application; 2018.
- D. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.
- E. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2023.
- F. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.
- G. RFCI (RWP) Recommended Work Practices for Removal of Resilient Floor Coverings; 2018.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordinate scheduling of cleaning and testing, so that preliminary cleaning has been completed for at least 24 hours prior to testing.

1.04 SUBMITTALS

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- A. Visual Observation Report: For new and existing floor coverings to be removed.
- B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
 - 1. Moisture and alkalinity (pH) limits and test methods.
 - 2. Manufacturer's required bond/compatibility test procedure.
- C. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
- D. Testing Report:
 - 1. Description of areas tested; include floor plans and photographs if helpful.
 - 2. Summary of conditions encountered.
 - 3. Moisture and alkalinity (pH) test reports.
 - 4. Copies of specified test methods.
 - 5. Recommendations for remediation of unsatisfactory surfaces.
 - 6. Submit report to Architect.
 - 7. Submit report not more than two business days after conclusion of testing.
- E. Adhesive Bond and Compatibility Test Report.
- F. Copy of RFCI (RWP).
- G. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.

1.05 QUALITY ASSURANCE

- A. The flooring contractor or an independent testing agency shall begin tracking and monitoring Moisture and pH testing results 4 weeks prior to scheduled installation of resilient flooring.
- B. Report all results, in writing, to the Owner/Architect, Prime Contractor, and Construction Manager.
- C. In the event that test values exceed manufacturer's limits, a independent third party testing agency may be brought in to retest and verify the results.
 1. The Owner shall pay for third party testing.
- D. Moisture and alkalinity (pH) testing may be performed by an independent testing agency employed and paid by Contractor or may be performed by flooring installers own personnel.
- E. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
- F. Contractor's Responsibility Relating to Independent Agency Testing (When Applicable):
 - 1. Establish direct funding to provide for cost of testing agency services.
 - 2. Provide access for and cooperate with testing agency.
 - 3. Confirm date of start of testing at least 10 days prior to actual start.
 - 4. Allow at least 4 business days on site for testing agency activities.
 - 5. Achieve and maintain specified ambient conditions.
 - 6. Notify Architect when specified ambient conditions have been achieved and when testing will start.
- G. Remedial Coating Installer Qualifications: Company specializing in performing work of the type specified in this section, trained by or employed by coating manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.
- B. Deliver materials in manufacturer's packaging; include installation instructions.
- C. Keep materials from freezing.

1.07 FIELD CONDITIONS

A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.

B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
 - 1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
 - 2. Latex or polyvinyl acetate additions are permitted; gypsum content is prohibited.
 - 3. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
 - 4. Products:
 - a. ARDEX Engineered Cements; ARDEX Feather Finish: www.ardexamericas.com/#sle.
 - b. H.B. Fuller Construction Products, Inc; TEC Feather Edge Skim Coat: www.tecspecialty.com/#sle.
 - c. LATICRETE International, Inc; SKIM LITE: www.laticrete.com/#sle.
 - d. USG Corporation; Durock Brand Advanced Skim Coat Floor Patch: www.usg.com/#sle.
 - e. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.
- B. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low-VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.
- C. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
 - 1. Thickness: As required for application and in accordance with manufacturer's installation instructions.
 - 2. Products:
 - a. ARDEX Engineered Cements; ARDEX MC RAPID: www.ardexamericas.com/#sle.
 - b. Custom Building Products; TechMVC Moisture Vapor and Alkalinity Barrier: www.custombuildingproducts.com/#sle.
 - c. GCP Applied Technologies: www.gcpat.com/#sle.
 - d. H.B. Fuller Construction Products, Inc; TEC LiquiDam: www.tecspecialty.com/#sle.
 - e. LATICRETE International, Inc; LATICRETE VAPOR BAN E: www.laticrete.com/#sle.
 - f. Mapei Corporation; Planiseal VS: www.mapei.com/#sle.
 - g. Maxxon Corporation; Maxxon MVP Two-Part Epoxy: www.maxxon.com/#sle.
 - h. SCHONOX SHP (Special Acrylic Primer), EPA (Two-Part, Epoxy Based Moisture Mitigation System), and ZM (Cement Based Self-Leveling Compound by SCHONOX HPS North America: www.hpsubfloors.com.
 - i. Sika Corporation; Sikafloor Moisture Tolerance Epoxy Primer and Sikafloor Self-Leveling Moisture Tolerant Resurfacer: www.sikafloorusa.com.
 - j. SINAK Corporation; VECT-R: www.sinak.com/#sle.
 - k. Tnemec Company, Inc; Series 208 Epoxoprime MVT: www.tnemec.com/#sle.
 - I. USG Corporation; Durock CoverPrep: www.usg.com/#sle.
 - m. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.

PART 3 EXECUTION

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3.01 CONCRETE SLAB PREPARATION

- A. Perform following operations in the order indicated:
 - 1. Existing concrete slabs (on-grade and elevated) with existing floor coverings:
 - a. Removal of existing floor covering.
 - 2. Existing concrete slabs with coatings or penetrating sealers/hardeners/dustproofers:

a. Prepare surface according to recommendations of remedial coating manufacturer and according to ASTM D4259.

- 3. Preliminary cleaning.
- 4. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
- 5. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
- 6. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
- 7. Specified remediation, if required.
- 8. Patching, smoothing, and leveling, as required.
- 9. Grinding, filling, and leveling, as required.
- 10. Other preparation specified.
- 11. Adhesive bond and compatibility test.
- 12. Protection.
- B. Notification:
 - 1. Notify the Owner/Architect, Prime Contractor, and Construction Manager, immediately upon discovery of test results that inhibit proper installation of flooring products. Owner/Architect will determine how to proceed.
- C. Remediations:
 - 1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
 - 2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
 - 3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring.

3.02 REMOVAL OF EXISTING FLOOR COVERINGS

- A. Comply with local, State, and federal regulations and recommendations of RFCI (RWP), as applicable to floor covering being removed.
- B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

3.03 PRELIMINARY CLEANING

- A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
- B. Do not use solvents or other chemicals for cleaning.

3.04 MOISTURE VAPOR EMISSION TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.

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- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

3.05 INTERNAL RELATIVE HUMIDITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F2170 Procedure A and as follows.
- D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.
- F. Report: Report the information required by the test method.

3.06 ALKALINITY TESTING

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
 - 1. Use a wide range alkalinity (pH) test paper, its associated chart, and distilled or deionized water.
 - 2. Place several drops of water on a clean surface of concrete, forming a puddle approximately 1 inch in diameter. Allow the puddle to set for approximately 60 seconds, then dip the alkalinity (pH) test paper into the water, remove it, and compare immediately to chart to determine alkalinity (pH) reading.
 - 3. Use of a digital pH meter with probe is acceptable; follow meter manufacturer's instructions.
- C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.07 PREPARATION

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
- D. At floors where existing flooring was previously abated grind, fill, and level as necessary to meet the preparation requirements of the new flooring.
- E. Do not fill expansion joints, isolation joints, or other moving joints.

3.08 ADHESIVE BOND AND COMPATIBILITY TESTING

A. Comply with requirements and recommendations of floor covering manufacturer.

3.09 APPLICATION OF REMEDIAL FLOOR COATING

- A. Install in accordance with coating manufacturer's instructions.
- B. Comply with requirements and recommendations of coating manufacturer.

3.10 PROTECTION

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A. Cover prepared floors with building paper or other durable covering.

SECTION 09 2116 GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Acoustic insulation.
- D. Gypsum wallboard.
- E. Backing Board For Non-Wet Areas, Gypsum-Based Board Tile Backer.
- F. Joint treatment and accessories.
- G. Prefabricated Wood Blocking System.
- H. Drywall Grid Suspension System.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.

1.03 REFERENCE STANDARDS

- A. AISI S220 North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.
- B. AISI S240 North American Standard for Cold-Formed Steel Structural Framing; 2015, with Errata (2020).
- C. ASTM A1003/A1003M Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members; 2015.
- D. ASTM C1007 Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.
- E. ASTM C475/C475M Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).
- F. ASTM C635/C635M Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
- G. ASTM C665 Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- H. ASTM C754 Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2020.
- I. ASTM C840 Standard Specification for Application and Finishing of Gypsum Board; 2023.
- J. ASTM C954 Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2022.
- K. ASTM C1002 Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.
- L. ASTM C1047 Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.
- M. ASTM C1396/C1396M Standard Specification for Gypsum Board; 2017.
- N. ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- O. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- P. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- Q. ASTM E413 Classification for Rating Sound Insulation; 2022.
- R. GA-214 Levels of Finish for Gypsum Panel Products; 2021.

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- S. GA-216 Application and Finishing of Gypsum Panel Products; 2024.
- T. GA-600 Fire Resistance and Sound Control Design Manual; 2024.
- U. UL (FRD) Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate the location of all expansion joints in plan and elevation view. Include details at intersections of walls, floors, ceilings, and other construction.
- B. Product Data:
 - 1. Provide data on metal framing, gypsum board, accessories, and joint finishing system.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years of documented experience.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Interior Partitions, Indicated as Acoustic: Provide completed assemblies with the following characteristics:
 - 1. Acoustic Attenuation: STC as indicated calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
 - 2. Walls indicated to received sound insulation that are not indicated to meet an STC rating are not intended to be constructed as an acoustic assembly.

2.02 METAL FRAMING MATERIALS

- A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S220 or equivalent.
- B. Manufacturers Metal Framing, Connectors, and Accessories:
 - 1. ClarkDietrich: www.clarkdietrich.com/#sle.
 - 2. MarinoWARE: www.marinoware.com/#sle.
 - 3. Phillips Manufacturing Co: www.phillipsmfg.com/#sle.
 - 4. Telling Industries: www.tellingindustries.com/#sle.
 - 5. The Steel Network, Inc: www.steelnetwork.com.
 - 6. Custom Stud, Inc: www.customstud.com.
 - 7. Super Stud Building Products, Inc: www.buysuperstud.com.
 - 8. MRI Steel Framing, LLC: www.mristeelframing.com.
 - 9. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.
- C. Nonstructural Framing System Components: AISI S220; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
 - 1. Shapes and Sizes: As indicated on the drawings and as follows.
 - a. Studs: "C" shaped with flat or formed webs.
 - b. Runners: "U" shaped, sized to match studs.
- D. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and screwed to secondary deflection channel set inside but unattached to top track.
- E. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.
 - 1. Main runners with double stitched web for added strength and knurled face for easier screw installation.
 - 2. Cross tees feature staked-on end tabs for optimal tightness and ease of installation; Stepped-end design featured on cross tees
 - 3. Material: Classified Heavy Duty per ASTM C635/C635M; Utilizes G40 hot-dipped galvanized construction for superior corrosion resistance.

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- 4. Products:
 - a. Armstrong; Drywall Grid System: www.armstrongceilings.com.
 - b. CertainTeed Corporation: www.certainteed.com/ceilings-and-walls/#sle.
 - c. Rockfon; Chicago Metallic Drywall Grid: www.rockfon.com.
 - d. USG Corporation; Drywall Suspension System: www.usg.com/#sle.
 - e. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.

2.03 BOARD MATERIALS

- A. Manufacturers Gypsum-Based Board:
 - 1. American Gypsum Company: www.americangypsum.com/#sle.
 - 2. CertainTeed Corporation: www.certainteed.com/#sle.
 - 3. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
 - 4. Gold Bond Building Products, LLC provided by National Gypsum Company: www.goldbondbuilding.com/#sle.
 - 5. PABCO Gypsum: www.pabcogypsum.com/#sle.
 - 6. USG Corporation: www.usg.com/#sle.
 - 7. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
 - 2. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL, or WH listed.
 - 3. Thickness:
 - a. Vertical Surfaces: 5/8 inch.
 - b. Ceilings: 5/8 inch.
- C. Backing Board For Non-Wet Areas: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
 - 1. Application: Vertical surfaces behind thinset tile and wet walls (walls with plumbing fixtures) as required by code. Do not use this type of backing board in wet areas like tub and shower surrounds.
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 3. Type X Thickness: 5/8 inch.
 - 4. Edges: Tapered.

2.04 GYPSUM BOARD ACCESSORIES

- A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 or more inches as required to fill wall depth.
 - 1. ASTM E84 surface burning characteristics: Flame Spread Index 25 or less; Smoke Developed Index 450 or less.
- B. Sheet Vapor Retarder: Clear polyethylene film for above grade application, 6 mil thick.
- C. Finishing Accessories: ASTM C1047, extruded aluminum alloy (6063 T5), galvanized steel sheet ASTM A924/A924M G90, rolled zinc, or rigid plastic, unless noted otherwise.
 - 1. Types: As detailed or required for finished appearance.
 - a. Products for specific applications:
 - 1) Expansion Joints (V-Groove Joint): Trim-Tex #093V Expansion joint or approved equal shall be used at expansion joints in flat wall or ceiling applications.
 - 2) Angled Joints: Trim-Tex Magic Corner or approved equal shall be used at angular walls and ceilings.
 - 3) Wall Termination: Trim-Tex Tear Away XT Extra Tall Masking or approved equal shall be used at all locations where new construction terminates into existing construction or non-gypsum construction.
 - 2. Special Shapes: In addition to conventional corner bead and control joints, provide Ubead at exposed panel edges.
 - 3. Products:

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- a. Same manufacturer as framing materials.
- b. Fry Reglet Corporation: www.fryreglet.com/#sle.
- c. Phillips Manufacturing Co: www.phillipsmfg.com/#sle.
- d. Trim-tex, Inc: www.trim-tex.com/#sle.
- e. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.
- D. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
 - 2. Joint Compound: Drying type, vinyl-based, ready or field-mixed.
 - 3. Joint Compound (Optional): Setting type, field-mixed.
- E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.
- G. Prefabricated Blocking Systems: DANBACK 3/4 inch standard/treated plywood or approved equal: www.danback.com.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Install in accordance with ASTM C1007AISI S220 and manufacturer's instructions.
- B. Drywall Grid Suspension System Ceilings: Install suspension system in accordance with manufacturers instructions.
- C. Studs: Space studs at 16 inches on center.
 - 1. Extend partition framing to structure where indicated and to ceiling in other locations.
 - 2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
 - 3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
- D. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- E. Blocking: Install wood blocking for support of:
 - 1. Wall-mounted cabinets.
 - 2. Plumbing fixtures.
 - 3. Toilet partitions.
 - 4. Toilet accessories.
 - 5. Wall-mounted door hardware.
 - 6. All other items indicated on the drawings and in the specifications.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
 - 1. Place one bead continuously on substrate before installation of perimeter framing members.
 - 2. Place continuous bead at perimeter of each layer of gypsum board.
 - 3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

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3.04 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Provide solid continuous shims under first layer of gypsum board as necessary to minimize variations in plane. Tolerance of surface shall be as indicated.
- C. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
 - 1. Exception: Tapered edges to receive joint treatment at right angles to framing.
- D. Installation on framing: Use screws for attachment of boards.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
 - 1. Not more than 30 feet apart on walls, soffits, and ceilings in any direction.
 - 2. At intersections of soffits and intersecting walls.
 - 3. At intersection of half height wall and intersecting walls.
 - 4. At locations indicated on the drawings.
 - 5. Other locations where cracking may occur due to changes in height and structure.
 - 6. All jointing locations shall be indicated on shop drawings.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.06 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying or setting joint compound and finish with drying or setting joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C 840 (additional reference guideline; GA-214 Recommended Levels of Gypsum Board Finish), as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas including the following: (Level 5 shall be a thin skim coat of joint compound trowel applied; no spray or roller applied products will be accepted.)
 - a. Walls that are perpendicular to large glazed openings where glazed openings are 50% or more of the area of the wall, within the room, in which they are located.
 - b. Tall wall 16'-0" and taller.
 - c. Long walls and ceilings 30'-0" and longer.
 - d. Large wall and ceilings area of 500 square feet and larger.
 - e. Walls with glass-mat-faced wallboard products.
 - f. Walls, ceilings, and areas specifically indicated on the drawings.
 - 2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
 - a. No visible defects should be apparent under normal lighting conditions. Provide Level 5 finish where defects become apparent at no additional cost to the Owner.
 - b. Contractors that cannot guarantee their Level 4 finish will be free of visible defects under normal lighting conditions should provide a Level 5 finish.
 - c. If the Architect or Owner is unsatisfied with a Level 4 finish due to visible defects under normal lighting conditions then a Level 5 finish shall be installed at no additional cost to the Owner. No exceptions.
 - 3. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
 - 4. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Tapered edges of gypsum board that are not located at taped and filled joints shall also be filled and sanded smooth to match the plane of the wall.

