

# PROJECT MANUAL

## *Roof Replacement, Tuckpointing and Interior Repair*

### *Sikeston Readiness Center*

#### *Sikeston, Missouri*

Designed By: Etegra, Inc.  
12813 Flushing Meadows Dr., Suite 170  
Town & Country, MO 63131

Date Issued: May 3, 2024

Project No.: T2235-01

STATE *of* MISSOURI

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OFFICE *of* ADMINISTRATION  
Facilities Management, Design & Construction

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## SECTION 000107 - PROFESSIONAL SEALS AND CERTIFICATIONS

PROJECT NUMBER: T2235-01

**THE FOLLOWING DESIGN PROFESSIONALS HAVE SIGNED AND SEALED THE ORIGINAL PLANS AND SPECIFICATIONS FOR THIS PROJECT, WHICH ARE ON FILE WITH THE DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION:**

A. Architect:

1. Bruce Lynn Hesterberg
2. State of Missouri Registered Architect # A-6167
3. Responsible for the following Divisions/Section except where indicated as prepared by other design professionals of record.
  - a. Division 01
  - b. Division 04
  - c. Division 05
  - d. Division 06
  - e. Division 07
  - f. Division 09
  - g. Section 024119



B. Environmental Consultant

1. Jessica B. Keaven
2. SCI Engineering, Inc.
3. Responsible for
  - a. Section 028200
  - b. Section 028300

05/03/2024

C. Other Report for Contractor's Reference

1. Interek-PSI  
Letter Report for Limited Asbestos Sampling and Limited Lead-Based Paint Testing dated August 1, 2023.

D. Other Report for Contractor's Reference

1. Geotechnology Inc.  
Limited Asbestos Survey Sikeston Readiness Center 300 South Main Street Sikeston, Missouri dated November 9, 2020.

END OF SECTION 000107

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### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section provides a comprehensive list of the drawings that comprise the Bid Documents for this project.

### **PART 2 - PRODUCTS (NOT APPLICABLE)**

### **PART 3 - EXECUTION**

#### **3.1 LIST OF DRAWINGS**

- A. The following list of drawings is a part of the Bid Documents:

|     | <b><u>TITLE</u></b>             | <b><u>SHEET #</u></b> | <b><u>DATE</u></b> |
|-----|---------------------------------|-----------------------|--------------------|
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## SECTION 001116 - INVITATION FOR BID

### 1.0 OWNER:

- A. The State of Missouri  
Office of Administration,  
Division of Facilities Management, Design and Construction  
Jefferson City, Missouri

### 2.0 PROJECT TITLE AND NUMBER:

- A. Roof Replacement, Tuckpointing and Interior Repair  
Sikeston Readiness Center  
Sikeston, Missouri  
**Project No.: T2235-01**

### 3.0 BIDS WILL BE RECEIVED:

- A. Until: 1:30 PM, July 25, 2024
- B. **Only electronic bids on MissouriBUYS shall be accepted: <https://missouribuys.mo.gov>. Bidder must be registered to bid.**

### 4.0 DESCRIPTION:

- A. Scope: The project includes a complete replacement of roofing system. New scuppers and downspouts. Masonry repair including replacement and tuckpointing. Resealing window, door, other exterior wall penetrations. Interior repairs including lead-based paint abatement and repainting areas of damaged and failing paint. Replacement of flooring, underlayment and damaged sub-floor. Replacement of acoustical ceiling tiles and other work indicated in the Contract Documents.
- B. MBE/WBE/SDVE Goals: MBE 10%, WBE 10%, and SDVE 3%. **NOTE: Only MBE/WBE firms certified by the State of Missouri Office of Equal Opportunity as of the date of bid opening, or SDVE(s) meeting the requirements of Section 34.074, RSMo and 1 CSR 30-5.010, can be used to satisfy the MBE/WBE/SDVE participation goals for this project.**

### 5.0 PRE-BID MEETING:

- A. Place/Time: 11:30 AM, July 10, 2024, at Sikeston Readiness Center, 300 South Main Street, Sikeston, MO.
- B. Access to State of Missouri property requires presentation of a photo ID by all persons

### 6.0 HOW TO GET PLANS & SPECIFICATIONS:

- A. View Only Electronic bid sets are available at no cost or paper bid sets for a deposit of \$200.00 from American Document Solutions (ADS). MAKE CHECKS PAYABLE TO: American Document Solutions. Mail to: American Document Solutions, 1400 Forum Blvd., Suite 7A, Columbia, Missouri 65203. Phone 573-446-7768, Fax 573-355-5433, <https://www.adsplanroom.net>. NOTE: Prime contractors will be allowed a maximum of two bid sets at the deposit rate shown above. Other requesters will be allowed only one bid set at this rate. Additional bid sets or parts thereof may be obtained by any bidder at the cost of printing and shipping by request to American Document Solutions at the address shown above. **Bidder must secure at least one bid set to become a planholder.**
- B. **Refunds: Return plans and specifications in unmarked condition within 15 working days of bid opening to American Document Solutions, 1400 Forum Blvd., Suite 7A, Columbia, Missouri 65203. Phone 573-446-7768, Fax 573-355-5433. Deposits for plans not returned within 15 working days shall be forfeited.**
- C. Information for upcoming bids, including downloadable plans, specifications, Invitation for Bid, bid tabulation, award, addenda, and access to the ADS planholders list, is available on the Division of Facilities Management, Design and Construction's web site: <https://oa.mo.gov/facilities/bid-opportunities/bid-listing-electronic-plans>.

### 7.0 POINT OF CONTACT:

- A. Designer: Etegra, Inc., Bruce Hesterberg, 314-313-3905, email: [Bruce.Hesterberg@etegra.com](mailto:Bruce.Hesterberg@etegra.com)
- B. Project Manager: Christopher Lloyd, 573-526-0160, email: [Christopher.Lloyd@oa.mo.gov](mailto:Christopher.Lloyd@oa.mo.gov)

### 8.0 GENERAL INFORMATION:

- A. The State reserves the right to reject any and all bids and to waive all informalities in bids. No bid may be withdrawn for a period of 20 working days subsequent to the specified bid opening time. The contractor shall pay not less than the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed, as determined by the Missouri Department of Labor and Industrial Relations and as set out in the detailed plans and specifications.
- B. Bid results will be available at <https://oa.mo.gov/facilities/bid-opportunities/bid-listing-electronic-plans> after it is verified that at least one bid is awardable and affordable.

## Very Important MissouriBUYS Instructions to Help Submit a Bid Correctly

- A. The bidder shall submit his or her bid and all supporting documentation on MissouriBUYS eProcurement System. No hard copy bids shall be accepted. Go to <https://missouribuys.mo.gov> and register. The bidder must register and complete a profile fully with all required documents submitted prior to submitting a bid.
- B. Once registered, log in.
1. Under "Solicitation" select "View Current Solicitations."
  2. Under "Filter by Agency" select "OA-FMDC-Contracts Chapter 8", then click "Filter Solicitation" button.
  3. Select "Active Solicitations" tab.
  4. To see the Solicitation Summary, click on the Project Number and the summary will open. Click each heading to open detailed information.
- C. Here are simplified instructions for uploading the bid to MissouriBUYS:
1. Find the solicitation by completing Steps 1 through 4 above.
  2. Select the three dots under "Actions." Select "Add New Response."
  3. When the Quote box opens, give the response a title and select "OK."
  4. The detailed solicitation will open. Select "Check All" for the Original Solicitation Documents, open each document, and select "Accept." If this step is not completed, a bid cannot be uploaded. Scroll to the bottom of the page and select "Add Attachments." If you do not see this command, not all documents have been opened and accepted.
  5. The Supplier Attachments box will open. Select "Add Attachment" again.
  6. The Upload Documents box will open. Read the instructions for uploading. Disregard the "Confidential" check box.
  7. Browse and attach up to 5 files at a time. Scroll to bottom of box and select "Upload." The Supplier Attachments box will open. Repeat Steps 5 through 7 if more than 5 files are to be uploaded.
  8. When the Supplier Attachments box opens again and uploading is complete, select "Done." A message should appear that the upload is successful. If it does not, go to the Bidder Response tab and select "Submit."
  9. The detailed solicitation will open. At the bottom select "Close."
  10. Ensure receipt of notifications including current e-mail address are enabled within vendor profile.
- D. Any time a bidder wants to modify the bid, he or she will have to retract, make revisions, and then submit again. Please ensure that "draft" status is not shown. FMDC will open the last response the bidder submits. The bidder may revise and submit the bid up to the close of the solicitation (bid date and time). Be sure to allow for uploading time so that the bid is successfully uploaded prior to the 1:30 PM deadline; we can only accept the bid if it is uploaded before the deadline.
- E. If you want to verify that you are uploading documents correctly, please contact Paul Girouard: 573-751-4797, [paul.girouard@oa.mo.gov](mailto:paul.girouard@oa.mo.gov) ; April Howser: 573-751-0053, [April.Howser@oa.mo.gov](mailto:April.Howser@oa.mo.gov) ; or Mandy Roberson: 573-522-0074, [Mandy.Roberson@oa.mo.gov](mailto:Mandy.Roberson@oa.mo.gov).
- F. If you are experiencing login issues, please contact Web Procure Support (Proactis) at 866-889-8533 anytime from 7:00 AM to 7:00 PM Central Time, Monday through Friday. If you try using a userid or password several times that is incorrect, the system will lock you out. Web Procure Support is the only option to unlock you! If you forget your userid or password, Web Procure Support will provide a temporary userid or password. Also, if it has been a while since your last successful login and you receive an "inactive" message, contact Web Procure (Proactis). If you are having a registration issue, you may contact Office of Administration Division of Accounting at 573-751-2971 and ask for the MissouriBUYS vendor team.

## **SECTION 002113 – INSTRUCTIONS TO BIDDERS**

### **1.0 - SPECIAL NOTICE TO BIDDERS**

- A. If awarded a contract, the Bidder's employees, and the employees of all subcontractors, who perform the work on the project must adhere to requirements in Section 013513 – Site Security and Health Requirements as applicable per Agency.
- B. The Bidder's prices shall include all city, state, and federal sales, excise, and similar taxes that may lawfully be assessed in connection with the performance of work, and the purchased of materials to be incorporated in the work. THIS PROJECT IS NOT TAX EXEMPT.

### **2.0 - BID DOCUMENTS**

- A. The number of sets obtainable by any one (1) party may be limited in accordance with available supply.
- B. For the convenience of contractors, sub-contractors and suppliers, copies of construction documents are on file at the office of the Director, Division of Facilities Management, Design and Construction and on the Division's web site - <https://oa.mo.gov/facilities/bid-opportunities/bid-listing-electronic-plans>.

### **3.0 - BIDDERS' OBLIGATIONS**

- A. Bidders must carefully examine the entire site of the work and shall make all reasonable and necessary investigations to inform themselves thoroughly as to the facilities available as well as to all the difficulties involved in the completion of all work in accordance with the specifications and the plans. Bidders are also required to examine all maps, plans and data mentioned in the specifications. No plea of ignorance concerning observable existing conditions or difficulties that may be encountered in the execution of the work under this contract will be accepted as an excuse for any failure or omission on the part of the contractor to fulfill in every detail all of the requirements of the contract, nor accepted as a basis for any claims for extra compensation.
- B. Under no circumstances will contractors give their plans and specifications to another contractor. Any bid received from a contractor whose name does not appear on the list of plan holders may be subject to rejection.

### **4.0 - INTERPRETATIONS**

- A. No bidder shall be entitled to rely on oral interpretations as to the meaning of the plans and specifications or the acceptability of alternate products, materials, form or type of construction. Every request for interpretation shall be made in writing and submitted with all supporting documents not less than five (5) working days before opening of bids. Every interpretation made to a bidder will be in the form of an addendum and will be sent as promptly as is practicable to all persons to whom plans and specifications have been issued. All such addenda shall become part of the contract documents.
- B. Approval for an "acceptable substitution" issued in the form of an addendum as per Paragraph 4A above, and as per Article 3.1 of the General Conditions; ACCEPTABLE SUBSTITUTIONS shall constitute approval for use in the project of the product.
- C. An "acceptable substitution" requested after the award of bid shall be approved if proven to the satisfaction of the Owner and the Designer as per Article 3.1, that the product is acceptable in design, strength, durability, usefulness, and convenience for the purpose intended. Approval of the substitution after award is at the sole discretion of the Owner.
- D. A request for "Acceptable Substitutions" shall be made on the Section 006325 Substitution Request Form. The request shall be sent directly to the project Designer. A copy of said request should also be mailed to the Owner, Division of Facilities Management, Design and Construction, Post Office Box 809, Jefferson City, Missouri 65102.

## **5.0 - BIDS AND BIDDING PROCEDURE**

- A. Bidders shall submit all submission forms and accompanying documents listed in SECTION 004113 – BID FORM, Article 5.0, ATTACHMENTS TO BID by the stated time or their bid will be rejected for being non-responsive.

Depending on the specific project requirements, **the following is a GENERIC list** of all possible bid forms that may be due with bid submittals and times when they may be due. Please check for specific project requirements on the proposal form (Section 004113). ***Not all of the following bid forms may be required to be submitted.***

### **Bid Submittal – due before stated date and time of bid opening (see IFB):**

|        |   |
|--------|---|
| 004113 | Bid Form (all pages are always required)                  |
| 004322 | Unit Prices Form  |
| 004336 | Proposed Subcontractors Form                              |
| 004337 | MBE/WBE/SDVE Compliance Evaluation Form                   |
| 004338 | MBE/WBE/SDVE Eligibility Determination for Joint Ventures |
| 004339 | MBE/WBE/SDVE GFE Determination                            |
| 004340 | SDVE Business Form  |
| 004541 | Affidavit of Work Authorization                           |
| 004545 | Anti-Discrimination Against Israel Act Certification form |

- B. All bids shall be submitted without additional terms and conditions, modification or reservation on the bid forms with each space properly filled. Bids not on these forms will be rejected.
- C. All bids shall be accompanied by a bid bond executed by the bidder and a duly authorized surety company, certified check, cashier's check or bank draft made payable to the Division of Facilities Management, Design and Construction, State of Missouri, in the amount indicated on the bid form, Section 004113. Failure of the contractor to submit the full amount required shall be sufficient cause to reject his bid. The bidder agrees that the proceeds of the check, draft or bond shall become the property of the State of Missouri, if for any reason the bidder withdraws his bid after closing, or if on notification of award refuses or is unable to execute tendered contract, provide an acceptable performance and payment bond, provide evidence of required insurance coverage and/or provide required copies of affirmative action plans within ten (10) working days after such tender.
- D. The check or draft submitted by the successful bidder will be returned after the receipt of an acceptable performance and payment bond and execution of the formal contract. Checks or drafts of all other bidders will be returned within a reasonable time after it is determined that the bid represented by same will receive no further consideration by the State of Missouri. Bid bonds will only be returned upon request.

## **6.0 - SIGNING OF BIDS**

- A. A bid from an individual shall be signed as noted on the Bid Form.
- B. A bid from a partnership or joint venture shall require only one signature of a partner, an officer of the joint venture authorized to bind the venture or an attorney-in-fact. If the bid is signed by an officer of a joint venture or an attorney-in-fact, a document evidencing the individual's authority to execute contracts should be included with the bid form.
- C. A bid from a limited liability company (LLC) shall be signed by a manager or a managing member of the LLC.
- D. A bid from a corporation shall have the correct corporate name thereon and the signature of an authorized officer of the corporation manually written. Title of office held by the person signing for the corporation shall appear, along with typed name of said individual. Corporate license number shall be provided and, if a corporation organized in a state other than Missouri, a Certificate of Authority to do business in the State of Missouri shall be attached. In addition, for corporate proposals, the President or Vice-President should sign as the bidder. If the signator is other than the corporate president or vice president, the bidder must provide satisfactory evidence that the signator has the legal authority to bind the corporation.