3.07 TOLERANCES

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A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

SECTION 09 5100 ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.02 REFERENCE STANDARDS

- A. ASTM C635/C635M Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
- B. ASTM C636/C636M Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
- C. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- D. ASTM E1264 Standard Classification for Acoustical Ceiling Products; 2023.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

- A. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, and changes in elevation. Detail each type of junction and elevation change at no less than 1-1/2 inch per 12 inches annotating all related materials.
- B. Product Data: Provide data on suspension system components and acoustical units.
- C. Samples: Submit two samples 4 by 4 inch in size illustrating material and finish of acoustical units.
- D. Samples: Submit one samples each, 12 inches long, of suspension system main runner, cross runner, and perimeter molding.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.1. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 QUALITY ASSURANCE

- A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.
- B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.

1.06 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acoustic Tiles/Panels:
 - 1. Armstrong World Industries, Inc: www.armstrongceilings.com/#sle.
 - 2. Certainteed Architectural: www.certainteed.com/ceilings-and-walls/#sle.
 - 3. USG Corporation: www.usg.com/ceilings/#sle.
 - 4. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.

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- B. Suspension Systems:
 - 1. Same as for acoustical units.

2.02 ACOUSTICAL UNITS

- A. Acoustical Panels: Painted mineral fiber, with the following characteristics:
 - 1. Classification: ASTM E1264 Type III.
 - 2. Size: 24 by 24 inches.
 - 3. Thickness: 5/8 inch.
 - 4. Color: As indicated on drawings.
 - 5. Suspension System: Exposed grid.
 - 6. Products: As scheduled on the drawings or Designer pre-approved equivalent.

2.03 SUSPENSION SYSTEM(S)

- A. Manufacturers:
 - 1. Same as for acoustical units.
 - 2. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.
- B. Metal Suspension Systems General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
- C. Exposed Suspension System: Hot-dip galvanized steel grid and cap.
 - 1. Application(s): Exposed Grid Unless Indicated Otherwise.
 - 2. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
 - 3. Profile: Tee; 15/16 inch face width.
 - 4. Construction: Double web.
 - 5. Finish: Baked enamel.
 - 6. Color: White.

2.04 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Hold-Down Clips: Manufacturer's standard clips to suit application.
- D. Perimeter Moldings: Same metal and finish as grid.
 - 1. At Non-concealed Grid and Elevation Changes in Grid: Provide extruded aluminum pieces by same manufacturer as grid in height and profile indicated.
 - a. Manufactured by same grid manufacturer.
 - b. Edge height: As indicated.
 - 2. At Concealed Grid: Provide exposed L-shaped molding.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C 636/C 636M and ASTM C 636/C 636M and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected plan.
- D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.

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- E. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
- F. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- J. Do not eccentrically load system or induce rotation of runners.
- K. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Use longest practical lengths.
 - 2. Overlap and rivet corners.

3.03 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Lay directional patterned units with pattern parallel to longest room axis.
- D. Fit border trim neatly against abutting surfaces.
- E. Install units after above-ceiling work is complete.
- F. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- G. Cutting Acoustical Units:
 - 1. Cut to fit irregular grid and perimeter edge trim.
 - 2. Make field cut edges of same profile as factory edges.
- H. Install hold-down clips on panels within 10 ft of an exterior door.

3.04 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

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SECTION 09 6500 RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section 09 0561 - Common Work Results for Flooring Preparation: Testing of concrete slabs, removal of existing floor coverings and coating (where applicable), cleaning, and preparation.

1.03 REFERENCE STANDARDS

- A. ASTM F1066 Standard Specification for Vinyl Composition Floor Tile; 2023.
- B. ASTM F1861 Standard Specification for Resilient Wall Base; 2021.
- C. ASTM F1913 Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2019.

1.04 SUBMITTALS

- A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- B. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- C. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Extra Flooring Material: 20 square feet of each type and color.
 - 2. Extra Wall Base: 20 linear feet of each type and color.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum five years documented experience.
- B. Installer Qualifications: Company specializing in installing specified flooring with minimum five years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.

1.07 FIELD CONDITIONS

- A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Resilient Flooring:
 - 1. Products as scheduled on the drawings including:
 - a. Sheet Flooring.2. Other Approved Manufacturers:
 - a. As listed below; However, submit samples during the bidding process for Architect's review and approval.
 - b. Samples must be submitted a minimum of 12 days before bids are due to allow Architect adequate time to compare product samples before approving equivalent

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products.

- c. Products that are not submitted for approval will not be accepted at any point during the shop drawing process or construction.
- B. Other Approved Manufacturers:
 - 1. Substitutions: May be substituted with a designer pre-approved equivalent.

2.02 SHEET FLOORING

- A. Vinyl Sheet Flooring: Homogeneous without backing, with color and pattern throughout full thickness.
 - 1. Minimum Requirements: Comply with ASTM F1913.
 - 2. Thickness: 0.080 inch nominal.
 - 3. Seams: Heat welded.
 - 4. Integral coved base with cap strip.
 - 5. Pattern: As selected from manufacturer's standards.

2.03 RESILIENT BASE

- A. Resilient Base: ASTM F1861, Type TV, vinyl, thermoplastic; top set Style B, Cove.
 - 1. Manufacturers:
 - a. Allstate: www.allstaterubber.com/#sle.
 - b. Flexco Corporation: www.flexcofloors.com/#sle.
 - c. Johnsonite, a Tarkett Company: www.johnsonite.com.
 - d. Mannington Commercial: www.manningtoncommercial.com#sle.
 - e. nora: www.norarubber.com/#sle.
 - f. Roppe Corporation: www.roppe.com/#sle.
 - g. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.
 - 2. Height: 4 inches.
 - 3. Thickness: 0.125 inch.
 - 4. Finish: Satin.
 - 5. Length: Roll.
 - 6. Color: As scheduled on the drawings.

2.04 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
- C. Moldings, Nosings, Transitions, and Edge Strips: Same material as flooring.1. Products: As scheduled on the drawings.
- D. Filler for Coved Base: Plastic.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
 - 1. Fill all voids with approved products to create a solid and continuous surface at all resilient base locations.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
 - 1. Test in accordance with Section 09 0561.
 - 2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

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3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is fully cured.
- D. Clean substrate.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Adhesive-Applied Installation:
 - 1. Spread only enough adhesive to permit installation of materials before initial set.
 - 2. Fit joints and butt seams tightly.
 - 3. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
- F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - SHEET FLOORING

- A. Lay flooring with joints and seams in accordance with seaming plan. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.
- B. Cut sheet at seams in accordance with manufacturer's instructions.
- C. Coved Base (Where Indicated): Install as detailed on drawings, using coved base filler as backing at floor to wall junction. Extend sheet flooring vertically to height indicated, and cover top edge with metal cap strip.

3.05 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 48 inches between joints.
- B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.
- C. Minimum 24 inches to splice from any outside corner.
- D. Install base on solid backing. Bond tightly to wall and floor surfaces.
- E. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.
- C. Where required and/or recommended seal and wax resilient flooring products in accordance with manufacturer's instructions; 2 coats minimum.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.
- B. Contractor shall furnish and install all waxing of resilient flooring where manufacturer's installation and/or maintenance instructions require it to be installed. Waxing shall be completed prior to substantial completion.

END OF SECTION

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PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile flooring, fully adhered.
- B. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 09 0561 - Common Work Results for Flooring Preparation: Testing of concrete slabs, removal of existing floor coverings and coating (where applicable), cleaning, and preparation.

1.03 REFERENCE STANDARDS

A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.

1.04 SUBMITTALS

- A. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- B. Verification Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- C. Manufacturer's Installation Instructions: Indicate special procedures.
- D. Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 1. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum five years documented experience.
- B. Installer Qualifications: Company specializing in installing carpet tile with minimum five years documented experience and approved by carpet tile manufacturer.

1.06 FIELD CONDITIONS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.
- B. Maintain minimum 70 degrees F ambient temperature 24 hours prior to, during and 24 hours after installation.
- C. Ventilate installation area during installation and for 72 hours after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Carpet Tile Products:
 - 1. Products as scheduled on the drawings.
 - 2. Other Approved Manufacturers:
 - a. As listed below; However, submit samples during the bidding process for Architect's review and approval.
 - b. Samples must be submitted a minimum of 12 days before bids are due to allow Architect adequate time to compare product samples before approving equivalent products.
 - c. Products that are not submitted for approval will not be accepted at any point during the shop drawing process or construction.
- B. Other Approved Carpet Tile Manufacturers:
 - 1. Substitutions: May be substituted with a designer pre-approved equivalent.

2.02 ACCESSORIES

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- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Moldings and Edge Strips: As scheduled on the drawings.
- C. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
 - 1. Test in accordance with Section 09 0561.
 - 2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.
- D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.

3.03 INSTALLATION

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in pattern indicated on the drawings. If no pattern is indicated contract the architect for additional direction.
- F. Fully adhere carpet tile to substrate.
- G. Trim carpet tile neatly at walls and around interruptions.
- H. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

- A. Provide training classes for owner's cleaning staff by flooring manufacturer's representative prior to substantial completion. Invite Architect's representative to attended class.
 - 1. Contractor's representative to attend class to insure initial cleaning meets all requirement of products installed under this section.
- B. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- C. Clean and vacuum carpet surfaces.

SECTION 09 9123 INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
 - 2. Exposed surfaces of primed and unprimed metal items in finished areas unless specifically indicated to not be painted.
 - 3. Mechanical and Electrical:
 - a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, electrical equipment, and pipes, unless otherwise indicated.
 - b. In finished areas, paint shop-primed items.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factoryapplied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 09 2116 - Gypsum Board Assemblies: Joint and surface treatment prior to painting.

1.03 DEFINITIONS

A. Comply with ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; Current Edition.
- B. ASTM D16 Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2024.
- C. MPI (APSM) Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- D. SSPC-SP 1 Solvent Cleaning; 2015, with Editorial Revision (2016).

1.05 SUBMITTALS

- A. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
 - 2. MPI product number (e.g., MPI #47).
 - 3. Cross-reference to specified paint system products to be used in project; include description of each system.
 - 4. Manufacturer's installation instructions.
 - 5. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

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- B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens not required.
 - 3. Allow 15 days for approval process, after receipt of complete samples by Architect.
 - 4. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as factory finished items, have been approved.
- C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. Do not provide or leave extra paint materials for the Owner.
 - 2. Do provide product info, color names, and installation locations for all products and colors. Information shall be included in the Operation and Maintenance Manual.

1.06 QUALITY ASSURANCE

A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum five years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

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

1.08 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Provide lighting level of 80 fc measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
 - 1. If a single manufacturer cannot provide specified products; minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
- B. Paints:
 - 1. Base Manufacturer: Sherwin Williams: www.sherwin-williams.com.
 - 2. Other Manufacturers: Approved products shall meet performance and physical characteristics of base manufacturer (basis of design) product including published ratio of solids by volume, plus or minus two percent.
- C. Other Acceptable Manufacturers: Submit product information for each line of paint for Architect's approval. Substitutions of Base Manufacturer's products may not be accepted during the shop drawing process.
 - 1. Behr Paint Company: www.behr.com/#sle.
 - 2. Benjamin Moore & Co: www.benjaminmoore.com.
 - 3. Carboline: www.carboline.com.
 - 4. Diamond Vogel Paints: www.diamondvogel.com/#sle.
 - 5. Hallman Lindsay Paint of Wisconsin: www.hallmanlindsay.com.
 - 6. IdeaPaint: www.ideapaint.com.
 - 7. ICP Group: www.icpgroup.com.
 - 8. PPG Paints: www.ppgpaints.com/#sle.
 - 9. Pratt & Lambert Paints: www.prattandlambert.com/#sle.

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- 10. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
- 11. Tnemec: www.tnemec.com.
- 12. Valspar Corporation: www.valsparpaint.com/#sle.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
 - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - a. Spayed finish; is preferred on all metal surfaces; is required on the following surfaces:
 - 1) Metal doors and frames; prior to hardware installation.
 - 2) Metal door frames for wood doors; prior to hardware installation.
 - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 3. Provide commercial grade paint systems by approved paint manufacturer for substrates not specifically covered under paint systems.
 - a. Consult with Architect/Engineer/Designer for approval of additional products and systems. Provide quantifiable product information.
 - 4. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Volatile Organic Compound (VOC) Content:
 - 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
- D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
- E. Colors: As indicated on drawings.
 - 1. Where indicated or scheduled colors do not match the paint product lines indicated below it is anticipated that colors will be color matched; product lines below are intended to set a level of standard for the product lines used for each application.
 - 2. Locations Not Indicated: Selection to be made by Architect after award of contract.
 - 3. Extend colors to surface edges; colors may change at any edge as directed by Architect.
 - 4. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling under which they are mounted.
- F. Coats: The number of coats specified, are based on manufacturer's recommendations. Provide for additional coats, as necessary, for complete coverage and true color. Additional coats due to a lack of coverage shall be provided at no additional cost to the Owner. No exceptions.
- G. Coverage: Do not stretch products beyond their recommended coverage rate nor install fewer coats than specified regardless of appearance after previous coats are applied. Thin product application may show surface imperfections or inconsistencies that would otherwise not be visible. Additional coats due to a lack of proper coverage shall be provided at no additional cost to the Owner. No exceptions.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint Product: Pro Industrial Pre-Catalyzed Waterbased Epoxy (Single-Component)

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- 1. Preparation: Clean soiled surface and test adhesion. Remove loose paint. Clean in accordance with manufacturer's instructions prior to priming and painting.
- 2. Primer: Prime and/or touch up as per Manufacturers recommended Specifications in accordance with specified Product.
- 3. Number of Paint Coats Over Primer: Two.
- 4. Types of Substrates:
 - a. Steel.
 - b. Masonry.
- 5. Sheen: As scheduled on the drawings.
- 6. Location Types:
 - a. Hollow metal frames.
 - b. Steel lintels and structural steel unless noted otherwise.
 - c. Concrete/masonry walls unless noted otherwise.
 - d. Other metals unless noted otherwise.

B. Paint Product: ProMar 200 Zero VOC Interior Latex

- 1. Primer: One coat primer sealer in all locations; primer shall be installed under paint products even if product is considered self-priming.
- 2. Number of Paint Coats Over Primer: Two.
- 3. Types of Substrates:
- a. Gypsum board.
- 4. Sheen: As scheduled on the drawings.
- 5. Locations Types:
 - a. Walls unless noted otherwise.
 - b. Ceilings unless noted otherwise.
 - c. Soffits unless noted otherwise.
 - d. Bulkheads unless noted otherwise.

2.04 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been adequately prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask and/or protect all surfaces, appurtenances not affiliated with coating process, including but not limited to electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

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- F. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- E. Painting shall be free from paint runs; no exceptions.
- F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

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

3.05 PROTECTION

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

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SECTION 10 2226 OPERABLE PARTITIONS ACOUSTI-SEAL® ENCORE™

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Manually operated, paired panel operable partitions with vinyl and markerboard finish.
- B. Related Sections include the following:
 - 1. Division 03 Sections for concrete tolerances required.
 - 2. Division 05 Sections for primary structural support, including pre-punching of support members by structural steel supplier per operable partition supplier's template.
 - 3. Division 06 Sections for wood framing and supports, and all blocking at head and jambs as required.
 - 4. Division 09 Sections for wall and ceiling framing at head and jambs.

1.03 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is certified in writing by the operable partition manufacturer, as qualified to install the manufacturer's partition systems for work similar in material, design, and extent to that indicated for this Project.
- B. Acoustical Performance: Test operable partitions in an independent acoustical laboratory in accordance with ASTM E90 test procedure and classified in accordance with ASTM E413 to attain no less than the STC rating specified. Provide a complete and unedited written test report by the testing laboratory upon request.
- C. Preparation of the opening shall conform to the criteria set forth per ASTM E557 Standard Practice for Architectural Application and Installation of Operable Partitions.
- D. The operable wall must be manufactured by a certified ISO-9001-2015 company or an equivalent quality control system.
- E. Indoor Air Quality: Operable partition, movable wall manufacturer's non-wood products must meet the SCS Indoor Advantage[™] Gold Certification or equivalent. This approval guarantees conformance to indoor air concentrations meeting Indoor Advantage Gold Indoor Air Quality Certified to SCS-105 v4.2-2023 Conforms to ANSI/BIFMA M7.1 and X7.1 and the CDPH/EHLB Standard Method (CA 01350) v1.2-2017 conducted in an independent third-party air quality testing laboratory.

1.04 REFERENCE STANDARDS

- A. ASTM International
 - 1. ASTM E557 Standard Practice for Architectural Application and Installation of Operable Partitions.
 - 2. ASTM E90 Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
 - 3. ASTM E84 Surface Burning Characteristics of Building Materials.
 - 4. ASTM E413 Classification for Rating Sound Insulation
- B. Health Product Declaration Collaborative
 - 1. Health Product Declaration Open Standard v2.1
- C. International Standards Organization
 - 1. ISO 14021 Environmental Labels and Declarations Self-Declared Environmental Claims (Type II Environmental Labeling).
 - 2. ISO 14025:2011-10, Environmental Labels and Declarations Type III Environmental Declarations Principles and Procedures.
 - 3. ISO 14040:2009-11, Environmental Management Life Cycle Assessment Principles and Framework.

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- 4. ISO 14044:2006-10, Environmental Management Life Cycle Assessment Requirements and Guidelines.
- 5. ISO 21930 Sustainability in Buildings and Civil Engineering Works Core Rules for Environmental Product Declarations of Construction Products and Services.
- D. Other Standards
 - 1. ADA Americans with Disabilities Act

1.05 SUBMITTALS

- A. Product Data: Material descriptions, construction details, finishes, installation details, and operating instructions for each type of operable partition, component, and accessory specified.
- B. Shop Drawings: Show location and extent of operable partitions. Include plans, elevations, sections, details, attachments to other construction, and accessories. Indicate dimensions, weights, conditions at openings, and at storage areas, and required installation, storage, and operating clearances. Indicate location and installation requirements for hardware and track, including floor tolerances required and direction of travel. Indicate blocking to be provided by others.
- C. Setting Drawings: Show imbedded items and cutouts required in other work, including support beam punching template.
- D. Samples: Color samples demonstrating full range of finishes available by architect. Verification samples will be available in same thickness and material indicated for the work.
- E. Reports: Provide a complete and unedited written sound test report indicating glass thickness and spacing in test specimen matches product as submitted.
- F. Create spaces that are healthy for occupants.
 - 1. Furnish products and materials with Health Product Declaration (HPD), Manufacturer Inventory, or other material health disclosure documentation. Products without an HPD or other disclosure documentation are not acceptable.
- G. Furnish materials that generate the least amount of pollution.
 - 1. Furnish products and materials that have third party verified environmental product declarations (EPD's). Consider products and materials that have optimized environmental performance (reduced life cycle impacts). Products without an EPD or other disclosure documentation are not acceptable.
- H. Buy American: Folding door to be manufactured in the United States in compliance with applicable U.S. Federal Trade Commission (FTC) and U.S. Customs Service and Border Protections regulations and be labeled "Made in America".

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Clearly mark packages and panels with numbering systems used on Shop Drawings. Do not use permanent markings on panels.
- B. Protect panels during delivery, storage, and handling to comply with manufacturer's direction and as required to prevent damage.

1.07 WARRANTY

- A. Provide written warranty by manufacturer of operable partitions agreeing to repair or replace any components with manufacturing defects.
- B. Partition Warranty period: Three (3) years.
- C. Suspension System Warranty:
 - 1. Five (5) years.

PART 2 PRODUCTS

2.01 MANUFACTURERS, PRODUCTS, AND OPERATIONS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 1. Modernfold, Inc.
- B. Doors to be manufactured in the U.S.A.
- C. Products: Subject to compliance with the requirements, provide the following product:

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1. Acousti-Seal Encore - Paired Panel: Manually operated paired panel operable partition.

2.02 OPERATION

- A. Acousti-Seal Encore Paired Panel: Series of paired flat panels hinged together in pairs, manually operated, top supported with operable floor seals and automatic top seals.
- B. Final Closure:
 - 1. Horizontally expanding panel edge with removable crank

2.03 PANEL CONSTRUCTION

- A. Nominal 4.25-inch (108mm) thick panels in manufacturer's standard 51-inch (1295mm) widths. All panel horizontal and vertical framing members fabricated from minimum 16-gage formed steel with overlapped and welded corners for rigidity. Top channel is reinforced to support suspension system components. Frame is designed so that full vertical edges of panels are of formed steel and provide concealed protection of the edges of the panel skin.
- B. Panel skin shall be:
 - 1. Roll-formed steel wrapping around panel edge. Panel skins shall be lock formed and welded directly to the frame for unitized construction. Acoustical ratings of panels with this construction minimum:
 - a. 54 STC
- C. Hinges for Panels, Closure Panels, Pass Doors, and Pocket Doors shall be:
 - 1. Full leaf butt hinges, attached directly to the panel frame with welded hinge anchor plates within panel to further support hinge mounting to frame. Lifetime warranty on hinges. Hinges mounted into panel edge or vertical astragal are not acceptable.
- D. Panel Trim: No vertical or horizontal trim required or allowed on edges of panels; minimal groove appearance at panel joints.
- E. Panel Weights:
 - 1. 54 STC 9.5 lbs./square foot

2.04 PANEL FINISH

- A. Panel finish shall be factory applied, Class "A" rated material. Finish shall be:
 - 1. Reinforced vinyl with woven backing weighing not less than 20 ounces (567 grams) per lineal yard.
 - 2. Full panels shall be magnetic dry erase markerboards on each face from 36 inches above finished floor to 84 inches above finished floor. Include manufacturer's standard magnetic marker tray, two for each side of partition.
- B. Panel Trim: Exposed panel trim of one consistent color:
 - 1. To Be Advised

2.05 SOUND SEALS

- A. Vertical Interlocking Sound Seals between panels: Aluminum astragals, with tongue and groove configuration in each panel edge. Rigid plastic astragals are not acceptable.
- B. Horizontal Top Seals shall be Modernfold SureSet[™] automatic operable top seals, manually operated top seals not required or permitted.
- C. Horizontal bottom floor seals shall be Modernfold Sureset[™] bottom seal:
 - Modernfold SM2 Bottom Seal. Manually activated seals providing nominal 2" (51mm) operating clearance with an operating range of + 0.50" (13mm) to -1.50" (38mm). Seal shall be operable from panel edge or face. Extended seal shall exert nominal 120 pounds (54 kg) downward force to the floor throughout operating range.

2.06 SUSPENSION SYSTEM

- A. #17 Suspension System
 - 1. Suspension Tracks: Minimum 11-gauge, 0.12-inch (3.04mm) roll-formed steel track, suitable for either direct mounting to a wood header or supported by adjustable steel hanger brackets, supporting the load-bearing surface of the track, connected to structural support by pairs of 0.38-inch (10mm) diameter threaded rods. Aluminum track is not acceptable.
 - a. Exposed track soffit: Steel, integral to track, and pre-painted off-white.

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2. Carriers: One all-steel trolley with steel tired ball bearing wheels per panel (except hinged panels). Non-steel tires are not acceptable.

2.07 OPTIONS

- A. Available accessories/options:
 - 1. Pocket Doors: Acousti-Seal Pocket Doors by Modernfold, Inc., with same construction, finish, and appearance as the adjacent panels.
 - a. Pocket Door configuration shall be manually operated: Type III double doors hinged to a jamb on each side and closing in the center. One of the door panels is equipped with a smaller hinged panel that folds back when the operable partition is extended into the pocket.

PART 3 EXECUTION

3.01 INSTALLATION

- A. General: Comply with ASTM E557, operable partition manufacturer's written installation instructions, Drawings and approved Shop Drawings.
- B. Install operable partitions and accessories after other finishing operations, including painting have been completed.
- C. Match operable partitions by installing panels from marked packages in numbered sequence indicated on Shop Drawings.
- D. Broken, cracked, chipped, deformed or unmatched panels are not acceptable.

3.02 CLEANING AND PROTECTION

- A. Clean partition surfaces upon completing installation of operable partitions to remove dust, dirt, adhesives, and other foreign materials according to manufacturer's written instructions.
- B. Provide final protection and maintain conditions in a manner acceptable to the manufacturer and Installer that ensure operable partitions are without damage or deterioration at time of Substantial Completion.

3.03 ADJUSTING

A. Adjust operable partitions to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Lubricate hardware and other moving parts.

3.04 EXAMINATION

A. Examine flooring, structural support, and opening, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of operable partitions. Proceed with installation only after unsatisfactory conditions have been corrected.

3.05 **DEMONSTRATION**

- A. Demonstrate proper operation and maintenance procedures to Owner's representative.
- B. Provide Operation and Maintenance Manual to Owner's representative.

SECTION 10 2800 TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial toilet accessories.

1.02 REFERENCE STANDARDS

- A. ADA Standards 2010 ADA Standards for Accessible Design; 2010.
- B. ASTM B456 Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium; 2017 (Reapproved 2022).
- C. ASTM C1036 Standard Specification for Flat Glass; 2021.
- D. ASTM C1503 Standard Specification for Silvered Flat Glass Mirror; 2024.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.04 SUBMITTALS

A. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Products listed are made by Bobrick: www.bobrick.com.
- B. Commercial Toilet, Shower, and Bath Accessories:
 - 1. AJW Architectural Products: www.ajw.com.
 - 2. ASI American Specialties, Inc: www.americanspecialties.com.
 - 3. Bradley Corporation: www.bradleycorp.com.
 - 4. Bobrick Washroom Equipment, Inc: www.bobrick.com.
 - 5. Gamco USA: www.gamcousa.com.
 - 6. Basco Incorporated: www.bascoinc.com.
 - 7. Substitutions: Manufacturers listed above may be substituted with a designer preapproved equivalent.
- C. Provide products of each category type by single manufacturer.

2.02 MATERIALS

- A. Accessories General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
- B. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

2.03 FINISHES

- A. Stainless Steel: Satin finish, unless otherwise noted.
- B. Chrome/Nickel Plating: ASTM B456, SC 2, polished finish, unless otherwise noted.

2.04 COMMERCIAL TOILET ACCESSORIES

- A. Provided by Owner and Installed by Contractor:
 - 1. Toilet Paper Dispenser.
 - 2. Paper Towel Dispenser.
 - 3. Soap Dispenser.
 - 4. And as scheduled on the drawings.
- B. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
 - 1. Size: 24 by 36 inches, and as indicated on the drawings.
 - 2. Frame: 0.05 inchangle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.

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- 3. Products:
 - a. B-290 2436 manufactured by Bobrick (welded-frame mirror).
 - b. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.

2.05 OTHER MISCELLANEOUS ROOM ACCESSORIES

- A. Door Mounted Coat Hook:
 - 1. Product: B-6717 manufactured by Bobrick.
 - 2. Location: Provide one hook at single use restroom doors.
 - 3. Substitutions: Products listed above may be substituted with a designer pre-approved equivalent.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. Verify that field measurements are as indicated on drawings.

3.02 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

3.03 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

SECTION 10 4400 FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire extinguishers.
 - 1. Type A:B:C Dry Chemical.
- B. Accessories.

1.02 REFERENCE STANDARDS

- A. FM (AG) FM Approval Guide; Current Edition.
- B. NFPA 10 Standard for Portable Fire Extinguishers; 2022.
- C. UL (DIR) Online Certifications Directory; Current Edition.

1.03 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide extinguisher operational features, extinguisher ratings and classifications, color and finish, anchorage details, and installation instructions.
- C. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.
- D. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.04 FIELD CONDITIONS

A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Extinguishers:
 - 1. Activar Construction Products Group, Inc. JL Industries; Cosmic Extinguisher Multipurpose Chemical: www.activarcpg.com/#sle.
 - 2. Ansul, a Tyco Business; Sentry: www.ansul.com/#sle.
 - 3. Nystrom, Inc; ABC Dry Chemical: www.nystrom.com/#sle.
 - 4. Potter-Roemer; 3000 Series: www.potterroemer.com/#sle.
 - 5. Larsen's Manufacturing Co; Multi-Purpose Dry Chemical Extinguishers: www.larsensmfg.com.
 - 6. Substitutions: See Section 01 6000 Product Requirements.

2.02 FIRE EXTINGUISHERS

- A. Fire Extinguishers General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
 - 1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.
- B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
 - 1. Class: A:B:C type.
 - 2. Sizes by Location Type:
 - a. For office type areas; 4A:80BC: 10 pound; travel 75 foot max.
 - b. For garage/shop/gym type areas; 20A:120BC: 20 pound; travel 50 foot max.
 - 3. Finish: Baked polyester powder coat red color.
 - 4. Temperature range: Minus 40 degrees F to 120 degrees F.

2.03 ACCESSORIES

- A. Extinguisher Bracket and Strap: Steel, with powder-coat paint, sized to fit extinguisher; finish to match extinguisher. J-Hooks are not acceptable, no exceptions.
- B. Non-Cabinet Signage: Fire Extinguisher, 3-way; size and mounting in accordance with applicable codes.

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PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Secure rigidly in place.
- C. Place extinguishers and accessories on wall brackets.

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for architectural cabinet work.

1.02 RELATED REQUIREMENTS

A. Section 06 4100 - Architectural Wood Casework.

1.03 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) North American Architectural Woodwork Standards; 2021, with Errata.
- C. NEMA LD 3 High-Pressure Decorative Laminates; 2005.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Specimen warranty.
- B. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
 - 1. Indicate layout of countertop supports brackets at all locations. Include attachment details to walls and counters. Final bracket layout shall be subject to Architect approval.
 - 2. For bracket layout unsupported spans of countertops shall not exceed 48 inches. Wall hung or cantilever spans shall resist a 50 lbs per square foot load and not deflect in excess of 1/4 inch in any span or portion thereof.
- C. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

- A. Plastic Laminate Countertops: High-pressure decorative laminate (HPDL) sheet bonded to substrate.
 - 1. Laminate Sheet: NEMA LD 3, Grade HGS, 0.048 inch nominal thickness.
 - a. Manufacturers:
 - 1) Arborite: www.arborite.com/#sle.
 - 2) Formica Corporation: www.formica.com/#sle.
 - 3) Lamin-Art, Inc: www.laminart.com/#sle.
 - 4) Panolam Industries International, Inc: www.panolam.com/#sle.
 - 5) Wilsonart: www.wilsonart.com/#sle.

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- 6) Substitutions: Manufacturers listed above may be substituted with a designer pre-approved equivalent.
- b. Finish: Matte or suede, gloss rating of 5 to 20.
- 2. Exposed Edge Treatment: Square, substrate built up to minimum 1-1/4 inch thick; as scheduled on the drawings.
- 3. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 Countertops, Custom Grade.

2.02 MATERIALS

- A. Counter Support Brackets:
 - 1. Counter support brackets unless noted otherwise shall be 1/8" steel, reversible brackets as manufactured by A&M Hardware, Inc., 1165 Strickler Road, Mount Joy, PA 17552. 888-647-0200. www.aandmhardware.com.
 - 2. Sizes shall be selected from the manufacturer's standards:
 - a. 24"x29" (Paint/Primer Finish Only)
 - b. 24"x24" (Paint/Primer Finish Only)
 - c. 18"x24" (Available in S.S.)
 - d. 15"x21" (Available in S.S.)
 - e. 12"x18" (Paint/Primer Finish Only)
 - f. 8"x12" (Available in S.S.)
 - g. 5"x8" (Paint/Primer Finish Only)
 - Brackets finish shall be standard texture powder coat in black, white, gray or almond.
 a. To be selected by Architect.
 - 4. Provide 8" Black Oak Park Bracket by Knape & Vogt Mfg Co Model 200OP BLK 8 at all locations indicted on the drawings.
 - 5. Support counters at each end and in the center at a minimum; counter fabricated to determine final bracket quantity, spacing, and locations.
 - 6. Other equivalent brackets are acceptable.
- B. Concealed Counter Support Brackets:
 - 1. Counter Support Brackets: Provide Concealed Brackets by A&M Hardware, Inc., 1165 Strickler Road, Mount Joy, PA 17552. 888-647-0200. www.aandmhardware.com or equivalent.
 - 2. Federal Brace: www.federalbrace.com or equivalent.
 - 3. Bracket Length: Provide maximum allowed length at each location; brackets shall include upper extension at all location where wall extends above counter.
 - 4. Bracket finish shall be standard texture powder coat in black, white, gray or almond.
 - 5. Attachment Hardware: Manufacturers standard.
 - 6. Other equivalent brackets are acceptable.
- C. Counter Support Brackets with Skirt/Apron Support:
 - 1. ADA Vanity Bracket by A&M Hardware, Inc, or equivalent.
 - 2. Stone Pro ADA Compliant Countertop Support #3743 by Braxton-Bragg, Rakks EHV-Vanity Supports, or equivalent.
 - Federal Brace: www.federalbrace.com or equivalent.
 a. Other equivalent brackets are acceptable.
 - 4. Fasteners: Provide Flat head 1/4" 20 thread with 4 mm hex drive connector bolts in chrome, black, or oil rubbed bronze. Color as selected by Architect.
- D. Counter Support Brackets; Flat Brackets:
 - 1. Centerline Brackets: Countertop Island Support Brackets.
 - 2. Speed Brace Stealth & Stealth HD; and Panel Clips.
- E. Steel Support Posts: Manufacturer's standard with factory finish and flush fasteners at base flange. Color and sheen as selected by the Architect from manufacturer's full range of factory applied finishes.
- F. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- G. Joint Sealant: Mildew-resistant silicone sealant, clear.