- E. A bid should contain the full and correct legal name of the Bidder. If the Bidder is an entity registered with the Missouri Secretary of State, the Bidder's name on the bid form should appear as shown in the Secretary of State's records.
- F. The Bidder should include its corporate license number on the Bid Form and, if the corporation is organized in a state other than Missouri, a Certificate of Authority to do business in the State of Missouri shall be attached to the bid form.

#### **7.0 - RECEIVING BID SUBMITTALS**

- A. It is the bidder's sole responsibility to assure receipt by Owner of bid submittals by the date and time specified in the Invitation for Bid. Bids received after the date and time specified shall not be considered by the Owner.
- B. Bids must be submitted through the MissouriBUYS statewide eProcurement system (<https://www.missouribuys.mo.gov/>) in accordance with the instructions for that system. The Owner shall only accept bids submitted through MissouriBUYS. Bids received by the Owner through any other means, including hard copies, shall not be considered and will be discarded by the Owner unopened.
- C. To respond to an Invitation for Bid, the Bidder must first register with MissouriBUYS by going through the MissouriBUYS Home Page (<https://www.missouribuys.mo.gov/>), clicking the "Register" button at the top of the page, and completing the Vendor Registration. Once registered, the Bidder accesses its account by clicking the "Login" button at the top of the MissouriBUYS Home Page. Enter your USERID and PASSWORD, which the Bidder will select. Under Solicitations, select "View Current Solicitations." A new screen will open. Under "Filter by Agency" select "OA-FMDC-Contracts Chapter 8." Under "Filter by Opp. No." type in the State Project Number. Select "Submit." Above the dark blue bar, select "Other Active Opportunities." To see the Solicitation Summary, single click the Opp. No. (Project Number) and the summary will open. Single quick click each blue bar to open detailed information. The Bidder must read and accept the Original Solicitation Documents and complete all identified requirements. The Bidder should download and save all of the Original Solicitation Documents on its computer so that the Bidder can prepare its response to these documents. The Bidder should upload its completed response to the downloaded documents as an attachment to the electronic solicitation response.
- D. Step-by-step instructions for how a registered vendor responds to a solicitation electronically are provided in Section 001116 – Invitation For Bid.
- E. The Bidder shall submit its bid on the forms provided by the Owner on MissouriBUYS with each space fully and properly completed, including all amounts required for alternate bids, unit prices, cost accounting data, etc. The Owner may reject bids that are not on the Owner's forms or that do not contain all requested information.
- F. No Contractor shall stipulate in his bid any conditions not contained in the specifications or standard bid form contained in the contract documents. To do so may subject the Contractor's bid to rejection.
- G. The completed forms shall be without interlineations, alterations or erasures.

#### **8.0 - MODIFICATION AND WITHDRAWAL OF BIDS**

- A. Bidder may withdraw his bid at any time prior to scheduled closing time for receipt of bids, but no bidder may withdraw his bid for a period of twenty (20) working days after the scheduled closing time for receipt of bids.
- B. The Bidder shall modify his or her original bid by submitting a revised bid on MissouriBUYS.

#### **9.0 - AWARD OF CONTRACT**

- A. The Owner reserves the right to reject any and/or all bids and further to waive all informalities in bidding when deemed in the best interest of the State of Missouri.
- B. The Owner reserves the right to let other contracts in connection with the work, including but not by way of limitation, contracts for the furnishing and installation of furniture, equipment, machines, appliances and other apparatus.

- C. The Owner shall award a contract to the lowest, responsive, responsible Bidder in accordance with Section 8.250, RSMo. No contract will be awarded to any Bidder who has had a contract with the Owner terminated within the preceding twelve months for material breach of contract or who has been suspended or debarred by the Owner.
- D. Award of alternates, if any, will be made in numerical order unless all bids received are such that the order of acceptance of alternates does not affect the determination of the lowest, responsive, responsible bidder.
- E. No bid shall be considered binding upon the Owner until the written contract has been properly executed, a satisfactory bond has been furnished, evidence of required insurance coverage, submittal of executed Section 004541, Affidavit of Work Authorization form, documentation evidencing enrollment and participation in a federal work authorization program has been received and an affirmative action plan submitted. Failure to execute and return the contract and associated documents within the prescribed period of time shall be treated, at the option of the Owner, as a breach of bidder's obligation and the Owner shall be under no further obligation to bidder.
- F. If the successful bidder is doing business in the State of Missouri under a fictitious name, he shall furnish to Owner, attached to the Bid Form, a properly certified copy of the certificate of Registration of Fictitious Name from the State of Missouri, and such certificate shall remain on file with the Owner.
- G. Any successful bidder which is a corporation organized in a state other than Missouri shall furnish to the Owner, attached to the Bid Form, a properly certified copy of its current Certificate of Authority to do business in the State of Missouri, such certificate to remain on file with the Owner. No contract will be awarded by the Owner unless such certificate is furnished by the bidder.
- H. Any successful bidder which is a corporation organized in the State of Missouri shall furnish at its own cost to the Owner, if requested, a Certificate of Good Standing issued by the Secretary of State, such certificate to remain on file with the Owner.
- I. Transient employers subject to Sections 285.230 and 285.234, RSMo, (out-of-state employers who temporarily transact any business in the State of Missouri) may be required to file a bond with the Missouri Department of Revenue. No contract will be awarded by the Owner unless the successful bidder certifies that he has complied with all applicable provisions of Section 285.230-234.
- J. Sections 285.525 and 285.530, RSMo, require business entities to enroll and participate in a federal work authorization program in order to be eligible to receive award of any state contract in excess of \$5,000. Bidders should submit with their bid an Affidavit of Work Authorization (Section 004541) along with appropriate documentation evidencing such enrollment and participation. Section-004541, Affidavit of Work Authorization is located on the MissouriBUYS solicitation for this project. Bidders must also submit an E-Verify Memorandum before the Owner may award a contract to the Bidder. Information regarding an E-Verify is located at <https://www.uscis.gov/e-verify/>. The contractor shall be responsible for ensuring that all subcontractors and suppliers associated with this contract enroll in E-Verify.

#### **10.0 - CONTRACT SECURITY**

- A. The successful bidder shall furnish a performance/payment bond as set forth in General Conditions Article 6.1 on a condition prior to the State executing the contract and issuing a notice to proceed.

#### **11.0 - LIST OF SUBCONTRACTORS**

- A. If required by "Section 004113 – Bid Form," each bidder must submit as part of their bid a list of subcontractors to be used in performing the work (Section 004336). The list must specify the name of the single designated subcontractor, for each category of work listed in "Section 004336 - Proposed Subcontractors Form." If work within a category will be performed by more than one subcontractor, the bidder must provide the name of each subcontractor and specify the exact portion of the work to be done by each. Failure to list the Bidder's firm, or a subcontractor for each category of work identified on the Bid Form or the listing of more than one subcontractor for any category without designating the portion of work to be performed by each shall be cause for rejection of the bid. If the bidder intends to perform any of the designated subcontract work with the use of his own employees, the bidder shall make that fact clear, by listing his own firm for the subject category. **If any category of work is left vacant, the bid shall be rejected.**



## **12.0 - WORKING DAYS**

- A. Contract duration time is stated in working days and will use the following definition in determining the actual calendar date for contract completion:
  - 1. Working days are defined as all calendar days except Saturdays, Sundays and the following State of Missouri observed holidays: New Year's Day, Martin Luther King, Jr. Day, Lincoln Day, Washington's Birthday, Truman Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day and Christmas Day.

## **13.0 - AMERICAN AND MISSOURI - MADE PRODUCTS AND FIRMS**

- A. By signing the bid form and submitting a bid on this project, the Bidder certifies that it will use American and Missouri products as set forth in Article 1.7 of the General Conditions. Bidders are advised to review those requirements carefully prior to bidding.
- B. A preference shall be given to Missouri firms, corporations or individuals, or firms, corporations or individuals that maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less.
- C. Pursuant to Section 34.076, RSMo, a contractor or Bidder domiciled outside the boundaries of the State of Missouri shall be required, in order to be successful, to submit a bid the same percent less than the lowest bid submitted by a responsible contractor or Bidder domiciled in Missouri as would be required for such a Missouri domiciled contractor or Bidder to succeed over the bidding contractor or Bidder domiciled outside Missouri on a like contract or bid being let in the person's domiciliary state and, further, the contractor or Bidder domiciled outside the boundaries of Missouri shall be required to submit an audited financial statement as would be required of a Missouri domiciled contractor or Bidder on a like contract or bid being let in the domiciliary state of that contractor or Bidder.

## **14.0 – ANTI-DISCRIMINATION AGAINST ISRAEL ACT CERTIFICATION:**

- A. Pursuant to section 34.600, RSMo, if the Bidder meets the section 34.600, RSMo, definition of a “company” and the Bidder has ten or more employees, the Bidder must certify in writing that the Bidder is not currently engaged in a boycott of goods or services from the State of Israel as defined in section 34.600, RSMo, and shall not engage in a boycott of goods or services from the State of Israel, if awarded a contract, for the duration of the contract. The Bidder is requested to complete and submit the applicable portion of Section 004545 - Anti-Discrimination Against Israel Act Certification with their Bid Form. The applicable portion of the exhibit must be submitted prior to execution of a contract by the Owner and issuance of Notice to Proceed. If the exhibit is not submitted, the Owner shall rescind its Intent to Award and move to the next lowest, responsive, responsible bidder.

## **15.0 - MBE/WBE/SDVE INSTRUCTIONS**

- A. Definitions:
  - 1. “**MBE**” means a Minority Business Enterprise.
  - 2. “**MINORITY**” has the same meaning as set forth in 1 C.S.R. 10-17.010.
  - 3. “**MINORITY BUSINESS ENTERPRISE**” has the same meaning as set forth in section 37.020, RSMo.
  - 4. “**WBE**” means a Women’s Business Enterprise.
  - 5. “**WOMEN’S BUSINESS ENTERPRISE**” has the same meaning as set forth in section 37.020, RSMo.
  - 6. “**SDVE**” means a Service-Disabled Veterans Enterprise.
  - 7. “**SERVICE-DISABLED VETERAN**” has the same meaning as set forth in section 34.074, RSMo.
  - 8. “**SERVICE-DISABLED VETERAN ENTERPRISE**” has the same meaning as “Service-Disabled Veteran Business” set forth in section 34.074, RSMo.

B. MBE/WBE/SDVE General Requirements:

1. For all bids greater than \$100,000, the Bidder shall obtain MBE, WBE and SDVE participation in an amount equal to or greater than the percentage goals set forth in the Invitation for Bid and the Bid Form, unless the Bidder is granted a Good Faith Effort waiver by the Director of the Division, as set forth below. If the Bidder does not meet the MBE, WBE and SDVE goals, or make a good faith effort to do so, the Bidder shall be non-responsive, and its bid shall be rejected.
2. The Bidder should submit with its bid all of the information requested in the MBE/WBE/SDVE Compliance Evaluation Form for every MBE, WBE, or SDVE subcontractor or material supplier the Bidder intends to use for the contract work. The Bidder is required to submit all appropriate MBE/WBE/SDVE documentation before the stated time and date set forth in the Invitation for Bid. If the Bidder fails to provide such information by the specified date and time, the Owner shall reject the bid.
3. The Director reserves the right to request additional information from a Bidder to clarify the Bidder's proposed MBE, WBE, and/or SDVE participation. The Bidder shall submit the clarifying information requested by the Owner within two (2) Working Days of receiving the request for clarification.
4. Pursuant to section 34.074, RSMo, a Bidder that is a SDVE doing business as Missouri firm, corporation, or individual, or that maintains a Missouri office or place of business, shall receive a three-point bonus preference in the contract award evaluation process. The bonus preference will be calculated and applied by reducing the bid amount of the eligible SDVE by three percent of the apparent low responsive bidder's bid. Based on this calculation, if the eligible SDVE's evaluation is less than the apparent low responsive bidder's bid, the eligible SDVE's bid becomes the apparent low responsive bid. This reduction is for evaluation purposes only, and will have no impact on the actual amount(s) of the bid or the amount(s) of any contract awarded. In order to be eligible for the SDVE preference, the Bidder must complete and submit with its bid the Missouri Service Disabled Veteran Business Form, and any information required by the form. The form is available on the MissouriBUYS solicitation for this project.

C. Computation of MBE/WBE/SDVE Goal Participation:

1. A Bidder who is a MBE, WBE, or SDVE may count 100% of the contract towards the MBE, WBE or SDVE goal, less any amounts awarded to another MBE, WBE or SDVE. (NOTE: A MBE firm that bids as general contractor must obtain WBE and SDVE participation; a WBE firm that bids as a general contractor must obtain MBE and SDVE participation; and a SDVE firm that bids as general contractor must obtain MBE and WBE participation.) In order for the remaining contract amount to be counted towards the MBE, WBE or SDVE goal, the Bidder must complete the MBE/WBE/SDVE Compliance Evaluation Form (Section 004337) identifying itself as an MBE, WBE or SDVE.
2. The total dollar value of the work granted to a certified MBE, WBE or SDVE by the Bidder shall be counted towards the applicable goal.
3. Expenditures for materials and supplies obtained from a certified MBE, WBE, or SDVE supplier or manufacturer may be counted towards the MBE, WBE and SDVE goals, if the MBE, WBE, or SDVE assumes the actual and contractual responsibility for the provision of the materials and supplies.
4. The total dollar value of the work granted to a second or subsequent tier subcontractor or a supplier may be counted towards a Bidder's MBE, WBE and SDVE goals, if the MBE, WBE, or SDVE properly assumes the actual and contractual responsibility for the work.
5. The total dollar value of work granted to a certified joint venture equal to the percentage of the ownership and control of the MBE, WBE, or SDVE partner in the joint venture may be counted towards the MBE/WBE/SDVE goals.
6. Only expenditures to a MBE, WBE, or SDVE that performs a commercially useful function in the work may be counted towards the MBE, WBE and SDVE goals. A MBE, WBE, or SDVE performs a commercially useful function when it is responsible for executing a distinct element of the work and carrying out its responsibilities by actually performing, managing and supervising the work or providing supplies or manufactured materials.

D. Certification of MBE/WBE/SDVE Subcontractors:

1. In order to be counted towards the goals, an MBE or WBE must be certified by the State of Missouri Office of Equal Opportunity and an SDVE must be certified by the State of Missouri, Office of Administration, Division of Purchasing and Material Management or by the Department of Veterans Affairs.
2. The Bidder may determine the certification status of a proposed MBE or WBE subcontractor or supplier by referring to the Office of Equal Opportunity (OEO)'s online MBE/WBE directory (<https://apps1.mo.gov/MWBCertifiedFirms/>). The Bidder may determine the eligibility of a SDVE subcontractor or supplier by referring to the Division of Purchasing and Materials Management's online SDVE directory (<https://oa.mo.gov/sites/default/files/sdvelisting.pdf>) or the Department of Veterans Affairs' directory (<https://vetbiz.va.gov/basic-search/>).
3. Additional information, clarifications, etc., regarding the listings in the directories may be obtained by calling the Division at (573)751-3339 and asking to speak to the Contract Specialist of record as shown in the Supplementary Conditions (Section 007300).

E. Waiver of MBE/WBE/SDVE Participation:

1. If a Bidder has made a good faith effort to secure the required MBE, WBE and/or SDVE participation and has failed, the Bidder shall submit with its bid the information requested in MBE/WBE/SDVE Good Faith Effort (GFE) Determination form. The GFE forms are located on the MissouriBUYS solicitation for this project. The Director will determine if the Bidder made a good faith effort to meet the applicable goals. If the Director determines that the Bidder did not make a good faith effort, the bid shall be rejected as being nonresponsive to the bid requirements. Bidders who demonstrate that they have made a good faith effort to include MBE, WBE, and/or SDVE participation will be determined to be responsive to the applicable participation goals, regardless of the percent of actual participation obtained, if the bid is otherwise acceptable.
2. In determining whether a Bidder has made a good faith effort to obtain MBE, WBE and/or SDVE participation, the Director may evaluate the factors set forth in 1 CSR 30-5.010(6)(C) and the following:
  - a. The amount of actual participation obtained;
  - b. How and when the Bidder contacted potential MBE, WBE, and SDVE subcontractors and suppliers;
  - c. The documentation provided by the Bidder to support its contacts, including whether the Bidder provided the names, addresses, phone numbers, and dates of contact for MBE/WBE/SDVE firms contacted for specific categories of work;
  - d. If project information, including plans and specifications, were provided to MBE/WBE/SDVE subcontractors;
  - e. Whether the Bidder made any attempts to follow-up with MBE, WBE or SDVE firms prior to bid;
  - f. Amount of bids received from any of the subcontractors and/or suppliers that the Bidder contacted;
  - g. The Bidder's stated reasons for rejecting any bids;
3. If no bidder has obtained any participation in a particular category (MBE/WBE/SDVE) or made a good faith effort to do so, the Director may waive that goal rather than rebid.