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2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 - 2. Height: 4 inches, unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
- C. Attach wood countertops using screws with minimum penetration into substrate board of 5/8 inch.
- D. Seal the exposed front underside edge of plastic laminate countertops with clear solvent based polyurethane at all locations; or wrap with plastic laminate back to face of casework below.
- E. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

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

END OF SECTION

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SECTION 26 0010 BASIC ELECTRICAL REQUIREMENTS

PART 1GENERAL

1.01 SECTION INCLUDES:

A. Basic Electrical Requirements specifically applicable to Division 26 Sections, in addition to Division 01 - General Requirements.

1.02 SCOPE OF WORK:

A. The Electrical Contract Installation shall include a complete Electrical Installation for the project. All conduit, fixtures and equipment herein specified, mentioned or shown on Drawings, shall be furnished and installed in place, connected up and ready for normal operation except for such items as are specifically mentioned to be furnished by others.

1.03 WORK INCLUDED:

- A. The Electrical Contract shall include all work under the listed Sections of the Specifications Index and all related Electrical work as shown on the Drawings for the project.
- B. A Complete table of Electrical Reference Symbols is shown on the plans.
- C. Under this Contract the Electrical Contractor shall furnish the Owner with a USB flash drive and PDF set of all pertinent systems related documents. The documents shall contain the following items:
 - 1. Shop drawings on all major equipment.
 - 2. Operating Instructions for all major equipment.
 - 3. Maintenance Instructions for all major equipment.
 - 4. Wiring diagrams for all equipment.
 - 5. Control drawings for any systems not furnished under other contracts.
- D. The Electrical Contractor is responsible for own equipment, such as cranes, lifts, etc. in order to provide a complete installation of Electrical systems.
- E. Branch feeders, branch wiring, receptacles, special outlets, switches, light fixtures, dimmers, contactors, starters, timers, etc., as shown on the plans or required for operation of the electrical system.
- F. Repair of all damage done to the premises as a result of the installation and removal of all debris or surplus material left by those engaged in the work.

1.04 SPECIFICATIONS COMPLIANCE

A. The requirements of these specifications shall be complied with in every respect. Therefore, it shall be absolutely mandatory that the job foreman, all lead electricians, subcontractors and their foreman have completely studied these specifications, be completely knowledgeable as to their entire contents, and maintain a copy at the job-site. Failure to comply with this requirement will be reason to presume the electrician or subcontractor is not in responsible charge of their work due to ignorance of job requirements, and will be reason for the Owner to require dismissal and replacement with approved personnel. Every foreman and lead mechanic shall be provided with a complete copy of this specification.

1.05 INCONSISTENCIES

A. If there is an inconsistency in the quality and/or quantity of Work required by the Contract Documents, either the greater quality and/or quantity of Work indicated shall be provided in accordance with the Engineer/Architect's interpretation without change in the contract sum.

1.06 CODES, FEES AND LATERAL COSTS:

- A. The Electrical Installation shall meet all applicable local, state and federal codes and standards. All permits necessary for a complete electrical installation shall be paid for by this Contractor.
- B. Except in those municipalities which provide state-approved electrical inspection, all installation of electrical equipment wiring shall be inspected by the State Board of Electricity. Allowance shall be made in the bid and contract for the cost of such inspection.
- C. Fees for such inspection will be charged in accordance with the rules and regulations of the State Board of Electricity. Evidence of payment of fees shall be provided by the Contractor with

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the Request for Payment.

1.07 REGULATORY REQUIREMENTS:

- A. Conform to requirements of ANSI/NFPA 70.
- B. Furnish products listed by Underwriters Laboratories, Inc. or other testing firm acceptable to authority having jurisdiction.

1.08 SUBMITTALS:

- A. Submit under provisions of Division 01.
- B. Submit shop drawings and product data of related systems, products, and accessories.
- C. Mark dimensions and values in units to match those specified.

1.09 PROJECT/SITE CONDITIONS:

A. Install Work in locations shown on Drawings, unless prevented by Project conditions.

1.10 SEQUENCING AND SCHEDULING:

A. Construct Work in sequence under provisions of Division 1.

1.11 PRE-CONSTRUCTION COORDINATION AND VERIFICATION:

- A. This Contractor shall coordinate their work with other Contractors on this job. Any conflict which cannot be resolved shall be settled by the Architect/Engineer.
- B. Field verification of scale dimensions on plans is directed since actual locations, distances and levels will be governed by actual field conditions.
- C. The Contractors shall check architectural, structural, plumbing, heating, ventilating and electrical plans to avert possible installation conflicts. Should drastic changes from original plans be necessary to resolve such conflicts this Contractor shall notify the Architect/Engineer and secure written approval and agreement on necessary adjustments before the installation is started.
- D. Discrepancies shown on different plans or between plans and actual field conditions or between plans and specifications shall promptly be brought to the attention of the Architect/Engineer for a decision.
- E. The Contractor shall consider and review the complete set of documents, etc., Architectural, Structural, Mechanical, Electrical, etc., (Drawings and Specifications) as a complete set. They will be responsible for any and all electrical work shown or stated (to be by the Contractor), to include this work in their bid and install such items even though they are not specifically shown or stated on the Electrical section of the plans and specifications.
- F. The drawings are indicative of the work to be installed, but do not show all bends, fittings, boxes and specialties required to complete the installation.
- G. All conduits, wires, outlets boxes, switches, receptacles, devices and fixtures shall be included in the work.
- H. Where it is stated that the Contractor shall "provide" a device or piece of equipment, it shall mean that such a device or equipments are finished and installed.

1.12 CUTTING, PATCHING, AND FIRESTOPPING:

- A. The Electrical Contractor shall set all sleeves in construction for their Work.
- B. Where cutting is required, it shall be done by the Electrical Contractor.
- C. All patching shall be done by Electrical Contractor.
- D. All conduit and outlet installations and cutting of any kind must be done with great care so as not to leave unsightly surfaces which may not be entirely concealed by plates, escutcheons, or their normal concealing construction, if such unsightly conditions occur, Electrical Contractor will be required, at their own expense, to replace the damaged construction.
- E. This Electrical Contractor shall provide and install firestopping materials per Section 07 8400 Firestopping.

1.13 SCAFFOLDING:

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A. Furnish and erect all scaffolding, ladders, etc., required in the installation of wiring, equipment and fixtures.

1.14 ADDITIONAL ELECTRICAL COSTS:

A. If the Mechanical Contractor substitutes equipment for specified units, the mechanical contractor shall be responsible for any additional electrical installation costs for this substitution whether the other equipment was listed as equal in the specification or was approved equal after the project was in the bidding process.

1.15 GUARANTEE:

A. This Contractor shall be responsible for the proper installation and working of everything in this contract and shall guarantee to remedy free of charge any defects in workmanship and materials that may appear to give or gives rise to trouble of any kind for a period of one year from date of final substantial completion.

PART 2 NOT USED

PART 3 EXECUTION

3.01 EQUIPMENT CONNECTIONS:

A. Provide necessary power wiring for equipment furnished by others. Verify requirements with the Contractors responsible to supply each piece of equipment. Provide heavy duty disconnect switches as indicated.

3.02 AS-BUILT DRAWINGS:

- A. Contractor shall keep an accurate record of all deviations from contract drawings and specifications. Edits shall neatly and correctly enter in colored crayon any deviations on drawings affected, and shall keep drawings available for inspection. Extra set of drawings will be furnished for this purpose.
- B. At the completion of the job, and before final acceptance, the Contractor shall provide a complete set of as-built drawings. The Contractor shall show locations for all major electrical devices, including panelboards and all major runs of conduit, the circuiting of each fixture, outlet, etc., shall be shown. Certify to the accuracy of each print, by signature thereon, and deliver same to Architect.

END OF SECTION

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SECTION 26 0505 SELECTIVE DEMOLITION FOR ELECTRICAL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical demolition.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify field measurements and circuiting arrangements are as indicated.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition drawings are based on casual field observation and existing record documents.
- D. Report discrepancies to Architect before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

3.02 PREPARATION

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.

3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction.
- B. Remove abandoned wiring to source of supply.
- C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces. Use materials to match fire rating of wall.
- D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
- E. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- F. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
- G. Repair adjacent construction and finishes damaged during demolition and extension work.
- H. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.
- I. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

3.04 CLEANING AND REPAIR

- A. See Section 01 7419 Construction Waste Management and Disposal for additional requirements.
- B. Clean and repair existing materials and equipment that remain or that are to be reused.
- C. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

END OF SECTION

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SECTION 26 0519 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Single conductor building wire.
- B. Metal-clad cable.
- C. Wiring connectors.
- D. Electrical tape.
- E. Heat shrink tubing.
- F. Wire pulling lubricant.
- G. Cable ties.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 Firestopping.
- B. Section 26 0526 Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.
- C. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. ASTM B3 Standard Specification for Soft or Annealed Copper Wire; 2013 (Reapproved 2018).
- B. ASTM B8 Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft; 2023.
- C. ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes; 2010, with Editorial Revision (2020).
- D. ASTM B787/B787M Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation; 2004 (Reapproved 2020).
- E. ASTM D3005 Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape; 2017.
- F. ASTM D4388 Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes; 2020.
- G. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- H. NEMA WC 70 Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy; 2021.
- I. NETA ATS Standard For Acceptance Testing Specifications For Electrical Power Equipment And Systems; 2021.
- J. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- K. UL 44 Thermoset-Insulated Wires and Cables; Current Edition, Including All Revisions.
- L. UL 83 Thermoplastic-Insulated Wires and Cables; Current Edition, Including All Revisions.
- M. UL 267 Outline of Investigation for Wire-Pulling Compounds; Current Edition, Including All Revisions.
- N. UL 486A-486B Wire Connectors; Current Edition, Including All Revisions.
- O. UL 486C Splicing Wire Connectors; Current Edition, Including All Revisions.
- P. UL 486D Sealed Wire Connector Systems; Current Edition, Including All Revisions.
- Q. UL 510 Polyvinyl Chloride, Polyethylene, and Rubber Insulating Tape; Current Edition, Including All Revisions.
- R. UL 1569 Metal-Clad Cables; Current Edition, Including All Revisions.

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1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
 - 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

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

1.06 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F, unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Architect and obtain direction before proceeding with work.

PART 2 PRODUCTS

2.01 CONDUCTOR AND CABLE APPLICATIONS

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Underground feeder and branch-circuit cable is not permitted.
- E. Service entrance cable is not permitted.
- F. Armored cable is not permitted.
- G. Metal-clad cable is permitted only as follows:
 - 1. Where not otherwise restricted, may be used:
 - a. Where concealed above accessible ceilings for final connections from junction boxes to luminaires.
 - 1) Maximum Length: 6 feet.
 - 2. In addition to other applicable restrictions, may not be used:
 - a. Where exposed to damage.
 - b. For damp, wet, or corrosive locations, unless provided with a PVC jacket listed as suitable for those locations.
 - c. For isolated ground circuits,

2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating system.
- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.

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- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductor Material:
 - 1. Provide copper conductors only. Aluminum conductors are not acceptable for this project. Conductor sizes indicated are based on copper.
 - Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
 - 3. Tinned Copper Conductors: Comply with ASTM B33.
- H. Minimum Conductor Size:
 - 1. Branch Circuits: 12 AWG.
 - a. Exceptions:
 - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
 - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
 - 3) 20 A, 277 V circuits longer than 150 feet: 10 AWG, for voltage drop.
 - 2. Control Circuits: 14 AWG.
- I. Conductor Color Coding:
 - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
 - 2. Color Coding Method: Integrally colored insulation.
 - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
 - 3. Color Code:
 - a. 480Y/277 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Brown.
 - 2) Phase B: Orange.
 - 3) Phase C: Yellow.
 - 4) Neutral/Grounded: Gray.
 - b. 208Y/120 V, 3 Phase, 4 Wire System:
 - 1) Phase A: Black.
 - 2) Phase B: Red.
 - 3) Phase C: Blue.
 - 4) Neutral/Grounded: White.
 - c. Equipment Ground, All Systems: Green.
 - d. For modifications or additions to existing wiring systems, comply with existing color code when existing code complies with NFPA 70 and is approved by the authority having jurisdiction.

2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Description: Single conductor insulated wire.
- B. Conductor Stranding:
 - 1. Feeders and Branch Circuits:
 - a. Size 10 AWG and Smaller: Stranded.
 - b. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation:
 - 1. Copper Building Wire: Type THHN/THWN-2, except as indicated below.
 - a. Size 4 AWG and Larger: Type XHHW-2.
 - b. Installed Underground: Type XHHW-2.

2.04 METAL-CLAD CABLE

- A. Description: NFPA 70, Type MC cable listed and labeled as complying with UL 1569, and listed for use in classified firestop systems to be used.
- B. Conductor Stranding:
 - 1. Size 10 AWG and Smaller: Solid.

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- 2. Size 8 AWG and Larger: Stranded.
- C. Insulation Voltage Rating: 600 V.
- D. Insulation: Type THHN, THHN/THWN, or THHN/THWN-2.
- E. Grounding: Full-size integral equipment grounding conductor.
- F. Armor: Steel, interlocked tape.
- G. Provide PVC jacket applied over cable armor.

2.05 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Wiring Connectors for Splices and Taps:
 - Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
 a. Push-in wire connectors are not permitted.
 - 2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors.
- C. Wiring Connectors for Terminations:
 - 1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
 - 2. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
 - 3. Provide motor pigtail connectors for connecting motor leads in order to facilitate disconnection.
 - 4. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors where connectors are required.
- D. Twist-on Insulated Spring Connectors: Rated 600 V, 221 degrees F for standard applications and 302 degrees F for high temperature applications; pre-filled with sealant and listed as complying with UL 486D for damp and wet locations.
- E. Mechanical Connectors: Provide bolted type.

2.06 ACCESSORIES

- A. Electrical Tape:
 - 1. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
 - 2. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
 - 3. Rubber Splicing Electrical Tape: Ethylene Propylene Rubber (EPR) tape, complying with ASTM D4388; minimum thickness of 30 mil; suitable for continuous temperature environment up to 194 degrees F and short-term 266 degrees F overload service.
 - 4. Electrical Filler Tape: Rubber-based insulating moldable putty, minimum thickness of 125 mil; suitable for continuous temperature environment up to 176 degrees F.
 - 5. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, allweather vinyl backing; minimum thickness of 90 mil.
- B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.
- C. Wire Pulling Lubricant:
 - 1. Listed and labeled as complying with UL 267.
 - 2. Suitable for use with conductors/cables and associated insulation/jackets to be installed.
 - 3. Suitable for use at installation temperature.
- D. Cable Ties: Material and tensile strength rating suitable for application.

PART 3 EXECUTION

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3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as indicated.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

3.03 INSTALLATION

- A. Circuiting Requirements:
 - 1. Unless dimensioned, circuit routing indicated is diagrammatic.
 - 2. When circuit destination is indicated without specific routing, determine exact routing required.
 - 3. Arrange circuiting to minimize splices.
 - 4. Include circuit lengths required to install connected devices within 10 ft of location indicated.
 - 5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and powerlimited circuits in accordance with NFPA 70.
 - 6. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is permitted, under the following conditions:
 - a. Provide no more than six current-carrying conductors in a single raceway. Dedicated neutral conductors are considered current-carrying conductors.
 - b. Increase size of conductors as required to account for ampacity derating.
 - c. Size raceways, boxes, etc. to accommodate conductors.
 - 7. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Installation in Raceway:
 - 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
 - 2. Pull all conductors and cables together into raceway at same time.
 - 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
 - 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- E. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- F. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
- G. Terminate cables using suitable fittings.
 - Metal-Clad Cable (Type MC):
 - a. Use listed fittings.
 - b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.

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1.

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- H. Install conductors with a minimum of 12 inches of slack at each outlet.
- I. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- J. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.
- K. Make wiring connections using specified wiring connectors.
 - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
 - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
 - 3. Do not remove conductor strands to facilitate insertion into connector.
 - 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminates. Do not use wire brush on plated connector surfaces.
 - 5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
- L. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
 - 1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
 - a. For taped connections, first apply adequate amount of rubber splicing electrical tape or electrical filler tape, followed by outer covering of vinyl insulating electrical tape.
 - 2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
 - a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
 - b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
 - 3. Wet Locations: Use heat shrink tubing.
- M. Insulate ends of spare conductors using vinyl insulating electrical tape.
- N. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- P. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

3.04 FIELD QUALITY CONTROL

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

END OF SECTION

SECTION 26 0526 GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
- B. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- B. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 467 Grounding and Bonding Equipment; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

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

PART 2 PRODUCTS

2.01 GROUNDING AND BONDING REQUIREMENTS

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Bonding and Equipment Grounding:
 - 1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
 - 2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
 - 3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
 - 4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

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- 5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
- 6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.

2.02 GROUNDING AND BONDING COMPONENTS

- A. General Requirements:
 - 1. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:
 - 1. Use insulated copper conductors unless otherwise indicated.
 - a. Exceptions:
 - 1) Use bare copper conductors where installed underground in direct contact with earth.
 - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- C. Connectors for Grounding and Bonding:
 - 1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
 - 2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
 - 3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as indicated.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify that final backfill and compaction has been completed before driving rod electrodes.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Make grounding and bonding connections using specified connectors.
 - 1. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
 - 2. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
 - 3. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
 - 4. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
 - 5. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- D. Identify grounding and bonding system components in accordance with Section 26 0553.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.

END OF SECTION

SECTION 26 0529 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Support and attachment requirements and components for equipment, conduit, cable, boxes, and other electrical work.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 Cast-in-Place Concrete: Concrete equipment pads.
- B. Section 26 0533.13 Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- C. Section 26 0533.16 Boxes for Electrical Systems: Additional support and attachment requirements for boxes.

1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2017.
- B. ASTM A153/A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- C. ASTM B633 Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2023.
- D. MFMA-4 Metal Framing Standards Publication; 2004.
- E. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- F. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate sizes and arrangement of supports and bases with actual equipment and components to be installed.
 - 2. Coordinate work to provide additional framing and materials required for installation.
 - 3. Coordinate compatibility of support and attachment components with mounting surfaces at installed locations.
 - 4. Coordinate arrangement of supports with ductwork, piping, equipment and other potential conflicts.
 - 5. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not install products on or provide attachment to concrete surfaces until concrete has cured; see Section 03 3000.

1.05 QUALITY ASSURANCE

A. Product Listing Organization Qualifications: Organization recognized by OSHA as Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
 - 1. Provide required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for complete installation of electrical work.
 - 2. Provide products listed, classified, and labeled as suitable for purpose intended, where applicable.
 - 3. Do not use products for applications other than as permitted by NFPA 70 and product listing.

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- 4. Steel Components: Use corrosion-resistant materials suitable for environment where installed.
 - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
 - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
 - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps and clamps suitable for conduit or cable to be supported.
 - 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
 - 2. Conduit Clamps: Bolted type unless otherwise indicated.
- C. Outlet Box Supports: Hangers and brackets suitable for boxes to be supported.
- D. Metal Channel/Strut Framing Systems:
 - 1. Description: Factory-fabricated, continuous-slot, metal channel/strut and associated fittings, accessories, and hardware required for field assembly of supports.
 - 2. Comply with MFMA-4.
 - 3. Channel Material:
 - a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
 - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
- E. Hanger Rods: Threaded, zinc-plated steel unless otherwise indicated.
 - 1. Minimum Size, Unless Otherwise Indicated or Required:
 - a. Equipment Supports: 1/2-inch diameter.
 - b. Busway Supports: 1/2-inch diameter.
 - c. Single Conduit up to 1-inch (27 mm) Trade Size: 1/4-inch diameter.
 - d. Single Conduit Larger than 1-inch (27 mm) Trade Size: 3/8-inch diameter.
 - e. Trapeze Support for Multiple Conduits: 3/8-inch diameter.
 - f. Outlet Boxes: 1/4-inch diameter.
 - g. Luminaires: 1/4-inch diameter.
- F. Anchors and Fasteners:
 - 1. Unless otherwise indicated and where not otherwise restricted, use anchor and fastener types indicated for specified applications.
 - 2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
 - 3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
 - 4. Hollow Masonry: Use toggle bolts.
 - 5. Hollow Stud Walls: Use toggle bolts.
 - 6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
 - 7. Sheet Metal: Use sheet metal screws.
 - 8. Wood: Use wood screws.
 - 9. Plastic and lead anchors are not permitted.
 - 10. Preset Concrete Inserts: Continuous metal channel/strut and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
 - a. Manufacturer: Same as manufacturer of metal channel/strut framing system.
 - b. Comply with MFMA-4.
 - c. Channel Material: Use galvanized steel.
 - 11. Post-Installed Concrete and Masonry Anchors: Evaluated and recognized by ICC Evaluation Service, LLC (ICC-ES) for compliance with applicable building code.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that mounting surfaces are ready to receive support and attachment components.
- B. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

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- B. Install hangers and supports in accordance with NECA 1.
- C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
- D. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- E. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- F. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- G. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- H. Equipment Support and Attachment:
 - 1. Use metal, fabricated supports or supports assembled from metal channel/strut to support equipment as required.
 - 2. Use metal channel/strut secured to studs to support equipment surface mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
 - 3. Use metal channel/strut to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
 - 4. Unless otherwise indicated, mount floor-mounted equipment on properly sized concrete pad 4 inches in height; see Section 03 3000.
 - 5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- I. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.
- J. Secure fasteners in accordance with manufacturer's recommended torque settings.
- K. Remove temporary supports.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.
- E. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
 - 1. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
 - 2. Obtain permission from Architect before drilling or cutting structural members.
- F. Rigidly weld support members or use hexagon-head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
- G. Install surface-mounted cabinets and panelboards with minimum of four anchors.
- H. In wet and damp locations use steel channel supports to stand cabinets and panelboards 1 inch off wall.
- I. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

END OF SECTION

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SECTION 26 0533.13 CONDUIT FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Galvanized steel rigid metal conduit (RMC).
- B. Galvanized steel intermediate metal conduit (IMC).
- C. PVC-coated galvanized steel rigid metal conduit (RMC).
- D. Flexible metal conduit (FMC).
- E. Liquidtight flexible metal conduit (LFMC).
- F. Galvanized steel electrical metallic tubing (EMT).
- G. Rigid polyvinyl chloride (PVC) conduit.
- H. Reinforced thermosetting resin conduit (RTRC).
- I. High-density polyethylene (HDPE) conduit.

1.02 RELATED REQUIREMENTS

- A. Section 03 3000 Cast-in-Place Concrete: Concrete encasement of conduits.
- B. Section 07 8400 Firestopping.
- C. Section 26 0526 Grounding and Bonding for Electrical Systems.
 1. Includes additional requirements for fittings for grounding and bonding.
- D. Section 26 0529 Hangers and Supports for Electrical Systems.
- E. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. ANSI C80.1 American National Standard for Electrical Rigid Steel Conduit (ERSC); 2020.
- B. ANSI C80.3 American National Standard for Electrical Metallic Tubing -- Steel (EMT-S); 2020.
- C. ANSI C80.6 American National Standard for Electrical Intermediate Metal Conduit; 2018.
- D. ASTM F2160 Standard Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD); 2016.
- E. ASTM F2176 Standard Specification for Mechanical Couplings Used on Polyethylene Conduit, Duct and Innerduct; 2017.
- F. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- G. NECA 101 Standard for Installing Steel Conduits (Rigid, IMC, EMT); 2020.
- H. NECA 111 Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC); 2017.
- I. NEMA FB 1 Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- J. NEMA RN 1 Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Metal Conduit and Intermediate Metal Conduit; 2018.
- K. NEMA TC 2 Electrical Polyvinyl Chloride (PVC) Conduit; 2020.
- L. NEMA TC 3 Polyvinyl Chloride (PVC) Fittings for Use with Rigid PVC Conduit and Tubing; 2021.
- M. NEMA TC 7 Solid-Wall Coilable and Straight Electrical Polyethylene Conduit; 2021.
- N. NEMA TC 14 (SERIES) Reinforced Thermosetting Resin Conduit and Fittings Series; 2015.
- O. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- P. UL 1 Flexible Metal Conduit; Current Edition, Including All Revisions.
- Q. UL 6 Electrical Rigid Metal Conduit-Steel; Current Edition, Including All Revisions.

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- R. UL 360 Liquid-Tight Flexible Metal Conduit; Current Edition, Including All Revisions.
- S. UL 514A Metallic Outlet Boxes; Current Edition, Including All Revisions.
- T. UL 514B Conduit, Tubing, and Cable Fittings; Current Edition, Including All Revisions.
- U. UL 651 Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings; Current Edition, Including All Revisions.
- V. UL 651A Schedule 40 and 80 High Density Polyethylene (HDPE) Conduit; Current Edition, Including All Revisions.
- W. UL 797 Electrical Metallic Tubing-Steel; Current Edition, Including All Revisions.
- X. UL 1242 Electrical Intermediate Metal Conduit-Steel; Current Edition, Including All Revisions.
- Y. UL 2419 Outline of Investigation for Electrically Conductive Corrosion Resistant Compounds; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate minimum sizes of conduits with actual type and quantity of conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
 - 2. Coordinate arrangement of conduits with structural members, ductwork, piping, equipment, and other potential conflicts.
 - 3. Verify exact conduit termination locations required for boxes, enclosures, and equipment.
 - 4. Notify Architect of conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
 - 1. Do not begin installation of conductors and cables until installation of conduit between termination points is complete.

1.05 QUALITY ASSURANCE

A. Product Listing Organization Qualifications: Organization recognized by OSHA as Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.

PART 2 PRODUCTS

2.01 CONDUIT APPLICATIONS

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70, manufacturer's instructions, and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use conduit types indicated for specified applications. Where more than one listed application applies, comply with most restrictive requirements. Where conduit type for particular application is not specified, use galvanized steel rigid metal conduit.
- C. Underground:
 - 1. Under Slab on Grade: Use galvanized steel rigid metal conduit, rigid PVC conduit, or high-density polyethylene (HDPE) conduit.
 - 2. Exterior, Direct-Buried: Use galvanized steel rigid metal conduit, rigid PVC conduit, or high-density polyethylene (HDPE) conduit.
 - 3. Where rigid polyvinyl chloride (PVC) conduit is provided, transition to galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or schedule 80 rigid PVC conduit where emerging from underground.
 - 4. Where rigid polyvinyl (PVC) conduit larger than 2-inch (53 mm) trade size is provided, use galvanized steel rigid metal conduit (RMC) elbows, galvanized steel intermediate metal conduit (IMC) elbows, PVC-coated galvanized steel rigid metal conduit (RMC) elbows, or concrete-encased PVC elbows for bends.
- D. Embedded Within Concrete:

- 1. Within Slab on Grade: Not permitted.
- 2. Within Slab Above Ground: Not permitted.
- 3. Within Concrete Walls Above Ground: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), PVC-coated galvanized steel rigid metal conduit (RMC), galvanized steel electrical metallic tubing (EMT), rigid PVC conduit, or reinforced thermosetting resin conduit (RTRC).
- 4. Where rigid polyvinyl (PVC) conduit is provided, transition to galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT) where emerging from concrete.
- E. Concealed Within Masonry Walls: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- F. Concealed Within Hollow Stud Walls: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- G. Concealed Above Accessible Ceilings: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- H. Interior, Damp or Wet Locations: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or aluminum rigid metal conduit.
- I. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- J. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
 - 1. Locations subject to physical damage include, but are not limited to:
 - a. Where exposed below 12 feet, except within electrical and communication rooms or closets.
 - b. Where exposed below 20 feet in warehouse areas.
- K. Exposed, Exterior, Not Subject to Severe Physical Damage: Use galvanized steel rigid metal conduit (RMC), galvanized steel intermediate metal conduit (IMC), or galvanized steel electrical metallic tubing (EMT).
- L. Concealed, Exterior, Not Embedded in Concrete or in Contact With Earth: Use galvanized steel rigid metal conduit, intermediate metal conduit (IMC), or Schedule 40 PVC.
- M. Corrosive Locations Above Ground: Use aluminum rigid metal conduit.
- N. Flexible Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit (FMC).
 - 1. Maximum Length: 6 feet.
- O. Flexible Connections to Vibrating Equipment:
 - 1. Dry Locations: Use flexible metal conduit (FMC).
 - 2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit (LFMC).
 - 3. Maximum Length: 6 feet unless otherwise indicated.

2.02 CONDUIT - GENERAL REQUIREMENTS

- A. Comply with NFPA 70.
- B. Provide conduit, fittings, supports, and accessories required for complete raceway system.
- C. Provide products listed, classified, and labeled as suitable for purpose intended.
- D. Minimum Conduit Size, Unless Otherwise Indicated:
 - 1. Branch Circuits: 3/4 inch (21 mm) trade size.
 - 2. Branch Circuit Homeruns: 3/4 inch (21 mm) trade size.
 - 3. Control Circuits: 3/4 inch (21 mm) trade size.
 - 4. Flexible Connections to Luminaires: 1/2 inch (16 mm) trade size.
 - 5. Underground, Interior: 1 inch (27 mm) trade size.

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- 6. Underground, Exterior: 1 inch (27 mm) trade size.
- E. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
 - 1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
 - 2. Nucor Tubular Products: www.nucortubular.com/#sle.
 - 3. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- C. Fittings:
 - 1. Manufacturers:
 - a. Bridgeport Fittings Inc: www.bptfittings.com/#sle.
 - b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
 - 2. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 6.
 - 3. Material: Use steel or malleable iron.
 - 4. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.04 GALVANIZED STEEL INTERMEDIATE METAL CONDUIT (IMC)

- A. Manufacturers:
 - 1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
 - 2. Nucor Tubular Products: www.nucortubular.com/#sle.
 - 3. Wheatland Tube, a division of Zekelman Industries: www.wheatland.com/#sle.
- B. Description: NFPA 70, Type IMC galvanized steel intermediate metal conduit complying with ANSI C80.6 and listed and labeled as complying with UL 1242.
- C. Fittings:
 - 1. Manufacturers:
 - a. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
 - b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
 - 2. Nonhazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B or UL 1242.
 - 3. Material: Use steel or malleable iron.
 - 4. Connectors and Couplings: Use threaded type fittings only. Threadless fittings, including set screw and compression/gland types, are not permitted.

2.05 PVC-COATED GALVANIZED STEEL RIGID METAL CONDUIT (RMC)

- A. Manufacturers:
 - 1. Robroy Industries: www.robroy.com/#sle.
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit with external polyvinyl chloride (PVC) coating complying with NEMA RN 1 and listed and labeled as complying with UL 6.
- C. Exterior Coating: Polyvinyl chloride (PVC), nominal thickness of 40 mil, 0.040 inch.
- D. PVC-Coated Boxes and Fittings:
 - 1. Manufacturer: Same as manufacturer of PVC-coated conduit to be installed.
 - 2. Nonhazardous Locations: Use boxes and fittings listed and labeled as complying with UL 514A, UL 514B, or UL 6.
 - 3. Material: Use steel or malleable iron.
 - 4. Exterior Coating: Polyvinyl chloride (PVC), minimum thickness of 40 mil, 0.040 inch.
- E. PVC-Coated Supports: Furnish with exterior coating of polyvinyl chloride (PVC), minimum thickness of 15 mil, 0.015 inch.

2.06 FLEXIBLE METAL CONDUIT (FMC)

- A. Manufacturers:
 - 1. AFC Cable Systems, a division of Atkore International: www.afcweb.com/#sle.
 - 2. Electri-Flex Company: www.electriflex.com/#sle.
 - 3. International Metal Hose: www.metalhose.com/#sle.
 - 4. Substitutions: See Section 01 6000 Product Requirements.
- B. Description: NFPA 70, Type FMC standard-wall steel flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems.
- C. Fittings:
 - 1. Manufacturers:
 - a. Bridgeport Fittings, LLC: www.bptfittings.com/#sle.
 - b. Emerson Electric Co; O-Z/Gedney: www.emerson.com/#sle.
 - 2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 3. Material: Use steel or malleable iron.

2.07 LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)

- A. Manufacturers:
 - 1. AFC Cable Systems, a division of Atkore International: www.afcweb.com/#sle.
 - 2. Electri-Flex Company: www.electriflex.com/#sle.
 - 3. International Metal Hose: www.metalhose.com/#sle.
 - 4. Substitutions: See Section 01 6000 Product Requirements.
- B. Description: NFPA 70, Type LFMC polyvinyl chloride (PVC) jacketed steel flexible metal conduit listed and labeled as complying with UL 360.
- C. Fittings:
 - 1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel or malleable iron.