F. Contractor MBE/WBE/SDVE Obligations

1. If awarded a contract, the Bidder will be contractually required to subcontract with or obtain materials from the MBE, WBE, and SDVE firms listed in its bid, in amounts equal to or greater than the dollar amount bid, unless the amount is modified in writing by the Owner.
2. If the Contractor fails to meet or maintain the participation requirements contained in the Contractor's bid, the Contractor must satisfactorily explain to the Director why it cannot comply with the requirement and why failing meeting the requirement was beyond the Contractor's control. If the Director finds the Contractor's explanation unsatisfactory, the Director may take any appropriate action including, but not limited to:
  - a. Declaring the Contractor ineligible to participate in any contracts with the Division for up to twelve (12) months (suspension); and/or
  - b. Declaring the Contractor be non-responsive to the Invitation for Bid, or in breach of contract and rejecting the bid or terminating the contract.
3. If the Contractor replaces an MBE, WBE, or SDVE during the course of this contract, the Contractor shall replace it with another MBE, WBE, or SDVE or make a good faith effort to do so. All MBE, WBE and SDVE substitutions must be approved by the Director.
4. The Contractor shall provide the Owner with regular reports on its progress in meeting its MBE/WBE/SDVE obligations. At a minimum, the Contractor shall report the dollar-value of work completed by each MBE, WBE, or SDVE during the preceding month and the cumulative total of work completed by each MBE, WBE or SDVE to date with each monthly application for payment. The Contractor shall also make a final report, which shall include the total dollar-value of work completed by each MBE, WBE, and SDVE during the entire contract.

**STATE OF MISSOURI  
DIVISION OF FACILITIES MANAGEMENT,  
DESIGN AND CONSTRUCTION  
*MBE/WBE/SDVE DIRECTORIES***

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The MBE/WBE Directory for goods and services is maintained by the Office of Equal Opportunity (OEO) and is located at the following web address:

<https://apps1.mo.gov/MWBCertifiedFirms/>

The SERVICE DISABLED VETERAN ENTERPRISE (SDVE) Directories may be accessed at the following web addresses:

<https://o eo.mo.gov/sdve-certification-program/>

<https://veterans.certify.sba.gov/#search>



# State of Missouri Construction Contract

THIS AGREEMENT is made (DATE) by and between:

## *Contractor Name and Address*

hereinafter called the "Contractor,"

and the **State of Missouri**, hereinafter called the "**Owner**", represented by the Office of Administration, Division of Facilities Management, Design and Construction, on behalf of the Department of the National Guard.

WITNESSETH, that the Contractor and the Owner, for the consideration stated herein agree as follows:

## **ARTICLE 1. STATEMENT OF WORK**

The Contractor shall furnish all labor and materials and perform all work required for furnishing and installing all labor, materials, equipment and transportation and everything necessarily inferred from the general nature and tendency of the plans and specifications for the proper execution of the work for:

**Project Name:**                    **Roof Replacement, Tuckpointing and Interior Repair  
Sikeston Readiness Center  
Sikeston, Missouri**

**Project Number:**            **T2235-01**

in strict accordance with the Contract Documents as enumerated in Article 7, all of which are made a part hereof.

## **ARTICLE 2. TIME OF COMPLETION**

The contract performance time is **160 working days** from the transmittal date of this agreement. The contract completion date is **MONTH, DAY, YEAR**. This time includes ten (10) working days for the Contractor to receive, sign and return the contract form along with required bonding and insurance certificates. Failure of the Contractor to provide correct bonding and insurance within the ten (10) working days shall not be grounds for a time extension. Receipt of proper bonding and insurance is a condition precedent to the formation of the contract and if not timely received, may result in forfeiture of the Contractor's bid security. Work may not commence until the Owner issues a written Notice to Proceed and must commence within seven (7) working days thereafter.

## **ARTICLE 3. LIQUIDATED DAMAGES**

Whenever time is mentioned in this contract, time shall be and is of the essence of this contract. The Owner would suffer a loss should the Contractor fail to have the work embraced in this contract fully completed on or before the time above specified. THEREFORE, the parties hereto realize in order to adjust satisfactorily the damages on account of such failure that it might be impossible to compute accurately or estimate the amount of such loss or damages which the Owner would sustain by reason of failure to complete fully said work within the time required by this contract. The Contractor hereby covenants and agrees to pay the Owner, as and for **liquidated damages, the sum of \$1,000** per day for each and every day, Sunday and legal holidays excepted, during which the work remains incomplete and unfinished. Any sum which may be due the Owner for such damages shall be deducted and retained by the Owner from any balance which may be due the Contractor when said work shall have been finished and accepted. But such provisions shall not release the Bond of the Contractor from liability according to its terms. In case of failure to complete, the Owner will be under no obligation to show or prove any actual or specific loss or damage.

**ARTICLE 4. CONTRACT SUM**

The Owner shall pay the Contractor for the prompt, faithful and efficient performance of the conditions and undertakings of this contract, subject to additions, and deductions as provided herein, in current funds the sum of:

Base Bid: \$  
Alternate No. 1: \$  
Alternate No. 2: \$

**TOTAL CONTRACT AMOUNT: (\$CONTRACT AMOUNT)**

**UNIT PRICES:** The Owner accepts the following Unit Prices:

For changing specified quantities of work from those indicated by the contract drawings and specifications, upon written instructions of Owner, the following unit prices shall prevail. The unit prices include all labor, overhead and profit, materials, equipment, appliances, bailing, shoring, shoring removal, etc., to cover the finished work of the several kinds of work called for. Only a single unit price shall be given and it shall apply for either MORE or LESS work than that shown on the drawings and called for in the specifications or included in the Base Bid. In the event of more or less units than so indicated or included, change orders may be issued for the increased or decreased amount.

**ARTICLE 5. PREVAILING WAGE RATE**

**MISSOURI PREVAILING WAGE LAW (Sections 290.210 to 290.340, RSMo):** The Contractor shall pay not less than the specified hourly rate of wages, as set out in the wage order attached to and made part of the specifications for work under this contract, to all workers performing work under the contract, in accordance with sections 290.210 to 290.340, RSMo. The Contractor shall forfeit a penalty to the Owner of one hundred dollars per day (or portion of a day) for each worker that is paid less than the specified rates for any work done under the contract by the Contractor or by any subcontractor, in accordance with section 290.250, RSMo.

**DAVIS-BACON ACT:** If this Project is financed in whole or in part from Federal funds (as indicated in the Instructions to Bidders or other bid or contract documents for this Project), then this contract shall be subject to all applicable federal labor statutes, rules and regulations, including provisions of the Davis-Bacon Act, 40 U.S.C. §3141 et seq., and the “Federal Labor Standards Provisions,” as further set forth in Section 007333 – Supplementary General Conditions for Federally Funded/Assisted Construction Projects, which is incorporated into the contract by reference. Where the Missouri Prevailing Wage Law and the Davis-Bacon Act require payment of different wages for work performed under this contract, the Contractor and all Subcontractors shall pay the greater of the wages required under either law, on a classification by classification basis.

**ARTICLE 6. MINORITY/WOMEN/SERVICE DISABLED VETERAN BUSINESS ENTERPRISE PARTICIPATION**

The Contractor has been granted a waiver of the 10% MBE and 10% WBE and 3% SDVE participation goals. The Contractor agrees to secure the MBE/WBE/SDVE participation amounts for this project as follows: (OR)

The Contractor has met the MBE/WBE/SDVE participation goals and agrees to secure the MBE/WBE/SDVE participation amounts for this project as follows:

MBE/WBE/SDVE Firm: Subcontract Amt:\$  
MBE/WBE/SDVE Firm: Subcontract Amt:\$  
MBE/WBE/SDVE Firm: Subcontract Amt:\$  
  
Total \$

MBE/WBE/SDVE assignments identified above shall not be changed without a contract change signed by the Owner.



The Director of the Division of Facilities Management, Design and Construction or his Designee shall be the final authority to resolve disputes and disagreements between the Contractor and the MBE/WBE/SDVE firms listed above when such disputes impact the subcontract amounts shown above.

## **ARTICLE 7. CONTRACT DOCUMENTS**

The following documents are hereby incorporated into this contract by reference (all division/section numbers and titles are as utilized in the Project Manual published by the Owner for this Project):

1. Division 0 – Procurement and Contracting Information, including, but not limited to:
  - a. Invitation for Bid (Section 001116)
  - b. Instructions to Bidders (Section 002113)
  - c. Supplementary Instructions to Bidders (if applicable) (Section 002213)
  - d. The following documents as completed and executed by the Contractor and accepted by the Owner, if applicable:
    - i. Bid Form (Section 004113)
    - ii. Unit Prices (Section 004322)
    - iii. Proposed Contractors Form (Section 004336)
    - iv. MBE, WBE, SDVE Compliance Evaluation Form(s) (Section 004337)
    - v. MBE, WBE, SDVE Eligibility Determination Form for Joint Ventures (Section 004338)
    - vi. MBE, WBE, SDVE Good Faith Effort (GFE) Determination Form (Section 004339)
    - vii. Missouri Service Disabled Veteran Business Form (Section 004340)
    - viii. Affidavit of Work Authorization (Section 004541)
    - ix. Affidavit for Affirmative Action (Section 005414)
  - e. Performance and Payment Bond, completed and executed by the Contractor and surety (Section 006113)
  - f. General Conditions (Section 007213)
  - g. Supplementary Conditions (Section 007300)
  - h. Supplementary General Conditions for Federally Funded/Assisted Construction Projects (Section 007333)
  - i. Wage Rate(s) (Section 007346)
2. Division 1 – General Requirements
3. All Drawings identified in the Project Manual
4. All Technical Specifications included in the Project Manual
5. Addenda, if applicable

## **ARTICLE 8 – CERTIFICATION**

By signing this contract, the Contractor hereby re-certifies compliance with all legal requirements set forth in Section 6.0, Bidder’s Certifications of the Bid Form.

Further, if the Contractor provides any “personal information” as defined in §105.1500, RSMo concerning an entity exempt from federal income tax under Section 501(c) of the Internal Revenue Code of 1986, as amended, the Contractor understands and agrees that it is voluntarily choosing to enter into a state contract and providing such information for that purpose. The state will treat such personal information in accord with §105.1500, RSMo.

By signature below, the parties hereby execute this contract document.

### **APPROVED:**

\_\_\_\_\_  
Brian Yansen, Director  
Division of Facilities Management,  
Design and Construction

\_\_\_\_\_  
Contractor’s Authorized Signature



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**AFFIDAVIT FOR AFFIRMATIVE ACTION**

|                |
|----------------|
| PROJECT NUMBER |
|----------------|

|      |
|------|
| NAME |
|------|

First being duly sworn on oath states: that

he/she is the  sole proprietor  partner  officer or  manager or managing member of

|      |
|------|
| NAME |
|------|

a  sole proprietorship  partnership  
 limited liability company (LLC)

or  corporation, and as such, said proprietor, partner, or officer is duly authorized to make this

affidavit on behalf of said sole proprietorship, partnership, or corporation; that under the contract known as

|               |
|---------------|
| PROJECT TITLE |
|---------------|

Less than 50 persons in the aggregate will be employed and therefore, the applicable Affirmative Action requirements as set forth in Article 1.4 of the General Conditions of the State of Missouri have been met.

|                        |
|------------------------|
| PRINT NAME & SIGNATURE |
|------------------------|

|      |
|------|
| DATE |
|------|

|  |
|--|
|  |
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**NOTARY INFORMATION**

|                                       |                                      |                               |                                      |
|---------------------------------------|--------------------------------------|-------------------------------|--------------------------------------|
| NOTARY PUBLIC EMBOSSER SEAL           | STATE OF                             | COUNTY (OR CITY OF ST. LOUIS) | USE RUBBER STAMP IN CLEAR AREA BELOW |
|                                       | SUBSCRIBED AND SWORN BEFORE ME, THIS |                               |                                      |
|                                       | DAY OF                               | YEAR                          |                                      |
|                                       | NOTARY PUBLIC SIGNATURE              | MY COMMISSION EXPIRES         |                                      |
| NOTARY PUBLIC NAME (TYPED OR PRINTED) |                                      |                               |                                      |

**SECTION 006113 - PERFORMANCE AND PAYMENT BOND FORM**

KNOW ALL MEN BY THESE PRESENTS, THAT we \_\_\_\_\_

as principal, and \_\_\_\_\_

\_\_\_\_\_ as Surety, are held and firmly bound unto the

STATE OF MISSOURI. in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_ )

for payment whereof the Principal and Surety bind themselves, their heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

WHEREAS, the Principal has, by means of a written agreement dated the \_\_\_\_\_

day of \_\_\_\_\_, 20\_\_\_\_\_, enter into a contract with the State of Missouri for

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

(Insert Project Title and Number)

NOW, THEREFORE, if the Principal shall faithfully perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the State of Missouri, with or without notice to the Surety and during the life of any guaranty required under the contract; and shall also faithfully perform and fulfill all undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said contract that may hereafter be made with or without notice to the Surety; and shall also promptly make payment for materials incorporated, consumed or used in connection with the work set forth in the contract referred to above, and all insurance premiums, both compensation and all other kinds of insurance, on said work, and for all labor performed on such work, whether by subcontractor or otherwise, at not less than the prevailing hourly rate of wages for work of a similar character (exclusive of maintenance work) in the locality in which the work is performed and not less than the prevailing hourly rate of wages for legal holiday and overtime work (exclusive of maintenance work) in the locality in which the work is performed both as determined by the Department of Labor and Industrial Relations or determined by the Court of Appeal, as provided for in said contract and in any and all duly authorized modifications of said contract that may be hereafter made, with or without notice to the Surety, then, this obligation shall be void and of no effect, but it is expressly understood that if the Principal should make default in or should fail to strictly, faithfully and efficiently do, perform and comply with any or more of the covenants, agreements, stipulations, conditions, requirements or undertakings, as specified in or by the terms of said contract, and with the time therein named, then this obligation shall be valid and binding upon each of the parties hereto and this bond shall remain in full force and effect; and the same may be sued on at the instance of any material man, laborer, mechanic, subcontractor, individual, or otherwise to whom such payment is due, in the name of the State of Missouri, to the use of any such person.

AND, IT IS FURTHER specifically provided that any modifications which may hereinafter be made in the terms of the contract or in the work to be done under it or the giving by the Owner of any extension of the time for the performance of the contract or any other forbearance on the part of either the Owner or the Principal to the other, shall not in any way release the Principal and the Surety, or either or any of them, their heirs, executors, administrators and successors, from their liability hereunder, notice to the Surety of any such extension, modifications or forbearance being hereby waived.

IN WITNESS WHEREOF, the above bounden parties have executed the within instrument this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_.

**AS APPLICABLE:**

**AN INDIVIDUAL**

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

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

**A PARTNERSHIP**

Name of Partner: \_\_\_\_\_

Signature of Partner: \_\_\_\_\_

Name of Partner: \_\_\_\_\_

Signature of Partner: \_\_\_\_\_

**CORPORATION**

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

Signature of President: \_\_\_\_\_

**SURETY**

Surety Name: \_\_\_\_\_

Attorney-in-Fact: \_\_\_\_\_

Address of Attorney-in-Fact: \_\_\_\_\_

Telephone Number of Attorney-in-Fact: \_\_\_\_\_

Signature Attorney-in-Fact: \_\_\_\_\_

**NOTE:** Surety shall attach Power of Attorney



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**PRODUCT SUBSTITUTION REQUEST**

PROJECT NUMBER

PROJECT TITLE AND LOCATION

CHECK APPROPRIATE BOX

- SUBSTITUTION PRIOR TO BID OPENING**  
 (Minimum of (5) working days prior to receipt of Bids as per Article 4 – Instructions to Bidders)
- SUBSTITUTION FOLLOWING AWARD**  
 (Maximum of (20) working days from Notice to Proceed as per Article 3 – General Conditions)

FROM: BIDDER/CONTRACTOR (PRINT COMPANY NAME)

TO: ARCHITECT/ENGINEER (PRINT COMPANY NAME)

Bidder/Contractor hereby requests acceptance of the following product or systems as a substitution in accordance with provisions of Division One of the Bidding Documents:

SPECIFIED PRODUCT OR SYSTEM

SPECIFICATION SECTION NO.

SUPPORTING DATA

- Product data for proposed substitution is attached (include description of product, standards, performance, and test data)
- Sample  Sample will be sent, if requested

**QUALITY COMPARISON**

|              | SPECIFIED PRODUCT | SUBSTITUTION REQUEST |
|--------------|-------------------|----------------------|
| NAME, BRAND  |                   |                      |
| CATALOG NO.  |                   |                      |
| MANUFACTURER |                   |                      |
| VENDOR       |                   |                      |

**PREVIOUS INSTALLATIONS**

| PROJECT  | ARCHITECT/ENGINEER | DATE INSTALLED |
|----------|--------------------|----------------|
| LOCATION |                    |                |

**SIGNIFICANT VARIATIONS FROM SPECIFIED PRODUCT**

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**REASON FOR SUBSTITUTION**

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**DOES PROPOSED SUBSTITUTION AFFECT OTHER PARTS OF WORK?**

YES       NO

IF YES, EXPLAIN

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**SUBSTITUTION REQUIRES DIMENSIONAL REVISION OR REDESIGN OF STRUCTURE OR A/E WORK**

YES       NO

**BIDDER'S/CONTRACTOR'S STATEMENT OF CONFORMANCE OF PROPOSED SUBSTITUTION TO CONTRACT REQUIREMENT:**

We have investigated the proposed substitution. We believe that it is equal or superior in all respects to specified product, except as stated above; that it will provide the same Warranty as specified product; that we have included complete implications of the substitution; that we will pay redesign and other costs caused by the substitution which subsequently become apparent; and that we will pay costs to modify other parts of the Work as may be needed, to make all parts of the Work complete and functioning as a result of the substitution.

BIDDER/CONTRACTOR

DATE

**REVIEW AND ACTION**

Resubmit Substitution Request with the following additional information:

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Substitution is accepted.

Substitution is accepted with the following comments:

---

Substitution is not accepted.

ARCHITECT/ENGINEER

DATE



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**FINAL RECEIPT OF PAYMENT AND RELEASE**

PROJECT NUMBER

KNOW ALL MEN BY THESE PRESENT THAT:                    hereinafter called "Subcontractor" who heretofore entered into an agreement with                    hereinafter called "Contractor", for the performance of work and/or furnishing of material for the construction of the project entitled

(PROJECT TITLE, PROJECT LOCATION, AND PROJECT NUMBER)

at  
 \_\_\_\_\_  
 (ADDRESS OF PROJECT)

for the State of Missouri (Owner) which said subcontract is by this reference incorporated herein, in consideration of such final payment by Contractor.

DOES HEREBY:

1. ACKNOWLEDGE that they have been **PAID IN FULL** all sums due for work and materials contracted or done by their Subcontractors, Material Vendors, Equipment and Fixture Suppliers, Agents and Employees, or otherwise in the performance of the Work called for by the aforesaid Contract and all modifications or extras or additions thereto, for the construction of said project or otherwise.
2. RELEASE and fully, finally, and forever discharge the Owner from any and all suits, actions, claims, and demands for payment for work performed or materials supplied by Subcontractor in accordance with the requirements of the above referenced Contract.
1. REPRESENT that all of their Employees, Subcontractors, Material Vendors, Equipment and Fixture Suppliers, and everyone else has been **paid in full** all sums due them, or any of them, in connection with performance of said Work, or anything done or omitted by them, or any of them in connection with the construction of said improvements, or otherwise.

DATED this            day of            , 20    .

NAME OF SUBCONTRACTOR

BY (TYPED OR PRINTED NAME)

SIGNATURE

TITLE

ORIGINAL: FILE/Closeout Documents





STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT,  
 DESIGN AND CONSTRUCTION

**MBE/WBE/SDVE PROGRESS REPORT**

Remit with ALL Progress and Final Payments

(Please check appropriate box) CONSULTANT CONSTRUCTION

|  |                |
|--|----------------|
| PAY APP NO.  | PROJECT NUMBER |
| CHECK IF FINAL<br><input checked="" type="checkbox"/> <b>FINAL</b> | DATE           |

PROJECT TITLE

PROJECT LOCATION

FIRM

ORIGINAL CONTRACT SUM (Same as Line Item 1. on Form A of Application for Payment)  
\$

TOTAL CONTRACT SUM TO DATE (Same as Line Item 3. on Form A of Application for Payment)  
\$

THE TOTAL MBE/WBE/SDVE PARTICIPATION DOLLAR AMOUNT OF THIS PROJECT AS INDICATED IN THE ORIGINAL CONTRACT: \$

| SELECT MBE, WBE, SDVE   | ORIGINAL CONTRACT PARTICIPATION AMOUNT | PARTICIPATION AMOUNT PAID-TO-DATE (includes approved contract changes) | CONSULTANT/SUBCONSULTANT OR CONTRACTOR/SUBCONTRACTOR/SUPPLIER COMPANY NAME |
|---|--|--|--|
| <input type="checkbox"/> MBE<br><input type="checkbox"/> WBE<br><input type="checkbox"/> SDVE | \$                                     | \$   |  |
| <input type="checkbox"/> MBE<br><input type="checkbox"/> WBE<br><input type="checkbox"/> SDVE | \$                                     | \$   |  |
| <input type="checkbox"/> MBE<br><input type="checkbox"/> WBE<br><input type="checkbox"/> SDVE | \$                                     | \$   |  |
| <input type="checkbox"/> MBE<br><input type="checkbox"/> WBE<br><input type="checkbox"/> SDVE | \$                                     | \$   |  |
| <input type="checkbox"/> MBE<br><input type="checkbox"/> WBE<br><input type="checkbox"/> SDVE | \$                                     | \$   |  |
| <input type="checkbox"/> MBE<br><input type="checkbox"/> WBE<br><input type="checkbox"/> SDVE | \$                                     | \$   |  |



STATE OF MISSOURI  
 OFFICE OF ADMINISTRATION  
 DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION  
**AFFIDAVIT – COMPLIANCE WITH PREVAILING WAGE LAW**

PROJECT NUMBER

Before me, the undersigned Notary Public, in and for the County of \_\_\_\_\_

State of \_\_\_\_\_ personally came and appeared \_\_\_\_\_

(NAME)

of the \_\_\_\_\_

(POSITION)

(NAME OF THE COMPANY)

(a corporation) (a partnership) (a proprietorship) and after being duly sworn did depose and say that all provisions and requirements set out in Chapter 290, Sections 290.210 through and including 290.340, Missouri Revised Statutes, pertaining to the payment of wages to workmen employed on public works project have been fully satisfied and there has been no exception to the full and completed compliance with said provisions and requirements

and with Wage Determination No: \_\_\_\_\_ issued by the

Department of Labor and Industrial Relations, State of Missouri on the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

in carrying out the contract and working in connection with \_\_\_\_\_

(NAME OF PROJECT)

Located at \_\_\_\_\_ in \_\_\_\_\_ County

(NAME OF THE INSTITUTION)

Missouri, and completed on the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_

SIGNATURE

**NOTARY INFORMATION**

NOTARY PUBLIC EMBOSSER OR BLACK INK RUBBER STAMP SEAL

STATE

COUNTY (OR CITY OF ST. LOUIS)

SUBSCRIBED AND SWORN BEFORE ME, THIS

DAY OF

YEAR

**USE RUBBER STAMP IN CLEAR AREA BELOW**

NOTARY PUBLIC SIGNATURE

MY COMMISSION EXPIRES

NOTARY PUBLIC NAME (TYPED OR PRINTED)

# GENERAL CONDITIONS

## INDEX

ARTICLE:

**1. General Provisions**

- 1.1. Definitions
- 1.2. Drawings and Specifications
- 1.3. Compliance with Laws, Permits, Regulations and Inspections
- 1.4. Nondiscrimination in Employment
- 1.5. Anti-Kickback
- 1.6. Patents and Royalties
- 1.7. Preference for American and Missouri Products and Services
- 1.8. Communications
- 1.9. Separate Contracts and Cooperation
- 1.10. Assignment of Contract
- 1.11. Indemnification
- 1.12. Disputes and Disagreements

**2. Owner/Designer Responsibilities**

**3. Contractor Responsibilities**

- 3.1. Acceptable Substitutions
- 3.2. Submittals
- 3.3. As-Built Drawings
- 3.4. Guaranty and Warranties
- 3.5. Operation and Maintenance Manuals
- 3.6. Other Contractor Responsibilities
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- 4.1. Changes in the Work
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- 5.1. Construction Commencement
- 5.2. Project Construction
- 5.3. Project Completion
- 5.4. Payments

**6. Bond and Insurance**

- 6.1. Bond
- 6.2. Insurance

**7. Termination or Suspension of Contract**

- 7.1. For Site Conditions
- 7.2. For Cause
- 7.3. For Convenience

## SECTION 007213 - GENERAL CONDITIONS

- A. These General Conditions apply to each section of these specifications. The Contractor is subject to the provisions contained herein.
- B. The General Conditions are intended to define the relationship of the Owner, the Designer and the Contractor thereby establishing certain rules and provisions governing the operation and performance of the work so that the work may be performed in a safe, orderly, expeditious and workmanlike manner.

## ARTICLE 1 – GENERAL PROVISIONS

### ARTICLE 1.1 - DEFINITIONS

As used in these contract documents, the following terms shall have the meanings and refer to the parties designated in these definitions.

1. **"COMMISSIONER"**: The Commissioner of the Office of Administration.
2. **"CONSTRUCTION DOCUMENTS"**: The "Construction Documents" shall consist of the Project Manual, Drawings and Addenda.
3. **"CONSTRUCTION REPRESENTATIVE"**: Whenever the term "Construction Representative" is used, it shall mean the Owner's Representative at the work site.
4. **"CONTRACTOR"**: Party or parties who have entered into a contract with the Owner to furnish work under these specifications and drawings.
5. **"DESIGNER"**: When the term "Designer" is used herein, it shall refer to the Architect, Engineer, or Consultant of Record specified and defined in Paragraph 2.0 of the Supplemental Conditions, or his duly authorized representative. The Designer may be either a consultant or state employee.
6. **"DIRECTOR"**: Whenever the term "Director" is used, it shall mean the Director of the Division of Facilities Management, Design and Construction or his Designee, representing the Office of Administration, State of Missouri. The Director is the agent of the Owner.
7. **"DIVISION"**: Shall mean the Division of Facilities Management, Design and Construction, State of Missouri.

8. **"INCIDENTAL JOB BURDENS"**: Shall mean those expenses relating to the cost of work, incurred either in the home office or on the job-site, which are necessary in the course of doing business but are incidental to the job. Such costs include office supplies and equipment, postage, courier services, telephone expenses including long distance, water and ice and other similar expenses.
9. **"JOINT VENTURE"**: An association of two (2) or more businesses to carry out a single business enterprise for profit for which purpose they combine their property, capital, efforts, skills and knowledge.
10. **"OWNER"**: Whenever the term "Owner" is used, it shall mean the State of Missouri, acting by and through the Office of Administration, Division of Facilities Management, Design and Construction.
11. **"PROJECT"**: Wherever the term "Project" is used, it shall mean the work required to be completed by the construction contract.
12. **"PROJECT MANUAL"**: The "Project Manual" shall consist of Introductory Information, Invitation for Bid, Instructions to Bidders, Bid Documents, Additional Information, Standard Forms, General Conditions, Supplemental General Conditions, General Requirements and Technical Specifications.
13. **"SUBCONTRACTOR"**: Party or parties who contract under, or for the performance of part or this entire Contract between the Owner and Contractor. The subcontract may or may not be direct with the Contractor.
14. **"WORK"**: All supervision, labor, materials, tool, supplies, equipment, and any incidental operations and/or activities required by or reasonably inferable from the Contract Documents necessary to construct the Project and to produce the results intended by the Contract Documents in a safe, expeditious, orderly, and workmanlike manner, and in the best manner known to each respective trade.
15. **"WORKING DAYS"**: are all calendar days except Saturdays, Sundays and the following holidays: New Year's Day, Martin Luther King, Jr. Day, Lincoln Day, Washington's Birthday (observed), Truman Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Columbus Day, Veterans Day (observed), Thanksgiving Day, Christmas Day.

## ARTICLE 1.2 DRAWINGS AND SPECIFICATIONS

- A. In case of discrepancy between drawings and specifications, specifications shall govern. Should discrepancies in architectural drawings, structural drawings and mechanical drawings occur, architectural drawings shall govern and, in case of conflict between structural and mechanical drawings, structural drawings shall govern.
- B. Specifications are separated into titled divisions for convenience of reference only and to facilitate letting of contracts and subcontracts. The Contractor is responsible for establishing the scope of work for subcontractors, which may cross titled divisions. Neither the Owner nor Designer will establish limits and jurisdiction of subcontracts.
- C. Figured dimensions take precedence over scaled measurements and details over smaller scale general drawings. In the event of conflict between any of the documents contained within the contract, the documents shall take precedence and be controlling in the following sequence: addenda, supplementary general conditions, general conditions, division 1 specifications, technical division specifications, drawings, bid form and instructions to bidders.
- D. Anything shown on drawings and not mentioned in these specifications or vice versa, as well as any incidental work which is obviously necessary to complete the project within the limits established by the drawings and specifications, although not shown on or described therein, shall be performed by the Contractor at no additional cost as a part of his contract.
- E. Upon encountering conditions differing materially from those indicated in the contract documents, the Contractor shall promptly notify the Designer and Construction Representative in writing before such conditions are disturbed. The Designer shall promptly investigate said conditions and report to the Owner, with a recommended course of action. If conditions do materially differ and cause an increase or decrease in contract cost or time required for completion of any portion of the work, a contract change will be initiated as outlined in Article 4 of these General Conditions.
- E. Only work included in the contract documents is authorized, and the Contractor shall do no work other than that described therein or in accordance with appropriately authorized and approved contract changes.

## ARTICLE 1.3 - COMPLIANCE WITH LAWS, PERMITS, REGULATIONS AND INSPECTIONS

- A. Since the Owner is the State of Missouri, municipal or political subdivisions, zoning ordinances, construction codes (other than licensing of trades), and other like ordinances are not applicable to construction on Owner's property, and Contractor will not be required to submit drawings and specifications to any municipal or political subdivision, authority, obtain construction permits or any other licenses (other than licensing of trades) or permits from or submit to inspections by any municipality or political subdivision relating to the construction for this project. All permits or licenses required by municipality or political subdivision for operation on property not belonging to Owner shall be obtained by and paid for by Contractor. Each Contractor shall comply with all applicable laws, ordinances, rules and regulations that pertain to the work of this contract.
- B. Contractors, subcontractors and their employees engaged in the businesses of electrical, mechanical, plumbing, carpentry, sprinkler system work, and other construction related trades shall be licensed to perform such work by the municipal or political subdivision where the project is located, if such licensure is required by local code. Local codes shall dictate the level (master, journeyman, and apprentice) and the number, type and ratio of licensed tradesmen required for this project within the jurisdiction of such municipal or political subdivision.
- C. Equipment and controls manufacturers and their authorized service and installation technicians that do not maintain an office within the jurisdiction of the municipal or political subdivision but are a listed or specified contractor or subcontractor on this project are exempt from Paragraph 1.3 B above.
- D. The Contractor shall post a copy of the wage determination issued for the project and included as a part of the contract documents, in a prominent and easily accessible location at the site of construction for the duration of the project.
- E. Any contractor or subcontractor to such contractor at any tier signing a contract to work on this project shall provide a ten-hour Occupational Safety and Health Administration (OSHA) construction safety program for their on-site employees which includes a course in construction safety and health approved by OSHA or a similar program approved by the Department of Labor and Industrial Relations which is at least as stringent as an approved OSHA program. The contractor shall

forfeit as a penalty to the public body on whose behalf the contract is made or awarded, two thousand five hundred dollars plus one hundred dollars for each employee employed by the contractor or subcontractor, for each calendar day, or portion thereof, such employee is employed without the required training.