2.08 GALVANIZED STEEL ELECTRICAL METALLIC TUBING (EMT)

- A. Manufacturers:
 - 1. Allied Tube & Conduit, a division of Atkore International: www.alliedeg.com/#sle.
 - 2. Wheatland Tube, a Division of Zekelman Industries: www.wheatland.com/#sle.
- B. Description: NFPA 70, Type EMT galvanized steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- C. Fittings:
 - 1. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
 - 2. Material: Use steel or malleable iron.
 - Connectors and Couplings: Use compression/gland or set-screw type.
 a. Do not use indenter type connectors and couplings.
 - 4. Embedded Within Concrete, Where Permitted: Use fittings listed as concrete-tight. Fittings that require taping to be concrete-tight are acceptable.

2.09 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT

- A. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 40 unless otherwise indicated, Schedule 80 where subject to physical damage; rated for use with conductors rated 90 degrees C.
- B. Fittings:
 - 1. Manufacturer: Same as manufacturer of conduit to be connected.
 - 2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

2.10 REINFORCED THERMOSETTING RESIN CONDUIT (RTRC)

- A. Description: NFPA 70, Type RTRC reinforced thermosetting resin conduit complying with NEMA TC 14 (SERIES).
- B. Supports: As recommended by manufacturer.
- C. Fittings: Same type and manufacturer as conduit to be connected.

2.11 HIGH-DENSITY POLYETHYLENE (HDPE) CONDUIT

- A. Description: NFPA 70, Type HDPE high-density polyethylene solid-wall conduit complying with ASTM F2160 and NEMA TC 7; list and label as complying with UL 651A; Schedule 40 unless otherwise indicated.
- B. Joining Methods: Approved by HDPE conduit manufacturer.
- C. Mechanical Fittings: Comply with ASTM F2176; list and label as complying with UL 651A.

2.12 ACCESSORIES

- A. Conduit Joint Compound: Corrosion-resistant, electrically conductive compound listed as complying with UL 2419; suitable for use with conduit to be installed.
- B. Solvent Cement for PVC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- C. Epoxy Adhesive for RTRC Conduit and Fittings: As recommended by manufacturer of conduit and fittings to be installed.
- D. Sealing Compound for Hazardous/Classified Location Sealing Fittings: Listed for use with particular fittings to be installed.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install conduit in accordance with NECA 1.
- C. Galvanized Steel Rigid Metal Conduit (RMC): Install in accordance with NECA 101.
- D. Intermediate Metal Conduit (IMC): Install in accordance with NECA 101.
- E. PVC-Coated Galvanized Steel Rigid Metal Conduit (RMC): Install using only tools approved by manufacturer.
- F. Rigid Polyvinyl Chloride (PVC) Conduit: Install in accordance with NECA 111.
- G. Conduit Routing:
 - 1. Unless dimensioned, conduit routing indicated is diagrammatic.
 - 2. When conduit destination is indicated without specific routing, determine exact routing required.
 - 3. Conceal conduits unless specifically indicated to be exposed.
 - 4. Conduits in the following areas may be exposed, unless otherwise indicated:
 - a. Electrical rooms.
 - b. Mechanical equipment rooms.
 - c. Within joists in areas with no ceiling.
 - 5. Conduits installed underground or embedded in concrete may be routed in shortest possible manner unless otherwise indicated. Route other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical.
 - 6. Arrange conduit to maintain adequate headroom, clearances, and access.
 - 7. Arrange conduit to provide no more than equivalent of four 90-degree bends between pull points.
 - 8. Route conduits above water and drain piping where possible.

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- 9. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
- 10. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
- 11. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
 - a. Heaters.
 - b. Hot water piping.
 - c. Flues.
- 12. Group parallel conduits in same area on common rack.
- H. Conduit Support:
 - 1. Secure and support conduits in accordance with NFPA 70 using suitable supports and methods approved by authorities having jurisdiction; see Section 26 0529.
 - 2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
 - 3. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
 - 4. Use conduit strap to support single surface-mounted conduit.
 - a. Use clamp back spacer with conduit strap for damp and wet locations to provide space between conduit and mounting surface.
 - 5. Use metal channel/strut with accessory conduit clamps to support multiple parallel surface-mounted conduits.
 - 6. Use conduit clamp to support single conduit from beam clamp or threaded rod.
 - 7. Use trapeze hangers assembled from threaded rods and metal channel/strut with accessory conduit clamps to support multiple parallel suspended conduits.
 - 8. Use of wire for support of conduits is not permitted.
- I. Connections and Terminations:
 - 1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
 - 2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
 - 3. Use suitable adapters where required to transition from one type of conduit to another.
 - 4. Provide drip loops for liquidtight flexible conduit connections to prevent drainage of liquid into connectors.
 - 5. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
 - 6. Provide insulating bushings, insulated throats, or listed metal fittings with smooth, rounded edges at conduit terminations to protect conductors.
 - 7. Secure joints and connections to provide mechanical strength and electrical continuity.
- J. Penetrations:
 - 1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
 - 2. Make penetrations perpendicular to surfaces unless otherwise indicated.
 - 3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
 - 4. Conceal bends for conduit risers emerging above ground.
 - 5. Install firestopping to preserve fire resistance rating of partitions and other elements.
- K. Underground Installation:
 - 1. Minimum Cover, Unless Otherwise Indicated or Required:
 - a. Underground, Exterior: 24 inches.
 - b. Under Slab on Grade: 12 inches to bottom of slab.
 - 2. Provide underground warning tape along entire conduit length for service entrance where not concrete-encased; see Section 26 0553.
- L. Telecommunications Conduit:
 - 1. Provide 1" empty conduit with proper mud ring or box stubbed up into corridor ceiling space for all voice, data, and television locations.

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- M. Concrete Encasement: Where conduits not otherwise embedded within concrete are indicated to be concrete-encased, provide minimum concrete cover of 3 inches on all sides unless otherwise indicated; see Section 03 3000.
- N. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
 - 1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
 - 2. Where calculated in accordance with NFPA 70 for rigid polyvinyl chloride (PVC) conduit installed above ground to compensate for thermal expansion and contraction.
 - 3. Where calculated in accordance with NFPA 70 for reinforced thermosetting resin conduit (RTRC) conduit installed above ground to compensate for thermal expansion and contraction.
 - 4. Where conduits are subject to earth movement by settlement or frost.
- O. Conduit Sealing:
 - 1. Use foam conduit sealant to prevent entry of moisture and gases. This includes, but is not limited to:
 - a. Where conduits enter building from outside.
 - b. Where service conduits enter building from underground distribution system.
 - c. Where conduits enter building from underground.
 - d. Where conduits may transport moisture to contact live parts.
 - 2. Where conduits cross barriers between areas of potential substantial temperature differential, use foam conduit sealant at accessible point near penetration to prevent condensation. This includes, but is not limited to:
 - a. Where conduits pass from outdoors into conditioned interior spaces.
 - b. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
 - 3. Where conduits cross boundaries of hazardous/classified locations, provide identified/listed sealing fittings or conduit mechanical seals as approved by authorities having jurisdiction; locate as indicated or in accordance with NFPA 70.
- P. Provide grounding and bonding; see Section 26 0526.

3.03 CLEANING

A. Clean interior of conduits to remove moisture and foreign matter.

END OF SECTION

SECTION 26 0533.16 BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.

1.02 RELATED REQUIREMENTS

- A. Section 07 8400 Firestopping.
- B. Section 08 3100 Access Doors and Panels: Panels for maintaining access to concealed boxes.
- C. Section 26 0529 Hangers and Supports for Electrical Systems.
- D. Section 26 2726 Wiring Devices:
 - 1. Wall plates.

1.03 REFERENCE STANDARDS

- A. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- B. NECA 130 Standard for Installing and Maintaining Wiring Devices; 2016.
- C. NEMA 250 Enclosures for Electrical Equipment (1000 Volts Maximum); 2020.
- D. NEMA FB 1 Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable; 2014.
- E. NEMA OS 1 Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports; 2013 (Reaffirmed 2020).
- F. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. UL 50 Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.
- H. UL 50E Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.
- I. UL 508A Industrial Control Panels; Current Edition, Including All Revisions.
- J. UL 514A Metallic Outlet Boxes; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
 - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
 - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
 - 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
 - 5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
 - 6. Coordinate the work with other trades to preserve insulation integrity.
 - 7. Coordinate the work with other trades to provide walls suitable for installation of flushmounted boxes where indicated.
 - 8. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 QUALITY ASSURANCE

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

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.
- B. Products: Provide products listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.01 BOXES

- A. General Requirements:
 - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
 - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
 - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
 - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
 - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
 - 2. Use cast iron boxes or cast aluminum boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
 - 3. Use suitable concrete type boxes where flush-mounted in concrete.
 - 4. Use suitable masonry type boxes where flush-mounted in masonry walls.
 - 5. Use raised covers suitable for the type of wall construction and device configuration where required.
 - 6. Use shallow boxes where required by the type of wall construction.
 - 7. Do not use "through-wall" boxes designed for access from both sides of wall.
 - 8. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
 - 9. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
 - 10. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
 - 11. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes unless specifically indicated or permitted.
 - 12. Wall Plates: Comply with Section 26 2726.
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:
 - 1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
 - 2. NEMA 250 Environment Type, Unless Otherwise Indicated:
 - 3. Junction and Pull Boxes Larger Than 100 cubic inches:
 - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
 - 4. Finish for Painted Steel Enclosures: Manufacturer's standard grey unless otherwise indicated.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as indicated.

- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install boxes in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- E. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
- F. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
- G. Box Locations:
 - 1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 3100 as required where approved by the Architect.
 - 2. Unless dimensioned, box locations indicated are approximate.
 - 3. Locate boxes so that wall plates do not span different building finishes.
 - 4. Locate boxes so that wall plates do not cross masonry joints.
 - 5. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
 - 6. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.
- H. Box Supports:
 - 1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
 - 2. Provide independent support from building structure except for cast metal boxes (other than boxes used for fixture support) supported by threaded conduit connections in accordance with NFPA 70. Do not provide support from piping, ductwork, or other systems.
 - 3. Installation Above Suspended Ceilings: Do not provide support from ceiling grid or ceiling support system.
- I. Install boxes plumb and level.
- J. Flush-Mounted Boxes:
 - 1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
 - 2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
 - 3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.
- K. Install boxes as required to preserve insulation integrity.
- L. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- M. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- N. Close unused box openings.
- O. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed or designated for future use.
- P. Provide grounding and bonding in accordance with Section 26 0526.

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Q. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.

3.03 CLEANING

A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

END OF SECTION

SECTION 26 0533.23 SURFACE RACEWAYS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface raceway systems.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 Hangers and Supports for Electrical Systems.
- C. Section 26 0533.13 Conduit for Electrical Systems.
- D. Section 26 0533.16 Boxes for Electrical Systems.
- E. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.
- F. Section 26 2726 Wiring Devices: Receptacles.

1.03 REFERENCE STANDARDS

- A. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- B. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. UL 5 Surface Metal Raceways and Fittings; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of raceways with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate rough-in locations of outlet boxes provided under Section 26 0533.16 and conduit provided under Section 26 0533.13 as required for installation of raceways provided under this section.
 - 3. Verify minimum sizes of raceways with the actual conductors and components to be installed.
 - 4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

B. Sequencing:

- 1. Do not install raceways until final surface finishes and painting are complete.
- 2. Do not begin installation of conductors and cables until installation of raceways is complete between outlet, junction and splicing points.

1.05 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including dimensions, knockout sizes and locations, materials, fabrication details, finishes, service condition requirements, and accessories.
 - 1. Surface Raceway Systems: Include information on fill capacities for conductors and cables.

1.06 QUALITY ASSURANCE

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

PART 2 PRODUCTS

2.01 RACEWAY REQUIREMENTS

- A. Provide all components, fittings, supports, and accessories required for a complete raceway system.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Do not use raceways for applications other than as permitted by NFPA 70 and product listing.

2.02 SURFACE RACEWAY SYSTEMS

- A. Manufacturers:
 - 1. Hubbell Incorporated; _____: www.hubbell.com/#sle.
 - 2. Legrand North America, Inc; ____: www.legrand.us/#sle.
 - 3. Substitutions: See Section 01 6000 Product Requirements.
- B. Surface Metal Raceways: Listed and labeled as complying with UL 5.
- C. Surface Raceway System:
 - 1. Raceway Type: Single channel, painted steel.
 - 2. Color: White.
 - 3. Accessory Device Boxes: Suitable for the devices to be installed; color to match raceway.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that outlet boxes and conduit terminations are installed in proper locations and are properly sized in accordance with NFPA 70 to accommodate raceways.
- B. Verify that mounting surfaces are ready to receive raceways and that final surface finishes are complete, including painting.
- C. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Install raceways plumb and level.
- D. Arrange wireways and associated raceway connections to comply with NFPA 70, including but not limited to requirements for deflected conductors and wireways used as pullboxes. Increase size of wireway where necessary.
- E. Secure and support raceways in accordance with Section 26 0529 at intervals complying with NFPA 70 and manufacturer's requirements.
- F. Close unused raceway openings.
- G. Provide grounding and bonding in accordance with Section 26 0526.
- H. Identify raceways in accordance with Section 26 0553.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Inspect raceways for damage and defects.
- C. Correct wiring deficiencies and replace damaged or defective raceways.

3.04 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.05 PROTECTION

A. Protect installed raceways from subsequent construction operations.

END OF SECTION

SECTION 26 0553 IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Electrical identification requirements.
- B. Identification nameplates and labels.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 Low-Voltage Electrical Power Conductors and Cables: Color coding for power conductors and cables 600 V and less; vinyl color coding electrical tape.
- B. Section 26 2726 Wiring Devices Lutron: Device and wallplate finishes; factory pre-marked wallplates.

1.03 REFERENCE STANDARDS

- A. ANSI Z535.2 American National Standard for Environmental and Facility Safety Signs; 2023.
- B. ANSI Z535.4 American National Standard for Product Safety Signs and Labels; 2023.
- C. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

PART 2 PRODUCTS

2.01 IDENTIFICATION REQUIREMENTS

- A. Existing Work: Unless specifically excluded, identify existing elements to remain whose designations are changed as part of the new work.
- B. Identification for Equipment:
 - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
- C. Identification for Conductors and Cables:
 - 1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
- D. Identification for Boxes:
 - 1. Use identification labels or handwritten text using indelible marker to identify circuits enclosed.
 - a. For exposed boxes in public areas, use only identification labels.
- E. Identification for Devices:
 - 1. Wiring Device and Wallplate Finishes: Comply with Section 26 2726.
 - 2. Use identification label to identify fire alarm system devices.
 - 3. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.
 - 4. Use identification label to identify receptacles protected by upstream GFI protection, where permitted.

2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Labels:
 - 1. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
 - 2. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

3.02 INSTALLATION

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- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
 - 1. Boxes: Outside face of cover.
 - 2. Devices: Outside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- E. Mark all handwritten text, where permitted, to be neat and legible.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

SECTION 26 0583 WIRING CONNECTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Electrical connections to equipment.

1.02 RELATED REQUIREMENTS

- A. Section 26 0519 Low-Voltage Electrical Power Conductors and Cables.
- B. Section 26 0533.13 Conduit for Electrical Systems.
- C. Section 26 0533.16 Boxes for Electrical Systems.
- D. Section 26 2726 Wiring Devices.

1.03 REFERENCE STANDARDS

- A. NEMA WD 1 General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2020).
- B. NEMA WD 6 Wiring Devices Dimensional Specifications; 2021.
- C. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Manufacturer's Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
 - 1. Colors: Comply with NEMA WD 1.
 - 2. Cord Construction: NFPA 70, Type SO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
 - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
- B. Wiring Devices: As specified in Section 26 2726.
- C. Flexible Conduit: As specified in Section 26 0533.13.
- D. Wire and Cable: As specified in Section 26 0519.
- E. Boxes: As specified in Section 26 0533.16.

PART 3 EXECUTION

3.01 EXAMINATION

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

3.02 ELECTRICAL CONNECTIONS

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations.

- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.

SECTION 26 0923 LIGHTING CONTROL DEVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Occupancy sensors.

1.02 RELATED REQUIREMENTS

- A. Section 25 3626 Integrated Automation Lighting Relays.
- B. Section 26 0529 Hangers and Supports for Electrical Systems
- C. Section 26 0533.16 Boxes for Electrical Systems.
- D. Section 26 2726 Wiring Devices: Devices for manual control of lighting, including wall switches, wall dimmers, and fan speed controllers.

1.03 REFERENCE STANDARDS

- A. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- B. NECA 130 Standard for Installing and Maintaining Wiring Devices; 2016.
- C. NEMA 410 Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts; 2023.
- D. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.
 - 3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage installed under other sections or by others.
 - 4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
- C. Shop Drawings:
 - 1. Occupancy Sensors: Provide lighting plan indicating location, model number, and orientation of each occupancy sensor and associated system component.
 - 2. Daylighting Controls: Provide lighting plan indicating location, model number, and orientation of each photo sensor and associated system component.
- D. Field Quality Control Reports.