#### **ARTICLE 1.4 - NONDISCRIMINATION IN EMPLOYMENT**

A. The Contractor and his subcontractors will not discriminate against individuals based on race, color, religion, national origin, sex, disability, or age, but may use restrictions which relate to bona fide occupational qualifications. Specifically, the Contractor and his subcontractors shall not discriminate:

1. Against recipients of service on the basis of race, color, religion, national origin, sex, disability or age.
2. Against any employee or applicant, for employment on the basis of race, color, religion, national origin, sex or otherwise qualified disability status.
3. Against any applicant for employment or employee on the basis of age, where such applicant or employee is between ages 40 and 70 and where such Contractor employs at least 20 persons.
4. Against any applicant for employment or employee on the basis of that person's status as a disabled or Vietnam-era veteran.

The Contractor and his Subcontractors will take affirmative action to insure applicants for employment and employees are treated equally without regard to race, color, religion, national origin, sex, disability, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion and transfer; recruitment or recruitment advertising; and selection for training, including apprenticeship. The Contractor and his Subcontractors will give written notice of their commitments under this clause to any labor union with which they have bargaining or other agreements.

B. The Contractor and his subcontractors shall develop, implement, maintain and submit in writing to the Owner an affirmative action program if at least fifty (50) persons in the aggregate are employed under this contract. If less than fifty (50) persons in the aggregate are to be employed under this contract, the Contractor shall submit, in lieu of the written affirmative action program, a properly executed Affidavit for Affirmative Action

in the form included in the contract specifications. For the purpose of this section, an "affirmative action program" means positive action to influence all employment practices (including, but not limited to, recruiting, hiring, promoting and training) in providing equal employment opportunity regardless of race, color, sex, national origin, religion, age (where the person affected is between age 40 and 70), disabled and Vietnam-era veteran status, and disability. Such "affirmative action program" shall include:

1. A written policy statement committing the total organization to affirmative action and assigning management responsibilities and procedures for evaluation and dissemination;
2. The identification of a person designated to handle affirmative action;
3. The establishment of non-discriminatory selection standards, objective measures to analyze recruitment, an upward mobility system, a wage and salary structure, and standards applicable to lay-off, recall, discharge, demotion and discipline;
4. The exclusion of discrimination from all collective bargaining agreements; and
5. Performance of an internal audit of the reporting system to monitor execution and to provide for future planning.

In the enforcement of this non-discrimination clause, the Owner may use any reasonable procedures available, including, but not limited to: requests, reports, site visits and inspection of relevant documents of contractors and subcontractors.

C. In the event of the Contractor's or his subcontractor's noncompliance with any provisions of this Article of the Contract, the Owner may cancel this contract in whole or in part or require the Contractor to terminate his contract with the subcontractor.

#### **ARTICLE 1.5 - ANTI-KICKBACK**

No employee of the division, shall have or acquire any pecuniary interest, whether direct or indirect, in this contract or in any part hereof. No officer, employee, designer, attorney, or administrator of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the project, shall have or acquire any pecuniary interest, whether direct or indirect, in this contract, any material supply contract, subcontract,

insurance contract, or any other contract pertaining to the project.

#### **ARTICLE 1.6 - PATENTS AND ROYALTIES**

- A. The Contractor shall hold and save the Owner and its officers, agents, servants and employees harmless from liabilities of any nature or kind, including cost and expenses, for, or on account of, any patented or unpatented invention, process, article or appliance manufactured or used in the performance of this contract, including its use by the Owner, unless otherwise specifically stipulated in the contract documents.
- B. If the Contractor uses any design, device or materials covered by letters, patent or copyright, the Contractor shall provide for such use by suitable agreement with the Owner of such patented or copyrighted design, device or material. It is mutually agreed and understood, without exception, that the contract prices shall include all royalties or costs arising from the use of such design, device or materials, in any way involved in the work. The Contractor and/or his sureties shall indemnify and save harmless the Owner of the project from any and all claims for infringement by reason of the use of such patented or copyrighted design, device or materials or any trademark or copyright in connection with work agreed to be performed under this contract and shall indemnify the Owner for any cost, expense or damage it may be obliged to pay by reason of such infringement at any time during the prosecution of the work or after completion of the work.

#### **ARTICLE 1.7 - PREFERENCE FOR AMERICAN AND MISSOURI PRODUCTS AND SERVICES**

- A. By virtue of statutory authority a preference will be given to Missouri labor and to products of mines, forests and quarries of the state of Missouri when they are found in marketable quantities in the state, and all such materials shall be of the best quality and suitable character that can be obtained at reasonable market prices, all as provided for in Section 8.280, Missouri Revised Statutes and Cumulative Supplements.
- B. Furthermore, pursuant to Section 34.076 Missouri Revised Statutes and Cumulative Supplements, a preference shall be given to those persons doing business as Missouri firms, corporations, or individuals, or which maintain Missouri offices or places of business, when the quality of performance promised is equal or better and the price quoted is the same or less. In addition, in order for a non-domiciliary bidder to be successful, his bid must be that same percentage lower than a domiciliary Missouri bidder's bid, as would be

required for a Missouri bidder to successfully bid in the non-domiciliary state.

- C. In accordance with the Missouri Domestic Products Procurement Act Section 34.350 RSMo and Cumulative Supplements any manufactured goods or commodities used or supplied in the performance of this contract or any subcontract thereto shall be manufactured, assembled or produced in the United States, unless the specified products are not manufactured, assembled or produced in the United States in sufficient quantities to meet the agency's requirements or cannot be manufactured, assembled or produced in the United States within the necessary time in sufficient quantities to meet the contract requirements, or if obtaining the specified products manufactured, assembled or produced in the United States would increase the cost of this contract for purchase of the product by more than ten percent.

#### **ARTICLE 1.8 - COMMUNICATIONS**

- A. All notices, requests, instructions, approvals and claims must be in writing and shall be delivered to the Designer and copied to the Construction Representative for the project except as required by Article 1.12 Disputes and Disagreements, or as otherwise specified by the Owner in writing as stated in Section 012600. Any such notice shall be deemed to have been given as of the time of actual receipt.
- B. The Contractor shall attend on-site progress and coordination meetings, as scheduled by the Construction Representative, no less than once a month.
- C. The Contractor shall ensure that major subcontractors and suppliers shall attend monthly progress meetings as necessary to coordinate the work, and as specifically requested by the Construction Representative.

#### **ARTICLE 1.9 - SEPARATE CONTRACTS AND COOPERATION**

- A. The Owner reserves the right to let other contracts in connection with this work. The Contractor shall afford other contractors reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate his work with theirs.
- B. The Contractor shall consult the drawings for all other contractors in connection with this work. Any work conflicting with the above shall be brought to the attention of the Owner's Representative before the work is performed. If the Contractor fails to do this, and constructs any



work which interferes with the work of another contractor, the Contractor shall remove any part so conflicting and rebuild same, as directed by the Owner's Representative at no additional cost to the Owner.

- C. Each contractor shall be required to coordinate his work with other contractors so as to afford others reasonable opportunity for execution of their work. No contractor shall delay any other contractor by neglecting to perform contract work at the proper time. If any contractor causes delay to another, they shall be liable directly to that contractor for such delay in addition to any liquidated damages which might be due the Owner.
- D. Should the Contractor or project associated subcontractors refuse to cooperate with the instructions and reasonable requests of other Contractors or other subcontractors in the overall coordinating of the work, the Owner may take such appropriate action and issue directions, as required, to avoid unnecessary and unwarranted delays.
- E. Each Contractor shall be responsible for damage done to Owner's or other Contractor's property by him/her or workers in his employ through their fault or negligence.
- F. Should a Contractor sustain any damage through any act or omission of any other Contractor having a contract with the Owner, the Contractor so damaged shall have no claim or cause of action against the Owner for such damage, but shall have a claim or cause of action against the other Contractor to recover any and all damages sustained by reason of the acts or omissions of such Contractor. The phrase "acts or omissions" as used in this section shall be defined to include, but not be limited to, any unreasonable delay on the part of any such contractors.

#### **ARTICLE 1.10 - ASSIGNMENT OF CONTRACT**

- A. No assignment by Contractor of any amount or any part of this contract or of the funds to be received there under will be recognized unless such assignment has had the written approval of the Director and the surety has been given due notice of such assignment and has furnished written consent thereto. In addition to the usual recitals in assignment contracts, the following language must be set forth: "It is agreed that the funds to be paid to the assignee under this assignment are subject to performance by the Contractor of this contract and to claims or liens for services rendered or materials supplied for the performance of the work called for in said contract in favor of all persons, firms or corporations rendering such services or supplying such materials."

#### **ARTICLE 1.11 - INDEMNIFICATION**

- A. Contractor agrees to indemnify and save harmless Owner and its respective commissioners, officers, officials, agents, consultants and employees and Designer, their agents, servants and employees, from and against any and all liability for damage arising from injuries to persons or damage to property occasioned by any acts or omissions of Contractor, any subcontractors, agents, servants or employees, including any and all expense, legal or otherwise, which may be incurred by Owner or Designer, its agents, servants or employees, in defense of any claim, action or suit.
- B. The obligations of the Contractor under this paragraph shall not extend to the liability of the Designer, his agents or employees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, contract changes, design or specifications, or (2) giving of or the failure to give directions or instructions by the Designer, his agents or employees as required by this contract documents provided such giving or failure to give is the primary cause of the injury or damage.

#### **ARTICLE 1.12 - DISPUTES AND DISAGREEMENTS**

It is hereby expressly agreed and understood that in case any controversy or difference of opinion arises during construction, best efforts will be given to resolution at the field level. Should those efforts be unsuccessful, the Contractor has the right to appeal in writing, the decision of the Director's Designee to the Director at Room 730 Truman Building, P.O. Box 809, Jefferson City, Missouri 65102. The decision of the Director shall be final and binding on all parties.

#### **ARTICLE 2 -- OWNER/DESIGNER RESPONSIBILITIES**

- A. The Owner shall give all orders and directions contemplated under this contract relative to the execution of the work. During progress of work the Owner will be represented at the project site by the Construction Representative and/or Designer, whose responsibilities are to see that this contract is properly fulfilled.
- B. The Owner shall at all times have access to the work whenever it is in preparation or progress. The Contractors shall provide proper facilities for such access and for inspection and supervision.
- C. All materials and workmanship used in the work shall be subject to the inspection of the Designer and Construction Representative, and any work which is deemed defective shall be removed, rebuilt or made good immediately upon notice.

The cost of such correction shall be borne by the Contractor. Contractor shall not be entitled to an extension of the contract completion date in order to remedy defective work. All rejected materials shall be immediately removed from the site of the work.

- D. If the Contractor fails to proceed at once with the correction of rejected defective materials or workmanship, the Owner may, by separate contract or otherwise, have the defects remedied or rejected. Materials removed from the site and charge the cost of the same against any monies which may be due the Contractor, without prejudice to any other rights or remedies of the Owner.
- E. Failure or neglect on the part of Owner to observe faulty work, or work done which is not in accordance with the drawings and specifications shall not relieve the Contractor from responsibility for correcting such work without additional compensation.
- F. The Owner shall have the right to direct the Contractor to uncover any completed work.
  - 1. If the Contractor fails to adequately notify the Construction Representative and/or Designer of an inspection as required by the Contract Documents, the Contractor shall, upon written request, uncover the work. The Contractor shall bear all costs associated with uncovering and again covering the work exposed.
  - 2. If the Contractor is directed to uncover work, which was not otherwise required by the Contract Documents to be inspected, and the work is found to be defective in any respect, no compensation shall be allowed for this work. If, however, such work is found to meet the requirements of this contract, the actual cost of labor and material necessarily involved in the examination and replacement plus 10% shall be allowed the Contractor.
- G. The Designer shall give all orders and directions contemplated under this contract relative to the scope of the work and shall give the initial interpretation of the contract documents.
- H. The Owner may file a written notice to the Contractor to dismiss immediately any subcontractors, project managers, superintendents, foremen, workers, watchmen or other employees whom the Owner may deem incompetent, careless or a hindrance to proper or timely execution of the work. The Contractor shall comply with such notice as promptly as practicable without detriment to the work or its progress.

- I. If in the Owner's judgment it becomes necessary at any time to accelerate work, when ordered by the Owner in writing, the Contractor shall redirect resources to such work items and execute such portions of the work as may be required to complete the work within the current approved contract schedule.

### **ARTICLE 3 -- CONTRACTOR RESPONSIBILITIES**

The Contractor shall register and utilize the Owner's eBuilder digital project management system for submission of documents described in the following sections. This includes but is not limited to submittals as required by designer, payment applications, Request for Information (RFI), construction change orders, Request for Proposals (RFP), Designer Supplemental Instructions (DSI), etc.

#### **ARTICLE 3.1 -- ACCEPTABLE SUBSTITUTIONS**

- A. The Contractor may request use of any article, device, product, material, fixture, form or type of construction which in the judgment of the Owner and Designer is equal in all respects to that named. Standard products of manufacturers other than those specified will be accepted when, prior to the ordering or use thereof, it is proven to the satisfaction of the Owner and Designer that they are equal in design, strength, durability, usefulness and convenience for the purpose intended.
- B. Any changes required in the details and dimensions indicated on the drawings for the substitution of products other than those specified shall be properly made at the expense of the Contractor requesting the substitution or change.
- C. The Contractor shall submit a request for such substitutions in writing to the Owner and Designer within twenty (20) working days after the date of the "Notice to Proceed." Thereafter no consideration will be given to alternate forms of accomplishing the work. This Article does not preclude the Owner from exercising the provisions of Article 4 hereof.
- D. Any request for substitution by the Contractor shall be submitted in accordance with SECTION 002113 - INSTRUCTIONS TO BIDDERS.
- E. When a material has been approved, no change in brand or make will be permitted unless:
  - 1. Written verification is received from the manufacturer stating they cannot make delivery on the date previously agreed, or
  - 2. Material delivered fails to comply with contract requirements.

**ARTICLE 3.2 -- SUBMITTALS**

- A. The Contractor’s submittals must be submitted with such promptness as to allow for review and approval so as not to cause delay in the work. The Contractor shall coordinate preparation and processing of submittals with performance of construction activities.

Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

Submit four (4) copies to the Designer and additional copies as required for the subcontractors and material suppliers. Also provide copies to meet the requirements for maintenance manuals.

- B. All subcontractors' shop drawings and schedules shall be submitted by the Contractor and shall bear evidence that Contractor has received, reviewed, and approved them. Any shop drawings and schedules submitted without this evidence will be returned to the Contractor for resubmission.
- C. The Contractor shall include with the shop drawing, a letter indicating any and all deviations from the drawings and/or specifications. Failure to notify the Designer of such deviations will be grounds for subsequent rejection of the related work or materials. If, in the opinion of the Designer, the deviations are not acceptable, the Contractor will be required to furnish the item as specified and indicated on the drawings.
- D. The Designer shall check shop drawings and schedules with reasonable promptness and approve them only if they conform to the design concept of the project and comply with the information given in the contract documents. The approval shall not relieve the Contractor from the responsibility to comply with the drawings and specifications, unless the Contractor has called the Designer's attention to the deviation, in writing, at the time of submission and the Designer has knowingly approved thereof. An approval of any such modification will be given only under the following conditions:
  - 1. It is in the best interest of the Owner
  - 2. It does not increase the contract sum and/or completion time
  - 3. It does not deviate from the design intent
  - 4. It is without prejudice to any and all rights under the surety bond.
- E. No extension of time will be granted because of the Contractor's failure to submit shop drawings and schedules in ample time to allow for review,

possible resubmission, and approval. Fabrication of work shall not commence until the Contractor has received approval. The Contractor shall furnish prints of approved shop drawings and schedules to all subcontractors whose work is in any way related to the work under this contract. Only prints bearing this approval will be allowed on the site of construction

- F. The Contractor shall maintain a complete file on-site of approved shop drawings available for use by the Construction Representative.

**ARTICLE 3.3 – AS-BUILT DRAWINGS**

- A. The Contractor shall update a complete set of the construction drawings, shop drawings and schedules of all work monthly by marking changes, and at the completion of their work (prior to submission of request for final payment) note all changes and turn the set over to the Construction Representative. The updates shall show all addenda, all field changes that were made to adapt to field conditions, changes resulting from contract changes or supplemental instructions, and all locations of structures, buried installations of piping, conduit, and utility services. All buried and concealed items both inside and outside shall be accurately located as to depth and referenced to permanent features such as interior or exterior wall faces and dimensions shall be given in a neat and legible manner in a contrasting colored pencil or ink. If approved by the Designer, an electronic file format may be provided.

**ARTICLE 3.4 – GUARANTY AND WARRANTIES**

- A. General Guaranty
  - 1. Neither the final certificate of payment nor any provision in the contract documents nor partial use or occupancy of the premises by the Owner shall constitute an acceptance of work not done in accordance with contract requirements.
  - 2. The Contractor or surety shall remedy any defects in the work and pay for any damage to property resulting there from which shall appear within a period of one (1) year from the date of substantial completion unless a longer period is otherwise specified or a differing guaranty period has been established in the substantial completion certificate. The Owner will give notice of observed defects with reasonable promptness.
  - 3. In case of default on the part of the Contractor in fulfilling this part of this contract, the Owner may correct the work or repair the

damage and the cost and expense incurred in such event shall be paid by or recoverable from the Contractor or surety.

4. The work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's guaranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear under normal usage. If required by the Owner, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment

**B. Extended Warranty**

Manufacturer's certificates of warranty shall be obtained for all major equipment. Warranty shall be obtained for at least one year. Where a longer period is offered at no additional cost or called for in the specific equipment specifications, the longer period shall govern.

**ARTICLE 3.5 -- OPERATION AND MAINTENANCE MANUALS**

- A. Immediately after equipment submittals are approved and no later than ten (10) working days prior to the substantial completion inspection, the Contractor shall provide to the Designer three (3) copies of operating instructions and service manuals, containing the following:

1. Start-up and Shut-down Procedures: Provide a step-by-step write up of all major equipment. When manufacturer's printed start-up, trouble shooting and shut-down procedures are available; they may be incorporated into the operating manual for reference.
2. Operating Instructions: Written operating instructions shall be included for the efficient and safe operation of all equipment.
3. Equipment List: List of all major equipment as installed shall be prepared to include model number, capacities, flow rate, name place data, shop drawings and air and water balance reports.
4. Service Instructions: Provide the following information for all pieces of equipment.

- a. Recommended spare parts including catalog number and name of local supplier or factory representative.
- b. Belt sizes, types, and lengths.
- c. Wiring diagrams.

5. Manufacturer's Certificate of Warranty as described in Article 3.4.

6. Prior to the final payment, furnish to the Designer three (4) copies of parts catalogs for each piece of equipment furnished by him/her on the project with the components identified by number for replacement ordering.

- B. Submission of operating instructions shall be done in the following manner.

1. Manuals shall be in quadruplicate, and all materials shall be bound into volumes of standard 8½" x 11" hard binders. Large drawings too bulky to be folded into 8½" x 11" shall be separately bound or folded and in envelopes, cross referenced and indexed with the manuals.
2. The manuals shall identify project name, project number, and include the name and address of the Contractor, subcontractors and manufacturers who were involved with the activity described in that particular manual.
3. Internally subdivide the binder contents with permanent page dividers, logically organized with tab titles clearly printed under reinforced laminated plastic tabs.
4. Contents: Prepare a Table of Contents for each volume, with each product or system description identified.

**ARTICLE 3.6 – OTHER CONTRACTOR RESPONSIBILITIES**

- A. The Contractor shall keep on site, during progress of the work, a competent superintendent satisfactory to the Construction Representative. The superintendent shall represent the Contractor and all agreements made by the superintendent shall be binding. The superintendent shall carefully study and compare all drawings, specifications and other instructions and shall promptly notify the Construction Representative and Designer, in writing, any error, inconsistency or omission which may be discovered. The superintendent shall coordinate all work on the project. Any change of the superintendent shall be approved by the Construction Representative.
- B. Contractor shall, at all times, enforce strict discipline and good order among his employees,

and shall not employ on the work any unfit person or anyone not skilled in the work assigned to him/her.

- C. The Contractor shall supply sufficient labor, material, plant and equipment and pay when due any laborer, subcontractor or supplier for supplies furnished and otherwise prosecute the work with diligence to prevent work stoppage and insure completion thereof within the time specified.
- D. The Contractor and each of his subcontractors shall submit to the Construction Representative, through the Designer such schedules of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data as the Owner may request concerning work performed or to be performed under this contract.
- E. The Contractor, subcontractors, and material suppliers shall upon written request, give the Owner access to all time cards, material invoices, payrolls, estimates, profit and loss statements, and all other direct or indirect costs related to this work.
- F. The Contractor shall be responsible for laying out all contract work such as layout of architectural, structural, mechanical and electrical work, which shall be coordinated with layouts of subcontractors for general construction work. The Contractor is also responsible for unloading, uncrating and handling of all materials and equipment to be erected or placed by him/her, whether furnished by Contractor or others. No extra charges or compensation will be allowed as a result of failure to verify dimensions before ordering materials or fabricating items.
- G. The Contractor must notify the Construction Representative at least one working day before placing concrete or burying underground utilities, pipelines, etc.
- H. Contractors shall prearrange time with the Construction Representative for the interruption of any facility operation. Unless otherwise specified in these documents, all connections, alterations or relocations as well as all other portions of the work will be performed during normal working hours.
- I. The Contractor shall coordinate all work so there will not be prolonged interruptions of existing equipment operation. Any existing plumbing, heating, ventilating, air conditioning or electrical disconnections necessary for the project, which affect portions of this construction or building or any other building must be scheduled with the Construction Representative to minimize or avoid any disruption of facility operations. In no case,

unless previously approved in writing by the Construction Representative, shall utilities be left disconnected at the end of a work day or over a weekend. Any interruption of utilities either intentionally or accidentally shall not relieve the Contractor responsible for the interruption from the responsibility to repair and restore the utility to normal service. Repairs and restoration shall be made before the workers responsible for the repair and restoration leave the job.

- J. Contractors shall limit operations and storage of materials to the area within the project, except as necessary to connect to existing utilities, and shall not encroach on neighboring property. The Contractor shall be responsible for repair of their damage to property on or off the project site occurring during construction of project. All such repairs shall be made to the satisfaction of the property owner.
- K. Unless otherwise permitted, all materials shall be new and both workmanship and materials shall be of the best quality.
- L. Unless otherwise provided and stipulated within these specifications, the Contractor shall furnish, construct, and/or install and pay for materials, devices, mechanisms, equipment, all necessary personnel, utilities including, but not limited to water, heat, light and electric power, transportation services, applicable taxes of every nature, and all other facilities necessary for the proper execution and completion of the work.
- M. Contractor shall carefully examine the plans and drawings and shall be responsible for the proper fitting of his material, equipment and apparatus into the building.
- N. The Contractor or subcontractors shall not overload, or permit others to overload, any part of any structure during the performance of this contract.
- O. All temporary shoring, bracing, etc., required for the removal of existing work and/or for the installation of new work shall be included in this contract. The Contractor shall make good, at no cost to the Owner, any damage caused by improper support or failure of shoring in any respect. Each Contractor shall be responsible for shoring required to protect his work or adjacent property and improvements of Owner and shall be responsible for shoring or for giving written notice to adjacent property owners. Shoring shall be removed only after completion of permanent supports.

- P. The Contractor shall provide at the proper time such material as is required for support of the work. If openings are required, whether shown on drawings or not, the Contractor shall see that they are properly constructed.
- Q. During the performance of work the Contractor shall be responsible for providing and maintaining warning signs, lights, signal devices, barricades, guard rails, fences and other devices appropriately located on site which will give proper and understandable warning to all persons of danger of entry onto land, structure or equipment.
- R. The Contractor shall be responsible for protection, including weather protection, and proper maintenance of all equipment and materials.
- S. The Contractor shall be responsible for care of the finished work and shall protect same from damage or defacement until substantial completion by the Owner. If the work is damaged by any cause, the Contractor shall immediately begin to make repairs in accordance with the drawings and specifications. Contractor shall be liable for all damage or loss unless attributable to the acts or omissions of the Owner or Designer. Any claim for reimbursement shall be submitted in accordance with Article 4. After substantial completion the Contractor will only be responsible for damage resulting from acts or omissions of the Contractor or subcontractors through final warranty.
- T. In the event the Contractor encounters an unforeseen hazardous material, the Contractor shall immediately stop work in the area affected and report the condition to the Owner and Designer in writing. The Contractor shall not be required, pursuant to Article 4, to perform, any work relating to hazardous materials.
- U. In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 4.
- V. Before commencing work, Contractors shall confer with the Construction Representative and facility representative and review any facility rules and regulations which may affect the conduct of the work.
- W. Project signs will only be erected on major projects and only as described in the specifications. If no sign is specified, none shall be erected.

## **ARTICLE 3.7 -- SUBCONTRACTS**

- A. Subcontractor assignments as identified in the bid form shall not be changed without written approval of the Owner. The Owner will not approve changes of a listed subcontractor unless the Contractor documents, to the satisfaction of the Owner that the subcontractor cannot or will not perform the work as specified.
- B. The Contractor is fully responsible to the Owner for the acts and omissions of all subcontractors and of persons either directly or indirectly employed by them.
- C. Every subcontractor shall be bound by the applicable terms and provisions of these contract documents, but no contractual relationship shall exist between any subcontractor and the Owner unless the right of the Contractor to proceed with the work is suspended or this contract is terminated as herein provided, and the Owner in writing elects to assume the subcontract.
- D. The Contractor shall upon receipt of "Notice to Proceed" and prior to submission of the first payment request, notify the Designer and Construction Representative in writing of the names of any subcontractors to be used in addition to those identified in the bid form and all major material suppliers proposed for all parts of the work.

## **ARTICLE 4 -- CHANGES IN THE WORK**

### **4.1 CHANGES IN THE WORK**

- A. The Construction Representative, without giving notice to the surety and without invalidating this contract, may order extra work or make changes by altering, adding to or deducting from the work, this contract sum being adjusted accordingly. All such work shall be executed under the conditions of the original contract. A claim for extension of time caused by any change must be adjusted at the time of ordering such change. No future request for time will be considered.
- B. Each Contract Change shall include all costs required to perform the work including all labor, material, equipment, overheads and profit, delay, disruptions, or other miscellaneous expenses. No subsequent requests for additional compensation including claims for delay, disruption, or reduced efficiency as a result of each change will be considered. Values from the Schedule of Values will not be binding as a basis for additions to or deductions from the contract price.
- C. The amount of any adjustment in this contract price for authorized changes shall be agreed upon

before such changes become effective and shall be determined, through submission of a request for proposal, as follows:

1. By an acceptable fixed price proposal from the Contractor. Breakdowns shall include all takeoff sheets of each Contractor and subcontractor. Breakdown shall include a listing of each item of material with unit prices and number of hours of labor for each task. Labor costs per hour shall be included with labor burden identified, which shall be not less than the prevailing wage rate, etc. Overhead and profit shall be shown separately for each subcontractor and the Contractor.
2. By a cost-plus-fixed-fee (time and material) basis with maximum price, total cost not to exceed said maximum. Breakdown shall include a listing of each item of material with unit prices and number of hours of labor for each task. Labor costs per hour shall be included with labor burden identified, which shall be not less than the prevailing wage rate, etc. Overhead and profit shall be shown separately for each subcontractor and the Contractor.
3. By unit prices contained in Contractor's original bid form and incorporated in the construction contract.

D. Overhead and Profit on Contract Changes shall be applied as follows:

1. The overhead and profit charge by the Contractor and all subcontractors shall be considered to include, but is not limited to: incidental job burdens, small truck (under 1 ton) expense, mileage, small hand tools, warranty costs, company benefits and general office overhead. Project supervision including field supervision and job site office expense shall be considered a part of overhead and profit unless a compensable time extension is granted.
2. The percentages for overhead and profit charged on Contract Changes shall be subject to the following limits: (a) the percentage mark-up for the Contractor shall be limited to the Contractor's fee; (b) fifteen percent (15%) maximum for Work directly performed by employees of a subcontractor, or sub-subcontractor; (c) five percent (5%) maximum for the Work performed or passed through to the Owner by the Contractor; (d) five percent (5%) maximum subcontractor's mark-up for Work performed by a sub-subcontractor and

passed through to the Owner by the subcontractor and Contractor; and (e) in no case shall the total overhead and profit paid by the Owner on any Contract Changes exceed twenty-five percent (25%) of the cost of materials, labor and equipment (exclusive of Contractor or any Subcontractor overhead and profit) necessary to put the contract change work in place.

3. The Contractor will be allowed to add the cost of Contractor's payment and performance bonding, builder's risk insurance, and general liability insurance to their cost of work. The above listed bonding and insurance cost shall not exceed 2% and shall be allowed on the total cost of the added work, including overhead and profit.
  4. On proposals covering both increases and decreases in the amount of this contract, the application of overhead and profit shall be on the net change in the cost of the work.
  5. The percentage(s) for overhead and profit to be credited to the Owner on Contract Changes that are solely decreases in the quantity of work or materials shall be the same as those for additive Contract Changes provided above.
- E. No claim for an addition to this contract sum shall be valid unless authorized as aforesaid in writing by the Owner. In the event that none of the foregoing methods are agreed upon, the Owner may order the Contractor to perform work on a time and material basis. The cost of such work shall be determined by the Contractor's actual labor and material cost to perform the work plus overhead and profit as outlined herein. The Designer and Construction Representative shall approve the Contractor's daily time and material invoices for the work involved.
- F. If the Contractor claims that any instructions involve extra cost under this contract, the Contractor shall give the Owner's Representative written notice thereof within a reasonable time after the receipt of such instructions, and in any event before proceeding to execute the work. No such claim shall be valid unless so made and authorized by the Owner, in writing.
- G. In an emergency affecting the safety of life or of the structure or of adjoining property, the Contractor, without special instruction or authorization from the Construction Representative, is hereby permitted to act at their discretion to prevent such threatened loss or injury. The Contractor shall submit a claim for

compensation for such emergency work in writing to the Owner's Representative.