1.06 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND PROTECTION

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A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.08 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

PART 2 PRODUCTS

2.01 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.

2.02 OCCUPANCY SENSORS

- A. Manufacturers:
 - 1. Siemens.
- B. All Occupancy Sensors:
 - 1. Description: Factory-assembled commercial specification grade devices for indoor use capable of sensing both major motion, such as walking, and minor motion, such as small desktop level movements, according to published coverage areas, for automatic control of load indicated.
 - 2. Sensor Technology:
 - a. Passive Infrared/Ultrasonic Dual Technology Occupancy Sensors: Designed to detect occupancy using a combination of both passive infrared and ultrasonic technologies.
 - 3. Provide LED to visually indicate motion detection with separate color LEDs for each sensor type in dual technology units.
 - 4. Operation: Unless otherwise indicated, occupancy sensor to turn load on when occupant presence is detected and to turn load off when no occupant presence is detected during an adjustable turn-off delay time interval.
 - 5. Turn-Off Delay: Field adjustable, with time delay settings up to 30 minutes.
 - 6. Compatibility (Non-Dimming Sensors): Suitable for controlling incandescent lighting, lowvoltage lighting with electronic and magnetic transformers, fluorescent lighting with electronic and magnetic ballasts, and fractional motor loads, with no minimum load requirements.
 - 7. Load Rating for Line Voltage Occupancy Sensors: As required to control the load indicated on drawings.
- C. Wall Switch Occupancy Sensors:
 - 1. All Wall Switch Occupancy Sensors:
 - a. Description: Occupancy sensors designed for installation in standard wall box at standard wall switch mounting height with a field of view of 180 degrees, integrated manual control capability, and no leakage current to load in off mode.
 - b. Unless otherwise indicated or required to control the load indicated on drawings, provide line voltage units with self-contained relay.
 - c. Operation: Field selectable to operate either as occupancy sensor (automatic on/off) or as vacancy sensor (manual-on/automatic off).
 - d. Manual-Off Override Control: When used to turn off load while in automatic-on mode, unit to revert back to automatic mode after no occupant presence is detected during the delayed-off time interval.
 - e. Finish: Match finishes specified for wiring devices in Section 26 2726, unless otherwise indicated.
- D. Ceiling Mounted Occupancy Sensors:
 - 1. All Ceiling Mounted Occupancy Sensors:
 - a. Description: Low profile occupancy sensors designed for ceiling installation.
 - b. Unless otherwise indicated or required to control the load indicated on drawings, provide low voltage units, for use with separate compatible accessory power packs.

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- c. Occupancy sensor to be field selectable as either manual-on/automatic-off or automatic on/off.
- d. Finish: White unless otherwise indicated.
- E. Power Packs for Low Voltage Occupancy Sensors:
 - 1. Description: Plenum rated, self-contained low voltage class 2 transformer and relay compatible with specified low voltage occupancy sensors for switching of line voltage loads.
 - 2. Provide quantity and configuration of power and slave packs with all associated wiring and accessories as required to control the load indicated on drawings.
 - 3. Input Supply Voltage: Dual rated for 120/277 V ac.
 - 4. Load Rating: As required to control the load indicated on drawings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.
- F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.
- G. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Install lighting control devices in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of lighting control devices provided under this section.
- C. Install lighting control devices in accordance with manufacturer's instructions.
- D. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- E. Install lighting control devices plumb and level, and held securely in place.
- F. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 26 2726.
- G. Provide required supports in accordance with Section 26 0529.
- H. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- I. Occupancy Sensor Locations:
 - 1. Location Adjustments: Locations indicated are diagrammatic and only intended to indicate which rooms or areas require devices. Provide quantity and locations as required for complete coverage of respective room or area based on manufacturer's recommendations for installed devices.

J. Unless otherwise indicated, install switches on load side of power packs so that switch does not turn off power pack.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Inspect each lighting control device for damage and defects.
- C. Test occupancy sensors to verify proper operation, including time delays and ambient light thresholds where applicable. Verify optimal coverage for entire room or area. Record test results in written report to be included with submittals.
- D. Correct wiring deficiencies and replace damaged or defective lighting control devices.

3.05 ADJUSTING

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.

3.06 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.07 COMMISSIONING

A. See Section 01 9113 - General Commissioning Requirements for commissioning requirements.

3.08 CLOSEOUT ACTIVITIES

- A. See Section 01 7800 Closeout Submittals, for closeout submittals.
- B. Demonstration: Demonstrate proper operation of lighting control devices to Architect, and correct deficiencies or make adjustments as directed.

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wall switches.
- B. Wall dimmers.
- C. Receptacles.
- D. Wall plates and covers.

1.02 RELATED REQUIREMENTS

- A. Section 26 0533.16 Boxes for Electrical Systems.
- B. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. FS W-C-596 Connector, Electrical, Power, General Specification for; 2014h, with Amendments (2017).
- B. FS W-S-896 Switches, Toggle (Toggle and Lock), Flush Mounted (General Specification); 2014g, with Amendment (2017).
- C. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- D. NECA 130 Standard for Installing and Maintaining Wiring Devices; 2016.
- E. NEMA WD 1 General Color Requirements for Wiring Devices; 1999 (Reaffirmed 2020).
- F. NEMA WD 6 Wiring Devices Dimensional Specifications; 2021.
- G. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 20 General-Use Snap Switches; Current Edition, Including All Revisions.
- I. UL 498 Attachment Plugs and Receptacles; Current Edition, Including All Revisions.
- J. UL 514D Cover Plates for Flush-Mounted Wiring Devices; Current Edition, Including All Revisions.
- K. UL 943 Ground-Fault Circuit-Interrupters; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
 - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
 - 3. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
 - 4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.
- B. Sequencing:
 - 1. Do not install wiring devices until final surface finishes and painting are complete.

1.05 QUALITY ASSURANCE

- A. Comply with requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND PROTECTION

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A. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

PART 2 PRODUCTS

2.01 WIRING DEVICES - GENERAL REQUIREMENTS

- A. Provide wiring devices suitable for intended use with ratings adequate for load served.
- B. Except where explicitly permitted, substitution of combination switch-and-receptacle devices for separate switches and receptacles is not permitted.
- C. Wiring Device Applications:
 - 1. Receptacles Installed Outdoors or in Damp or Wet Locations: Use weather-resistant GFCI receptacles with weatherproof covers.
 - 2. Receptacles Installed in Dwelling Units: Use tamper-resistant receptacles.
 - 3. Provide GFCI protection for:
 - a. Receptacles installed within 6 feet of sinks.
 - 4. Single Receptacles Installed on Individual Branch Circuits: Provide receptacle ampere rating equal to branch circuit rating.
- D. Wiring Device Finishes:
 - 1. Provide wiring device finishes as described below, unless otherwise indicated.
 - 2. Wiring Devices Installed in Finished Spaces: White with white nylon wall plate.
 - 3. Wiring Devices Installed in Unfinished Spaces: White with galvanized steel wall plate.
 - 4. Wiring Devices Installed in Wet or Damp Locations: White with weatherproof cover.

2.02 WALL SWITCHES

- A. Manufacturers:
 - 1. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
 - 2. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.
- B. Wall Switches General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20and where applicable FS W-S-896; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring and screw actuated binding clamp for back wiring with separate ground terminal screw.
- C. Standard Wall Switches: Industrial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

2.03 RECEPTACLES

- A. Manufacturers:
 - 1. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
 - 2. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.
- B. Receptacles General Requirements: Self-grounding, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 498and where applicable FS W-C-596; types as indicated on the drawings.
 - 1. Wiring Provisions: Terminal screws for side wiring or screw actuated binding clamp for back wiring with separate ground terminal screw.
 - 2. NEMA configurations specified are according to NEMA WD 6.
- C. Convenience Receptacles:
 - 1. Standard Convenience Receptacles: Commercial specification grade, 20A, 125V, NEMA 5-20R; single or duplex as indicated on the drawings.
 - Tamper Resistant Convenience Receptacles: Industrial specification grade, 20A, 125V, NEMA 5-20R, listed and labeled as tamper resistant type; single or duplex as indicated on the drawings.
- D. GFCI Receptacles:
 - 1. GFCI Receptacles General Requirements: Self-testing, with feed-through protection and light to indicate ground fault tripped condition and loss of protection; listed as complying with UL 943, class A.
 - a. Provide test and reset buttons of same color as device.

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- 2. Standard GFCI Receptacles: Commercial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style.
- Weather Resistant GFCI Receptacles: Commercial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as weather resistant type complying with UL 498 Supplement SE suitable for installation in damp or wet locations.
- 4. Tamper Resistant GFCI Receptacles: Industrial specification grade, duplex, 20A, 125V, NEMA 5-20R, rectangular decorator style, listed and labeled as tamper resistant type.

2.04 WALL PLATES AND COVERS

- A. Manufacturers:
 - 1. Hubbell Incorporated: www.hubbell-wiring.com/#sle.
 - 2. Leviton Manufacturing Company, Inc: www.leviton.com/#sle.
 - 3. Lutron Electronics Company, Inc: www.lutron.com.
 - 4. Pass & Seymour, a brand of Legrand North America, Inc: www.legrand.us/#sle.
- B. Wall Plates: Comply with UL 514D.
 - 1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
 - 2. Size: Standard.
 - 3. Screws: Metal with slotted heads finished to match wall plate finish.
- C. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.
- D. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
- E. Weatherproof Receptacle Covers for Damp Locations: Gasketed, cast aluminum, with selfclosing hinged cover and corrosion-resistant screws; listed as suitable for use in wet locations with cover closed.
- F. Weatherproof Receptacle Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that openings in access floor are in proper locations.
- G. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

3.03 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship) and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.
 - 1. Mounting Heights: Unless otherwise indicated, as follows:
 - a. Wall Switches: 48 inches above finished floor to top of box.
 - b. Wall Dimmers: 48 inches above finished floor to top of box.
 - c. Fan Speed Controllers: 48 inches above finished floor to top of box.

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- d. Receptacles: 20 inches above finished floor to top of box or 6 inches above counter.
- 2. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
- 3. Where multiple receptacles or wall switches are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
- 4. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
- 5. Locate receptacles for electric drinking fountains concealed behind drinking fountain according to manufacturer's instructions.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- E. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- F. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- G. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- H. Unless otherwise indicated, GFCI receptacles may be connected to provide feed-through protection to downstream devices. Label such devices to indicate they are protected by upstream GFCI protection.
- I. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- J. Install wall switches with OFF position down.
- K. Install wall dimmers to achieve full rating specified and indicated after derating for ganging as instructed by manufacturer.
- L. Do not share neutral conductor on branch circuits utilizing wall dimmers.
- M. Install vertically mounted receptacles with grounding pole on bottom and horizontally mounted receptacles with grounding pole on left.
- N. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- O. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.
- P. Identify wiring devices in accordance with Section 26 0553.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Inspect each wiring device for damage and defects.
- C. Operate each wall switch with circuit energized to verify proper operation.
- D. Test each receptacle to verify operation and proper polarity.
- E. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- F. Correct wiring deficiencies and replace damaged or defective wiring devices.

3.05 ADJUSTING

A. Adjust devices and wall plates to be flush and level.

3.06 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

END OF SECTION

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PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Interior luminaires.
- B. Exit signs.
- C. LED replacement lamps.

1.02 RELATED REQUIREMENTS

- A. Section 26 0529 Hangers and Supports for Electrical Systems.
- B. Section 26 0533.16 Boxes for Electrical Systems.

1.03 REFERENCE STANDARDS

- A. ANSI C82.11 American National Standard for Lamp Ballasts High Frequency Fluorescent Lamp Ballasts; 2023.
- B. IES LM-63 Approved Method: IES Standard File Format for the Electronic Transfer of Photometric Data and Related Information; 2019.
- C. IES LM-79 Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products; 2019.
- D. IES LM-80 Approved Method: Measuring Maintenance of Light Output Characteristics of Solid-State Light Sources; 2021.
- E. NECA/IESNA 500 Standard for Installing Indoor Lighting Systems; 2006.
- F. NECA/IESNA 502 Standard for Installing Industrial Lighting Systems; 2006.
- G. NEMA LE 4 Recessed Luminaires, Ceiling Compatibility; 2023.
- H. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- I. NFPA 101 Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. UL 924 Emergency Lighting and Power Equipment; Current Edition, Including All Revisions.
- K. UL 1598 Luminaires; Current Edition, Including All Revisions.
- L. UL 1993 Self-Ballasted Lamps and Lamp Adapters; Current Edition, Including All Revisions.
- M. UL 8750 Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
 - 2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
 - 3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
 - 4. Notify Architect of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate dimensions and components for each fixture that is not a standard product of the manufacturer.

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- C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
 - 1. LED Luminaires:
 - a. Include estimated useful life, calculated based on IES LM-80 test data.
 - 2. Provide electronic files of photometric data certified by a National Voluntary Laboratory Accreditation Program (NVLAP) lab or independent testing agency in IES LM-63 standard format upon request.

1.06 QUALITY ASSURANCE

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

PART 2 PRODUCTS

2.01 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings. Alternate light fixture data sheet shall be submitted to the Engineer for approval prior to bid. No exceptions.

2.02 LUMINAIRES

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. Recessed Luminaires:
 - 1. Ceiling Compatibility: Comply with NEMA LE 4.
- H. LED Luminaires:
 - 1. Components: UL 8750 recognized or listed as applicable.
 - 2. Tested in accordance with IES LM-79 and IES LM-80.
 - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

2.03 EXIT SIGNS

- A. Description: Exit signs complying with NFPA 101 and applicable state and local codes, and listed and labeled as complying with UL 924.
 - 1. Number of Faces: Single- or double-face as indicated or as required for installed location.
 - 2. Directional Arrows: As indicated or as required for installed location.
- B. Self-Powered Exit Signs:
 - 1. Operation: Upon interruption of normal power source or brownout condition exceeding 20 percent voltage drop from nominal, solid-state control automatically switches connected lamps to integral battery power for minimum of 90 minutes of rated emergency illumination, and automatically recharges battery upon restoration of normal power source.
 - 2. Diagnostics: Provide power status indicator light and accessible integral test switch to manually activate emergency operation.
 - 3. Provide low-voltage disconnect to prevent battery damage from deep discharge.

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2.04 LED REPLACEMENT LAMPS

- A. Description: Light-emitting diode (LED) self-ballasted lamps listed as complying with UL 1993; intended for replacement of existing lamps of other light source types, including but not limited to, incandescent, fluorescent, and high intensity discharge (HID); suitable for installation in luminaire to be retrofitted.
- B. LED Estimated Useful Life:
 - 1. Calculated based on IES LM-80 test data.
 - 2. Fluorescent Lamp Replacements: Minimum of 50,000 hours at 70 percent lumen maintenance.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.
- B. Install products in accordance with manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 500 (commercial lighting) and NECA 502 (industrial lighting).
- D. Provide required support and attachment in accordance with Section 26 0529.
- E. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- F. Recessed Luminaires:
 - 1. Install trims tight to mounting surface with no visible light leakage.
- G. Install accessories furnished with each luminaire.
- H. Bond products and metal accessories to branch circuit equipment grounding conductor.
- I. Install lamps in each luminaire.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Test self-powered exit signs to verify proper operation upon loss of normal power supply.
- E. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

3.04 ADJUSTING

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.
- B. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

3.05 CLEANING

A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and

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restore finishes to match original factory finish.

3.06 CLOSEOUT ACTIVITIES

A. Just prior to Substantial Completion, replace all lamps that have failed.

3.07 SCHEDULE - SEE DRAWINGS

SECTION 27 5119 SOUND MASKING SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sound masking system.
- B. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 26 0526 Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 Hangers and Supports for Electrical Systems.
- C. Section 26 0553 Identification for Electrical Systems: Identification products and requirements.

1.03 REFERENCE STANDARDS

- A. ASTM E1573 Standard Test Method for Measurement and Reporting of Masking Sound Levels Using A-Weighted and One-Third-Octave-Band Sound Pressure Levels; 2022.
- B. NECA 1 Standard for Good Workmanship in Electrical Construction; 2023.
- C. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. UL 2043 Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces; Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
 - 1. Coordinate the placement of loudspeakers with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
 - 2. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.05 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each system component. Include ratings, configurations, standard wiring diagrams, outline and support point dimensions, finishes, weights, service condition requirements, and installed features.
- C. Shop Drawings: Include dimensioned plan views and sections indicating locations of system components, required clearances, attachment locations and details, and proposed size, type, and routing of conduits and/or cables. Include system interconnection schematic diagrams and proposed arrangement of loudspeaker control zones.
- D. Certify that proposed system design and components meet or exceed specified requirements.
- E. Installer's Qualification Statement: Include evidence of compliance with specified requirements.
- F. Operation and Maintenance Data: Include detailed information on system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
- G. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.
- H. Project Record Documents: Record actual locations of system components, installed wiring arrangements and routing, and final equipment settings.