#### **ARTICLE 4.2 – CHANGES IN COMPLETION TIME**

- A. Extension of the number of work days stipulated in the Contract for completion of the work with compensation may be made when:
  - 1. The contractor documents that proposed Changes in the work, as provided in Article 4.1, extends construction activities critical to contract completion date, OR
  - 2. The Owner suspends all work for convenience of the Owner as provided in Article 7.3, OR
  - 3. An Owner caused delay extends construction activities critical to contract completion (except as provided elsewhere in these General Conditions). The Contractor is to review the work activities yet to begin and evaluate the possibility of rescheduling the work to minimize the overall project delay.
- B. Extension of the number of work days stipulated in the Contract for completion of the work without compensation may be made when:
  - 1. Weather-related delays occur, subject to provisions for the inclusion of a specified number of "bad weather" days when provided for in Section 012100-Allowances, OR
  - 2. Labor strikes or acts of God occur, OR
  - 3. The work of the Contractor is delayed on account of conditions which were beyond the control of the Contractor, subcontractors or suppliers, and were not the result of their fault or negligence.
- C. No time extension or compensation will be provided for delays caused by or within the control of the Contractor, subcontractors or suppliers and for concurrent delays caused by the Owner.
- D. The Contractor shall notify the Owner promptly of any occurrence or conditions which in the Contractor's opinion results in a need for an extension of time. The notice shall be in writing and shall include all necessary supporting materials with details of any resultant costs and be submitted in time to permit full investigation and evaluation of the Contractor's claim. The Owner shall promptly acknowledge the Contractor's notice and, after recommendation from the Owner's Representative and/or Designer, shall provide a decision to the Contractor. Failure on the part of the Contractor to provide such notice and to detail the costs shall constitute a waiver by

the Contractor of any claim. Requests for extensions of time shall be for working days only.

#### **ARTICLE 5 - CONSTRUCTION AND COMPLETION**

##### **ARTICLE 5.1 – CONSTRUCTION COMMENCEMENT**

- A. Upon receipt of the "Intent to Award" letter, the Contractor must submit the following properly executed instruments to the Owner:
    - 1. Contract;
    - 2. Performance/payment bond as described in Article 6.1;
    - 3. Certificates of Insurance, or the actual policies themselves, showing that the Contractor has obtained the insurance coverage required by Article 6.2.
    - 4. Written Affirmative Action Plans as required in Article 1.4.
- Above referenced items must be received by the Owner within ten (10) working days after the effective date of the contract. If not received, the Owner may treat the failure to timely submit them as a refusal by the Contractor to accept a contract for this work and may retain as liquidated damages the Contractor's bid bond, cashier's check or certified check as provided in the Instructions to Bidders. Upon receipt the Owner will issue a "Notice to Proceed" with the work to the Contractor.
- B. Within the time frame noted in Section 013200 - Schedules, following receipt of the "Notice to Proceed", the Contractor shall submit to the Owner a progress schedule and schedule of values, showing activities through the end of the contract period. Should the Contractor not receive written notification from the Owner of the disapproval of the schedule of values within fifteen (15) working days, the Contractor may consider it approved for purpose of determining when the first monthly Application and Certification for Payment may be submitted.
  - C. The Contractor may commence work upon receipt of the Division of Facilities Management, Design and Construction's "Notice to Proceed" letter. Contractor shall prosecute the work with faithfulness and energy, and shall complete the entire work on or before the completion time stated in the contract documents or pay to the Owner the damages resulting from the failure to timely complete the work as set out within Article 5.4.



## ARTICLE 5.2 -- PROJECT CONSTRUCTION

- A. Each Contractor shall submit for the Owner's approval, in reproducible form, a progress schedule showing the rate of progress and the order of the work proposed to carry on various phases of the project. The schedule shall be in conformance with the requirements outlined in Section 013200 – Schedules.
- B. Contractor shall employ and supply a sufficient force of workers, material, and equipment and shall pay when due, any worker, subcontractor or supplier and otherwise prosecute the work with such diligence so as to maintain the rate of progress indicated on the progress schedule, prevent work stoppage, and insure completion of the project within the time specified.

## ARTICLE 5.3 -- PROJECT COMPLETION

- A. Substantial Completion. A Project is substantially complete when construction is essentially complete and work items remaining to be completed can be done without interfering with the Owner's ability to use the Project for its intended purpose.
  1. Once the Contractor has reached what they believe is Substantial Completion, the Contractor shall notify the Designer and the Construction Representative of the following:
    - a. That work is essentially complete with the exception of certain listed work items. The list shall be referred to as the "Contractor's Punch."
    - b. That all Operation and Maintenance Manuals have been assembled and submitted in accordance with Article 3.5A.
    - c. That the Work is ready for inspection by the Designer and Construction Representative. The Owner shall be entitled to a minimum of ten working days notice before the inspection shall be performed.
  2. If the work is acceptable, the Owner shall issue a Certificate of Substantial Completion, which shall set forth the responsibilities of the Owner and the Contractor for utilities, security, maintenance, damage to the work and risk of loss. The Certificate shall also identify those remaining items of work to be performed by the Contractor. All such work items shall be complete within 30 working days of the date of the Certificate, unless the Certificate specifies a different time. If the

Contractor shall be required to perform tests that must be delayed due to climatic conditions, it is understood that such tests and affected equipment will be identified on the Certificate and shall be accomplished by the Contractor at the earliest possible date. Performance of the tests may not be required before Substantial Completion can be issued. The date of the issuance of the Certificate of Substantial Completion shall determine whether or not the work was completed within the contract time and whether or not Liquidated Damages are due.

3. If the work is not acceptable, and the Owner does not issue a Certificate of Substantial Completion, the Owner shall be entitled to charge the Contractor with the Designer's and Owner's costs of re-inspection, including time and travel.
- B. Partial Occupancy. Contractor agrees that the Owner shall be permitted to occupy and use any completed or partially completed portions of the Project, when such occupancy and use is in the Owner's best interest. Owner shall notify Contractor of its desire and intention to take Partial Occupancy as soon as possible but at least ten (10) working days before the Owner intends to occupy. If the Contractor believes that the portion of the work the Owner intends to occupy is not ready for occupancy, the Contractor shall notify the Owner immediately. The Designer shall inspect the work in accordance with the procedures above. If the Contractor claims increased cost of the project or delay in completion as a result of the occupancy, he shall notify the Owner immediately but in all cases before occupancy occurs.
- C. Final Completion. The Project is finally complete when the Certificate of Substantial Completion has been issued and all work items identified therein as incomplete have been completed, and when all administrative items required by the contract have been completed. Final Completion entitles the Contractor to payment of the outstanding balance of the contract amount including all change orders and retainage. Within five (5) working days of the date of the Certificate of Substantial Completion, the Contractor shall identify the cost to complete any outstanding items of work. The Designer shall review the Contractor's estimate and either approve it or provide an independent estimate for all such items. If the Contractor fails to complete the remaining items within the time specified in the Certificate, the Owner may terminate the contract and go to the surety for project completion in accordance with Article 7.2 or release the contract balance to the Contractor less 150% of the

approved estimate to complete the outstanding items. Upon completion of the outstanding items, when a final cost has been established, any monies remaining shall be paid to the Contractor. Failure to complete items of work does not relieve the Contractor from the obligation to complete the administrative requirements of the contract, such as the provisions of Article 5.3 FAILURE TO COMPLETE ALL ITEMS OF WORK UNDER THE CONTRACT SHALL BE CONSIDERED A DEFAULT AND BE GROUNDS FOR CONTRACT TERMINATION AND DEBARMENT.

- D. Liquidated Damages. Contractor agrees that the Owner may deduct from the contract price and retain as liquidated damages, and not as penalty or forfeiture, the sum stipulated in this contract for each work day after the Contract Completion Day on which work is not Substantially Complete. Assessment of Liquidated Damages shall not relieve the Contractor or the surety of any responsibility or obligation under the Contract. In addition, the Owner may, without prejudice to any other rights, claims, or remedies the Owner may have including the right to Liquidated Damages, charge the Contractor for all additional expenses incurred by the Owner and/or Designer as the result of the extended contract period through Final Completion. Additional Expenses shall include but not be limited to the costs of additional inspections.
- E. Early Completion. The Contractor has the right to finish the work before the contract completion date; however, the Owner assumes no liability for any hindrances to the Contractor unless Owner caused delays result in a time extension to the contract completion date. The Contractor shall not be entitled to any claims for lost efficiencies or for delay if a Certificate of Substantial Completion is given on or before the Contract Completion Date.

#### **ARTICLE 5.4 -- PAYMENT TO CONTRACTOR**

- A. Payments on account of this contract will be made monthly in proportion to the work which has been completed. Request for payment must be submitted on the Owner's forms. No other pay request will be processed. Supporting breakdowns must be in the same format as Owner's forms and must provide the same level of detail. The Designer will, within 5 working days from receipt of the contractor's request for payment either issue a Certificate for Payment to the Owner, for such amount as the Designer determines is properly due, or notify the Contractor in writing of reasons for withholding a Certificate. The Owner shall make payment within 30 calendar days after the

"Application and Certification for Payment" has been received and certified by the Designer. The following items are to be attached to the contractor's pay request:

1. Updated construction schedule
  2. Certified payrolls consisting of name, occupation and craft, number of hours worked and actual wages paid for each individual employee, of the Contractor and all subcontractors working on the project
- B. The Owner shall retain 5 percent of the amount of each such payment application, except as allowed by Article 5.4, until final completion and acceptance of all work covered by this contract.
- C. Each payment made to Contractor shall be on account of the total amount payable to Contractor and all material and work covered by paid partial payment shall thereupon become the sole property of Owner. This provision shall not be construed as relieving Contractor from sole responsibility for care and protection of materials and work upon which payments have been made or restoration of any damaged work or as a waiver of the right of Owner to require fulfillment of all terms of this contract.
- D. Materials delivered to the work site and not incorporated in the work will be allowed in the Application and Certification for Payment on the basis of one hundred (100%) percent of value, subject to the 5% retainage providing that they are suitably stored on the site or in an approved warehouse in accordance with the following requirements:
1. Material has previously been approved through submittal and acceptance of shop drawings conforming to requirements of Article 3.2 of General Conditions.
  2. Delivery is made in accordance with the time frame on the approved schedule.
  3. Materials, equipment, etc., are properly stored and protected from damage and deterioration and remain so - if not, previously approved amounts will be deleted from subsequent pay applications.
  4. The payment request is accompanied by a breakdown identifying the material equipment, etc. in sufficient detail to establish quantity and value.
- E. The Contractor shall be allowed to include in the Application and Certification for Payment, one hundred (100%) of the value, subject to retainage,

of major equipment and material stored off the site if all of the following conditions are met:

1. The request for consideration of payment for materials stored off site is made at least 15 working days prior to submittal of the Application for Payment including such material. Only materials inspected will be considered for inclusion on Application for Payment requests.
  2. Materials stored in one location off site are valued in excess of \$25,000.
  3. That a Certificate of Insurance is provided indicating adequate protection from loss, theft conversion or damage for materials stored off site. This Certificate shall show the State of Missouri as an additional insured for this loss.
  4. The materials are stored in a facility approved and inspected, by the Construction Representative.
  5. Contractor shall be responsible for, Owner costs to inspect out of state facilities, and any delays in the completion of the work caused by damage to the material or for any other failure of the Contractor to have access to this material for the execution of the work.
- F. The Owner shall determine the amount, quality and acceptability of the work and materials which are to be paid for under this contract. In the event any questions shall arise between the parties, relative to this contract or specifications, determination or decision of the Owner or the Construction Representative and the Designer shall be a condition precedent to the right of the Contractor to receive any money or payment for work under this contract affected in any manner or to any extent by such question.
- G. Payments Withheld: The Owner may withhold or nullify in whole or part any certificate to such extent as may be necessary to protect the Owner from loss on account of:
1. Defective work not remedied. When a notice of noncompliance is issued on an item or items, corrective action shall be undertaken immediately. Until corrective action is completed, no monies will be paid and no additional time will be allowed for the item or items. The cost of corrective action(s) shall be borne by the Contractor.
  2. A reasonable doubt that this contract can be completed for the unpaid balance.

3. Failure of the Contractor to update as-built drawings monthly for review by the Construction Representative.
4. Failure of the Contractor to update the construction schedule.

When the Construction Representative is satisfied the Contractor has remedied above deficiencies, payment shall be released.

- H. Final Payment: Upon receipt of written notice from the Contractor to the Designer and Project Representative that the work is ready for final inspection and acceptance, the Designer and Project Representative, with the Contractor, shall promptly make such inspection. If the work is acceptable and the contract fully performed, the Construction Representative shall complete a final acceptance report and the Contractor will be directed to submit a final Application and Certification for Payment. If the Owner approves the same, the entire balance shall be due and payable, with the exception of deductions as provided for under Article 5.4.
1. Where the specifications provide for the performance by the Contractor of (certain tests for the purpose of balancing and checking the air conditioning and heating equipment and the Contractor shall have furnished and installed all such equipment in accordance with the specifications, but said test cannot then be made because of climatic conditions, such test shall may be considered as required under the provisions of the specifications, Section 013300 and this contract may be substantial Full payment will not be made until the tests have been made and the equipment and system is finally accepted. If the tests are not completed when scheduled, the Owner may deduct 150% of the value of the tests from the final payment.
  2. The final payment shall not become due until the Contractor delivers to the Construction Representative:
    - a) A complete file of releases, on the standard form included in the contract documents as "Final Receipt of Payment and Release Form", from subcontractors and material suppliers evidencing payment in full for services, equipment and materials, as the case may require, if the Owner approves, or a consent from the Surety to final payment accepting liability for any unpaid amounts.

- b) An Affidavit of Compliance with Prevailing Wage Law, in the form as included in this contract specifications, properly executed by each subcontractor, and the Contractor
  - c) Certified copies of all payrolls
  - d) As-built drawings
3. If any claim remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all monies that the latter may be compelled to pay in discharging such a claim including all costs and a reasonable attorney's fee.
  4. Missouri statute requires prompt payment from the Owner to the Contractor within thirty calendar days and from the Contractor to his subcontractors within fifteen calendar days. Failure to make payments within the required time frame entitles the receiving party to charge interest at the rate of one and one half percent per month calculated from the expiration of the statutory time period until paid.
  5. The value of all unused unit price allowances and/or 150% of the value of the outstanding work items, and/or liquidated damages may be deducted from the final pay request without executing a Contract Change. Any unit price items which exceed the number of units in the contract may be added by Contract Change.

**ARTICLE 6 -- INSURANCE AND BONDS**

**ARTICLE 6.1 -- BOND**

- A. Contractor shall furnish a performance/payment bond in an amount equal to 100% of the contract price to guarantee faithful performance of the contract and 100% of the contract price to guarantee the payment of all persons performing labor on the project and furnishing materials in connection therewith under this contract as set forth in the standard form of performance and payment bond included in the contract documents. The surety on such bond shall be issued by a surety company authorized by the Missouri Department of Insurance to do business in the state of Missouri.
- B. All Performance/Payment Bonds furnished in response to this provision shall be provided by a bonding company with a rating of B+ or higher as established by A.M. Best Company, Inc. in their most recent publication.

**ARTICLE 6.2 – INSURANCE**

- A. The successful Contractor shall procure and maintain for the duration of the contract issued a policy or policies of insurance for the protection of both the Contractor and the Owner and their respective officers, officials, agents, consultants and employees. The Owner requires certification of insurance coverage from the Contractor prior to commencing work.
- B. Minimum Scope and Extent of Coverage
  1. General Liability
 

Commercial General Liability, ISO coverage form number or equivalent CG 00 01 ("occurrence" basis), or I-SO coverage form number CG 00 02, or ISO equivalent.

If ISO equivalent or manuscript general liability coverage forms are used, minimum coverage will be as follows: Premises/Operations; Independent Contractors; Products/Completed Operations; personal Injury; Broad Form Property Damage including Completed Operations; Broad Form Contractual Liability Coverage to include Contractor's obligations under Article 1.11 Indemnification and any other Special Hazards required by the work of the contract.
  2. Automobile Liability
 

Business Automobile Liability Insurance, ISO Coverage form number or equivalent CA 00 01 covering automobile liability, code 1 "ANY AUTO".
  3. Workers' Compensation and Employer's Liability
 

Statutory Workers' Compensation Insurance for Missouri and standard Employer's Liability Insurance, or the authorization to self-insure for such liability from the Missouri Division of Workers' Compensation.
  4. Builder's Risk or Installation Floater Insurance
 

Insurance upon the work and all materials, equipment, supplies, temporary structures and similar items which may be incident to the performance of the work and located at or adjacent to the site, against loss or damage from fire and such other casualties as are included in extended coverage in broad "All Risk" form, including coverage for Flood and Earthquake, in an amount not less than the replacement cost of the work or this contract price, whichever is greater, with loss payable

to Contractor and Owner as their respective interests may appear.