1.06 QUALITY ASSURANCE

A. Comply with NFPA 70.

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- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.
- B. Store products in manufacturer's unopened packaging, keep dry and protect from damage until ready for installation.

1.08 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.09 WARRANTY

- A. See Section 01 7800 Closeout Submittals, for additional warranty requirements.
- B. Provide minimum five year manufacturer warranty covering repair or replacement due to defective materials or workmanship.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Sound Masking System Basis of Design: _____
 - 1. Centralized Sound Masking Systems:
 - a. Cambridge Sound Management, Inc; QtPro: www.cambridgesound.com/#sle.
- B. Substitutions: See Section 01 6000 Product Requirements.
- C. Products other than basis of design are subject to compliance with specified requirements and prior approval of Engineer. By using products other than basis of design, Contractor accepts responsibility for costs associated with any necessary modifications to related work, including any design fees.
- D. Source Limitations: Furnish sound masking system components produced by a single manufacturer and obtained from a single supplier.

2.02 SOUND MASKING SYSTEM REQUIREMENTS

- A. Provide complete sound masking system consisting of noise generators, equalizers, amplifiers, loudspeakers, wiring, supports and other components necessary for meeting specified sound masking requirements in areas indicated on the drawings.
- B. General Requirements:
 - 1. Provide products listed, classified, and labeled as suitable for the purpose intended.
 - 2. Unless specifically indicated to be excluded, provide all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, software, system programming, etc. as necessary for a complete operating system.
 - 3. System Components Installed in Spaces Used for Environmental Air: Plenum rated; listed and labeled as complying with UL 2043, suitable for use in air-handling spaces.
- C. Masking Sound Generation and Distribution Requirements:
 - 1. Provide random or pseudo-random masking sounds with a repetitive pattern of not less than 24 hours.
 - 2. Arrange system into masking control zones (independently controlled groups of loudspeakers) based on common installation conditions as indicated on the drawings.
 - a. Masking sound volume for each masking control zone to be adjustable in 0.5 dBA increments over a range of 35 dBA to 55 dBA at a distance of 3.3 feet (1 m).
- D. Masking Sound Performance Requirements:
 - 1. Unless otherwise indicated, compliance with specified requirements to be under the following test conditions:

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- a. Test at third-octaves with a calibrated sound level meter in accordance with ASTM E1573. Take measurements throughout each space at intervals not greater than every 1000 square feet.
- b. Test with ceiling and associated ceiling-mounted elements in place.
- c. Test with mechanical systems operating at normal daytime levels.
- d. Test with all furniture in place.
- 2. Meet specified requirements throughout spaces indicated when tested under specified test conditions, except as follows:
 - a. Where building noises that exceed the specified preferred spectrum have been identified and reported, when tested prior to system startup.
- 3. Masking Sound Spectrum: Based on the reference spectrum below (National Research Council Canada Optimum Spectrum 45.0 dBA overall).
 - a. Level at 100 Hz: 46.9 dB.
 - b. Level at 125 Hz: 45.9 dB.
 - c. Level at 160 Hz: 44.7 dB.
 - d. Level at 200 Hz: 43.9 dB.
 - e. Level at 250 Hz: 42.7 dB.
 - f. Level at 315 Hz: 41.4 dB.
 - g. Level at 400 Hz: 40.4 dB.
 - h. Level at 500 Hz: 38.9 dB.
 - i. Level at 630 Hz: 37.4 dB.
 - j. Level at 800 Hz: 35.4 dB.
 - k. Level at 1,000 Hz: 33.7 dB.
 - I. Level at 1,250 Hz: 31.4 dB.
 - m. Level at 1,600 Hz: 29.4 dB.
 - n. Level at 2,000 Hz: 27.4 dB.
 - o. Level at 2,500 Hz: 24.9 dB.
 - p. Level at 3,150 Hz: 22.4 dB.
 - q. Level at 4,000 Hz: 19.4 dB.
 - r. Level at 5,000 Hz: 16.4 dB.
 - s. Level at third-octave bands above 5,000 Hz: Less than 16.4 dB.
- 4. Masking Sound Uniformity:
 - a. Maximum Deviation for Individual Third-Octave Band Levels:
 - b. Maximum Deviation for Overall Masking Sound Level: Plus or minus 0.5 dBA.
 - c. Sources of masking sound can not be determined by occupants throughout spaces.
- E. System Control and Monitoring Requirements:
 - 1. Provide a PC interface for monitoring, displaying, reporting, and adjusting system settings.
 - 2. Provide security features to prevent unauthorized changes to or loss of system control settings.
 - a. Provide a locked enclosure or cabinet for readily accessible electronic components.
 - b. Provide password protection for access to programmable controls with a means for backing up settings.
- F. Loudspeaker Appearance:
 - 1. Finish Recessed in Ceiling: White.
- G. Centralized Sound Masking System Basis of Design: Cambridge Sound Management, Inc; QtPro System; www.cambridgesound.com/#sle.
 - 1. Control Module: Model Qt 600; 6-zone controller suitable for up to 120 standard Qt Emitters per zone (720 total) and sound masking coverage area of up to 72,000 sq feet; user-adjustable masking and audio input equalization; four non-correlated masking sources per zone (24 total); two music/paging audio inputs; volume adjustment for each masking zone (0.5 dB steps per zone) and audio input (1 dB steps per zone); two contact closures for emergency mute function; masking level time scheduling with automatic ramping; Ethernet connectivity for control/monitoring via web interface and Qt Command Center (where specified); wall- or rack-mounted; compatible with standard Qt Emitters and Qt Active Emitters (both may be used simultaneously provided they are on separate zones); compatible with Qt Room Control.

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- 2. Loudspeaker: Qt Emitter; downward facing direct field passive speaker with 170 degree nominal dispersion; integral volume attenuation control up to 9 dB in 3 dB decrements; plenum rated; white standard with available black caps and accessories; sound masking frequency response of 200 Hz to 6,300 Hz; music/paging frequency response of 200 Hz to 10,000 Hz; UTP (unshielded twisted pair) cable system connection; compatible with Qt 100, Qt 300, or Qt 600 control modules.
- 3. Loudspeaker Mounting:
 - a. Drywall Mount; for mounting standard Qt Emitter or Qt Active Emitter in drywall ceilings.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that ratings and configurations of system components are consistent with the indicated requirements.
- C. Verify that loudspeaker locations indicated are free from obstructions and meet manufacturer's minimum clearance requirements.
- D. Verify that mounting surfaces are ready to receive system components.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to system.
- F. Verify that conditions are satisfactory for installation prior to starting work.

3.02 INSTALLATION

- A. Perform work in accordance with NECA 1 (general workmanship).
- B. Install products in accordance with manufacturer's instructions.
- C. Provide required support and attachment in accordance with Section 26 0529.
- D. Mount loudspeakers with clearances within manufacturer's recommended range.
- E. Install loudspeakers level and plumb.
- F. Wiring Method: Unless otherwise indicated, use cables (not in conduit).
 - 1. Use listed plenum rated cables in spaces used for environmental air.
 - 2. Install wiring in conduit where required by authority having jurisdiction.
 - 3. Route cables parallel or perpendicular to building structural members and surfaces.
- G. Provide grounding and bonding in accordance with Section 26 0526.
- H. Identify system wiring and components in accordance with Section 26 0553.

3.03 FIELD QUALITY CONTROL

- A. See Section 01 4000 Quality Requirements, for additional requirements.
- B. Before performing system startup, measure sound levels under specified test conditions. Identify and report building noises that exceed the specified preferred spectrum.
- C. Prepare and start system in accordance with manufacturer's instructions. Correct defective work and adjust for compliance with specified requirements.
- D. Adjust settings for automatic timer controls as directed by Owner.
- E. Where system can not be adjusted to comply with specified requirements throughout all spaces indicated, other than for specified exceptions, provide additional equipment, wiring, programming, etc. as required for additional zones necessary for compliance at no additional cost.

3.04 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.05 CLOSEOUT ACTIVITIES

A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

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- B. See Section 01 7900 Demonstration and Training, for additional requirements.
- C. Training: Train Owner's personnel on operation, adjustment, and maintenance of sound masking system.
 - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
 - 2. Instructor: Qualified contractor familiar with the project and with sufficient knowledge of the installed system.
 - 3. Location: At project site.

3.06 PROTECTION

A. Protect installed system components from subsequent construction operations.

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SECTION 28 4600 FIRE DETECTION AND ALARM

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire alarm system design and installation, including all components, wiring, and conduit as indicated in the drawings.
- B. Removal and reinstallation of existing fire alarm system components, wiring, and conduit indicated.
- C. Fire alarm control system programming updates.

1.02 RELATED REQUIREMENTS

A. Section 21 1300 - Fire-Suppression Sprinkler Systems: Supervisory, alarm, and actuating devices installed in sprinkler system.

1.03 REFERENCE STANDARDS

- A. 36 CFR 1191 Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines; current edition.
- B. ADA Standards 2010 ADA Standards for Accessible Design; 2010.
- C. NFPA 70 National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. NFPA 72 National Fire Alarm and Signaling Code; Most Recent Edition Cited by Referring Code or Reference Standard.
- E. NFPA 101 Life Safety Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.04 SUBMITTALS

- A. See Section 01 3000 Administrative Requirements, for submittal procedures.
- B. Design Documents: Submit all information required for plan review and permitting by authorities having jurisdiction, including but not limited to floor plans, riser diagrams, and description of operation:
 - 1. Copy (if any) of list of data required by authority having jurisdiction.
 - 2. NFPA 72 "Record of Completion", filled out to the extent known at the time.
 - 3. Clear and concise description of operation, with input/output matrix similar to that shown in NFPA 72 Appendix A-7-5-2.2(9), and complete listing of software required.
 - 4. System zone boundaries and interfaces to fire safety systems.
 - 5. Location of all components, circuits, and raceways; mark components with identifiers used in control unit programming.
 - 6. Circuit layouts; number, size, and type of raceways and conductors; conduit fill calculations; spare capacity calculations; notification appliance circuit voltage drop calculations.
 - 7. List of all devices on each signaling line circuit, with spare capacity indicated.
 - 8. Manufacturer's detailed data sheet for each component, including wiring diagrams, installation instructions, and circuit length limitations.
 - 9. Description of power supplies; if secondary power is by battery include calculations demonstrating adequate battery power.
 - 10. Certification by either the manufacturer of the control unit or by the manufacturer of each other component that the components are compatible with the control unit.
 - 11. Certification by the manufacturer of the control unit that the system design complies with Contract Documents.
 - 12. Certification by Contractor that the system design complies with Contract Documents.
 - 13. Do not show existing components to be removed.
- C. Inspection and Test Reports:
 - 1. Submit inspection and test plan prior to closeout demonstration.
 - 2. Submit documentation of satisfactory inspections and tests.

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- 3. Submit NFPA 72 "Inspection and Test Form," filled out.
- D. Operating and Maintenance Data: See Section 01 7800 for additional requirements; revise and resubmit until acceptable; have one set available during closeout demonstration:
 - 1. Complete set of specified design documents, as approved by authority having jurisdiction.
 - 2. Additional printed set of project record documents and closeout documents, bound or filed in same manuals.
 - 3. Contact information for firm that will be providing contract maintenance and trouble callback service.
 - 4. List of recommended spare parts, tools, and instruments for testing.
 - 5. Replacement parts list with current prices, and source of supply.
 - 6. Detailed troubleshooting guide and large scale input/output matrix.
 - 7. Preventive maintenance, inspection, and testing schedule complying with NFPA 72; provide printed copy and computer format acceptable to Owner.
 - 8. Detailed but easy to read explanation of procedures to be taken by non-technical administrative personnel in the event of system trouble, when routine testing is being conducted, for fire drills, and when entering into contracts for remodeling.
- E. Project Record Documents: See Section 01 7800 for additional requirements; have one set available during closeout demonstration:
 - 1. Complete set of floor plans showing actual installed locations of components, conduit, and zones.
 - 2. "As installed" wiring and schematic diagrams, with final terminal identifications.
 - 3. "As programmed" operating sequences, including control events by device, updated input/output chart, and voice messages by event.
- F. Closeout Documents:
 - 1. Certification by manufacturer that the system has been installed in compliance with manufacturer's installation requirements, is complete, and is in satisfactory operating condition.
 - 2. NFPA 72 "Record of Completion", filled out completely and signed by installer and authorized representative of authority having jurisdiction.

1.05 QUALITY ASSURANCE

A. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Existing Fire Alarm Control Units and Accessories:
 - 1. Simplex, a brand of Johnson Controls; _____: www.simplex-fire.com/#sle.
- B. Existing Initiating Devices and Notification Appliances:
 - 1. Same manufacturer as control units.
 - 2. Provide initiating devices and notification appliances made by the same manufacturer, where possible.

2.02 FIRE ALARM SYSTEM

- A. Fire Alarm System: Provide modifications and extensions to the existing automatic fire detection and alarm system:
 - 1. Provide all components necessary, regardless of whether shown in Contract Documents or not.
 - 2. Protected Premises: Entire remodeled portion of the building shown on the drawings..
 - 3. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
 - a. ADA Standards.
 - b. The requirements of the State Fire Marshal.
 - c. The requirements of the local authority having jurisdiction.
 - d. Applicable local codes.

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- e. Contract Documents (drawings and specifications).
- f. NFPA 101.
- g. NFPA 72; where the word "should" is used consider that provision mandatory; where conflicts between requirements require deviation from NFPA 72, identify deviations clearly on design documents.

2.03 EXISTING COMPONENTS

- A. Existing Fire Alarm System: Remove and relocate existing components as indicated. Existing smoke detectors to be removed and stored. Replace with new heat detectors for construction phase. Remove heat detectors, salvage to owner and re-install existing smoke detectors after construction phase. Provide programming to construction areas to update existing smoke detectors to heat detection during construction phase and reprogram to activate smoke detectors after construction phase.
- B. Remove unused existing components and materials from site and dispose of properly.

2.04 COMPONENTS

- A. General:
 - 1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
 - 2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.
- B. Existing Fire Alarm Control Units: Analog, addressable type; listed, classified, and labeled as suitable for the purpose intended.
- C. Master Control Unit: Existing to remain.
- D. Initiating Devices:
 - 1. Addressable Systems:
 - a. Addressable Devices: Individually identifiable by addressable fire alarm control unit.
 - b. Provide suitable addressable interface modules as indicated or as required for connection to conventional (non-addressable) devices and other components that provide a dry closure output.
- E. Notification Appliances:
- F. Circuit Conductors:
 - 1. All cabling to be plenum rated.
 - 2. Copper or optical fiber; provide 200 feet extra; color code and label.
- G. Locks and Keys: Deliver keys to Owner.
- H. Instruction Charts: Printed instruction chart for operators, showing steps to be taken when a signal is received (normal, alarm, supervisory, and trouble); easily readable from normal operator's station.
 - 1. Frame: Stainless steel or aluminum with polycarbonate or glass cover.
 - 2. Provide one for each control unit where operations are to be performed.
 - 3. Obtain approval of Owner prior to mounting; mount in location acceptable to Owner.
 - 4. Provide extra copy with operation and maintenance data submittal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and Contract Documents.
- B. All wiring, conduit, boxes, and supports where installed in finished areas.
 - 1. All wiring installed above ceilings to be free aired.
 - 2. Exposed ceilings, wiring to be installed in conduit.
- C. All wiring, conduit, boxes, and supports where installed in unfinished areas
 - 1. All wiring installed above ceilings to be free aired.
 - 2. Exposed ceilings, wiring to be installed free aired.
- D. See section 26 0533.13 Conduit for Electrical Systems.
- E. Obtain Owner's approval of locations of devices, before installation.

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F. Install instruction cards and labels.

3.02 INSPECTION AND TESTING FOR COMPLETION

- A. Notify Owner 7 days prior to beginning completion inspections and tests.
- B. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.
- C. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.
- D. Provide all tools, software, and supplies required to accomplish inspection and testing.
- E. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.
- F. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

3.03 CLOSEOUT

- A. Closeout Demonstration: Demonstrate proper operation of all functions to Owner.
 - 1. Be prepared to conduct any of the required tests.
 - 2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
 - 3. Have authorized technical representative of control unit manufacturer present during demonstration.
 - 4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.
 - 5. Repeat demonstration until successful.