Contractor shall maintain sufficient insurance to cover the full value of the work and materials as the work progresses, and shall furnish Owner copies of all endorsements. If Builder's Risk Reporting- Form of Endorsement is used, Contractor shall make all reports as required therein so as to keep in force an amount of insurance which will equal the replacement cost of the work, materials, equipment, supplies, temporary structures, and other property covered thereby; and if, as a result of Contractor's failure to make any such report, the amount of insurance so recoverable shall be less than such replacement cost, Contractor's interest in the proceeds of such insurance, if any, shall be subordinated to Owner's interest to the end that Owner may receive full reimbursement for its loss.

C. Minimum Limits of Insurance

1. General Liability

Contractor

\$2,000,000 combined single limit per occurrence for bodily injury, personal injury, and property damage

\$2,000,000 annual aggregate

2. Automobile Liability

\$2,000,000 combined single limit per occurrence for bodily injury and property damage

3. Workers' Compensation and Employers Liability

Workers' Compensation limits as required by applicable State Statutes (generally unlimited) and minimum of \$1,000,000 limit per accident for Employer's Liability.

General Liability and Automobile Liability insurance may be arranged under individual policies for the full limits required or by a combination of underlying policies with the balance provided by a form-following Excess or Umbrella Liability policy.

D. Deductibles and Self-Insured Retentions

All deductibles, co-payment clauses, and self-insured retentions must be declared to and approved by the Owner. The Owner reserves the right to request the reduction or elimination of unacceptable deductibles or self-insured retentions,

as they would apply to the Owner, and their respective officers, officials, agents, consultants and employees. Alternatively, the Owner may request Contractor to procure a bond guaranteeing payment of losses and related investigations, claims administration, and defense expenses.

E. Other Insurance Provisions and Requirements

The respective insurance policies and coverage, as specified below, must contain, or be endorsed to contain the following conditions or provisions:

1. General Liability

The Owner, and its respective commissioners, officers, officials, agents, consultants and employees shall be endorsed as additional insured's by ISO form CG 20 26 Additional Insured - Designated Person or Organization. As additional insured's, they shall be covered as to work performed by or on behalf of the Contractor or as to liability which arises out of Contractor's activities or resulting from the performance of services or the delivery of goods called for by the Contract.

Contractor's insurance coverage shall be primary with respect to all additional insured's. Insurance of self-insurance programs maintained by the designated additional -insured's shall be excess of the Contractor's insurance and shall not contribute with it.

Additionally, the Contractor and Contractor's general liability insurer shall agree to waive all rights of subrogation against the Owner and any of their respective officers, officials, agents, consultants or employees for claims, losses, or expenses which arise out of Contractor's activities or result from the performance of services or the delivery of goods called for by the Contract.

Contractor's failure to comply with the terms and conditions of these insurance policies shall not affect or abridge coverage for the Owner, or for any of their officers, officials, agents, consultants or employees.

2. Automobile Insurance

The Owner, and their respective officers, officials, agents, consultants and employees shall be endorsed as additional insured's by ISO form CG 20 26 - Additional Insured Designated Person or Organization. As additional insured's, they shall be covered as to work performed by or on behalf of the Contractor or as to liability which arises out of Contractor's activities or resulting from the

performance of services or the delivery of goods called for by the Contract.

Contractor's insurance coverage shall be primary with respect to all additional insured's. Insurance or self-insurance programs maintained by the designated additional insured's shall be in excess of the Contractor's insurance and shall not contribute with it.

Additionally, the Contractor and Contractor's automobile insurer shall agree to waive all rights of subrogation against the Owner and any of their respective officers, officials, agents, consultants or employees for claims, losses, or expenses which arise out of Contractor's activities or result from the performance of services or the delivery of goods called for by the Contract.

Contractor's failure to comply with the terms and conditions of these insurance policies shall not affect or abridge coverage for the Owner or for any of its officers, officials, agents, consultants or employees.

3. Workers' Compensation/Employer's Liability

Contractor's workers' compensation insurance shall be endorsed with NCCI form WC 00 03 01 A - Alternative Employer Endorsement. The Alternative Employer Endorsement shall designate the Owner as "alternate employers."

4. All Coverages

Each insurance policy required by this section of the Contract shall contain a stipulation, endorsed if necessary, that the Owner will receive a minimum of a thirty (30) calendar day advance notice of any policy cancellation. Ten (10) calendar days advance notice is required for policy cancellation due to non-payment of premium.

F. Insurer Qualifications and Acceptability

Insurance required hereunder shall be issued by an A.M. Best, "B+" rated, Class IX insurance company approved to conduct insurance business in the state of Missouri.

G. Verification of Insurance Coverage

Prior to Owner issuing a Notice to Proceed, the Contractor shall furnish the Owner with Certificate(s) of Insurance and with any applicable original endorsements evidencing the required insurance coverage. The insurance certificates and endorsements are to be signed by a person authorized by that insurer to bind coverage on its

behalf. All certificates and endorsements received by the Owner are subject to review and approval by the Owner. The Owner reserves the right to require certified copies of all required policies at any time. If the scope of this contract will exceed one (1) year - or, if any of Contractor's applicable insurance coverage expires prior to completion of the work or services required under this contract - the Contractor will provide a renewal or replacement certificate before continuing work or services hereunder. If the Contractor fails to provide documentation of required insurance coverage, the Owner may issue a stop work order and no additional contract completion time and/or compensation shall be granted as a result thereof.

**ARTICLE 7 – SUSPENSION OR TERMINATION OF CONTRACT**

**ARTICLE 7.1 - FOR SITE CONDITIONS**

When conditions at the site of the proposed work are considered by the Owner to be unsatisfactory for prosecution of the work, the Contractor may be ordered in writing to suspend the work or any part thereof until reasonable conditions exist. When such suspension is not due to fault or negligence of the Contractor, time allowed for completion of such suspended work will be extended by a period of time equal to that lost due to delay occasioned by ordered suspension. This will be a no cost time extension.

**ARTICLE 7.2 - FOR CAUSE**

A. Termination or Suspension for Cause:

1. If the Contractor shall file for bankruptcy, or should make a general assignment for the benefit of the creditors, or if a receiver should be appointed on account of insolvency, or if the contractor should persistently or repeatedly refuse or fail to supply enough properly skilled workers or proper materials, or if the contractor should fail to make prompt payment to subcontractors or for material or labor, or persistently disregard laws, ordinances or the instructions of the Owner, or otherwise be guilty of a substantial violation of any provision of this contract, then the Owner may serve notice on the Contractor and the surety setting forth the violations and demanding compliance with this contract. Unless within ten (10) consecutive calendar days after serving such notice, such violations shall cease and satisfactory arrangements for correction be made, the Owner may suspend the Contractor's right to proceed with the work or terminate this contract.

2. In the event the Owner suspends Contractor's right to proceed with the work or terminates the contract, the Owner may demand that the Contractor's surety take over and complete the work on this contract, after the surety submits a written proposal to the Owner and receives written approval and upon the surety's failure or refusal to do so within ten (10) consecutive calendar days after demand therefore, the Owner may take over the work and prosecute the same to completion by bid or negotiated contract, or the Owner may elect to take possession of and utilize in completing the work such materials, supplies, appliances and plant as may be on the site of the work, and all subcontractors, if the Owner elects, shall be bound to perform their contracts.
- B. The Contractor and its surety shall be and remain liable to the Owner for any excess cost or damages occasioned to the Owner as a result of the actions above set forth.
- C. The Contractor in the event of such suspension or termination shall not be entitled to receive any further payments under this contract until the work is wholly finished. Then if the unpaid balance under this contract shall exceed all expenses of the Owner as certified by the Director, such excess shall be paid to the Contractor; but, if such expenses shall exceed the unpaid balance as certified by the Director, the Contractor and their surety shall be liable for and shall pay the difference and any damages to the Owner.
- D. In exercising Owner's right to secure completion of the work under any of the provisions hereof, the Director shall have the right to exercise Owner's sole discretion as to the manner, methods and reasonableness of costs of completing the work.
- E. The rights of the Owner to suspend or terminate as herein provided shall be cumulative and not exclusive and shall be in addition to any other remedy provided by law.
- F. The Contractor in the event of such suspension or termination may be declared ineligible for Owner contracts for a minimal period of twelve (12) months. Further, no contract will be awarded to any Contractor who lists in their bid form any subcontractor whose prior performance has contributed, as determined by the Owner, to a breach of a contract. In order to be considered for state-awarded contracts after this period, the Contractor/subcontractor will be required to forward acceptance reports to the Owner regarding successful completion of non-state projects during the intervening twelve (12) months from the date

of default. No contracts will be awarded to a subcontractor/Contractor until the ability to perform responsibly in the private sector has been proven to the Owner.

#### **ARTICLE 7.3 -- FOR CONVENIENCE**

- A. The Owner may terminate or suspend the Contract or any portion of the Work without cause at any time, and at the Owner's convenience. Notification of a termination or suspension shall be in writing and shall be given to the Contractor and their surety. If the Contract is suspended, the notice will contain the anticipated duration of the suspension or the conditions under which work will be permitted to resume. If appropriate, the Contractor will be requested to demobilize and re-mobilize and will be reimbursed time and costs associated with the suspension.
- B. Upon receipt of notification, the Contractor shall:
  1. Cease operations when directed.
  2. Take actions to protect the work and any stored materials.
  3. Place no further subcontracts or orders for material, supplies, services or facilities except as may be necessary to complete the portion of the Contract that has not been terminated. No claim for payment of materials or supplies ordered after the termination date shall be considered.
  4. Terminate all existing subcontracts, rentals, material, and equipment orders.
  5. Settle all outstanding liabilities arising from termination with subcontractors and suppliers.
  6. Transfer title and deliver to the Owner, work in progress, completed work, supplies and other material produced or acquire for the work terminated, and completed or partially completed plans, drawings information and other property that, if the Contract had been completed, would be required to be furnished to the Owner.
- C. For termination without cause and at the Owner's convenience, in addition to payment for work completed prior to date of termination, the Contractor may be entitled to payment of other documented costs directly associated with the early termination of the contract. Payment for anticipated profit and unapplied overhead will not be allowed.

## SECTION 007300 - SUPPLEMENTARY CONDITIONS

### 1.0 GENERAL:

A. These Supplementary General Conditions clarify, add, delete, or otherwise modify standard terms and conditions of DIVISION 0, BIDDING AND CONTRACTING REQUIREMENTS.

### 2.0 CONTACTS:

Designer: Bruce Hesterberg  
Etegra, Inc.  
12813 Flushing Meadows Drive, Suite 170  
Town & Country, Missouri 63131  
Telephone: 314-313-3905  
Email: [Bruce.Hesterberg@etegra.com](mailto:Bruce.Hesterberg@etegra.com)

MONG Project Manager /  
Construction Representative: Gary Rice  
Missouri National Guard-CFMO Office  
6819a North Boundary Road  
Jefferson City, Missouri 65101  
Telephone: 636-698-4292  
Email: [Gary.D.Rice18.nfg@army.mil](mailto:Gary.D.Rice18.nfg@army.mil)

Project Manager: Christopher Lloyd  
Division of Facilities Management, Design and Construction  
301 West High Street, Room 730  
Jefferson City, Missouri 65101  
Telephone: 5735260160  
Email: [Christopher.Lloyd@oa.mo.gov](mailto:Christopher.Lloyd@oa.mo.gov)

Contract Specialist: Paul Girouard  
Division of Facilities Management, Design and Construction  
301 West High Street, Room 730  
Jefferson City, Missouri 651012  
Telephone: 573-751-4797  
Email: [Paul.Girouard@oa.mo.gov](mailto:Paul.Girouard@oa.mo.gov)

### 3.0 NOTICE: ALL BID MATERIALS ARE DUE AT THE TIME OF BID SUBMITTAL. THERE IS NO SECOND SUBMITTAL FOR THIS PROJECT.

### 4.0 FURNISHING CONSTRUCTION DOCUMENTS:

- A. The Owner will furnish the Contractor with approximately 5 complete sets of drawings and specifications at no charge.
- B. The Owner will furnish the Contractor with approximately 5 sets of explanatory or change drawings at no charge.
- C. The Contractor may make copies of the documents as needed with no additional cost to the Owner.

### 5.0 SAFETY REQUIREMENTS

Contractor and subcontractors at any tier shall comply with RSMo 292.675 and Article 1.3, E, of Section 007213, General Conditions.

### 6.0 ENVIRONMENTAL MANAGEMENT SYSTEM (eMS):

The Missouri Army National Guard (MOARNG) has implemented an Environmental Management System (eMS). One of the key components of the eMS is the establishment of an Environmental Policy that must be communicated to all persons working for or on behalf of the organization including all suppliers and contractors. This policy stresses commitment to compliance with accepted environmental practices, and meeting or exceeding applicable environmental requirements, legal and otherwise. This policy also stresses commitment to waste

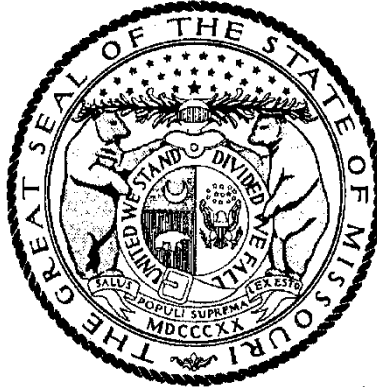


minimization, pollution prevention, and management of personnel, processes, real property, and materials in a manner to reduce environmental impacts. The policy is available upon request to all parties by contacting the Environmental Management Office at (573) 638-9514.

# Missouri

## Division of Labor Standards

### WAGE AND HOUR SECTION



MICHAEL L. PARSON, Governor

# Annual Wage Order No. 31

Section 104  
**SCOTT COUNTY**

In accordance with Section 290.262 RSMo 2000, within thirty (30) days after a certified copy of this Annual Wage Order has been filed with the Secretary of State as indicated below, any person who may be affected by this Annual Wage Order may object by filing an objection in triplicate with the Labor and Industrial Relations Commission, P.O. Box 599, Jefferson City, MO 65102-0599. Such objections must set forth in writing the specific grounds of objection. Each objection shall certify that a copy has been furnished to the Division of Labor Standards, P.O. Box 449, Jefferson City, MO 65102-0449 pursuant to 8 CSR 20-5.010(1). A certified copy of the Annual Wage Order has been filed with the Secretary of State of Missouri.

Original Signed by \_\_\_\_\_

Todd Smith, Director  
Division of Labor Standards

Filed With Secretary of State: \_\_\_\_\_ **March 8, 2024**

Last Date Objections May Be Filed: **April 8, 2024**

Prepared by Missouri Department of Labor and Industrial Relations

Building Construction Rates for  
SCOTT County

| OCCUPATIONAL TITLE           | **Prevailing<br>Hourly<br>Rate |
|------------------------------|--------------------------------|
| Asbestos Worker              | \$33.83                        |
| Boilermaker                  | \$27.62*                       |
| Bricklayer-Stone Mason       | \$47.18                        |
| Carpenter                    | \$50.89                        |
| Lather                       |                                |
| Linoleum Layer               |                                |
| Millwright                   |                                |
| Pile Driver                  |                                |
| Cement Mason                 | \$49.94                        |
| Plasterer                    |                                |
| Communication Technician     | \$27.62*                       |
| Electrician (Inside Wireman) | \$27.62*                       |
| Electrician Outside Lineman  | \$27.62*                       |
| Lineman Operator             |                                |
| Lineman - Tree Trimmer       |                                |
| Groundman                    |                                |
| Groundman - Tree Trimmer     |                                |
| Elevator Constructor         | \$27.62*                       |
| Glazier                      | \$27.62*                       |
| Ironworker                   | \$66.90                        |
| Laborer                      | \$42.19                        |
| General Laborer              |                                |
| First Semi-Skilled           |                                |
| Second Semi-Skilled          |                                |
| Mason                        | \$27.62*                       |
| Marble Mason                 |                                |
| Marble Finisher              |                                |
| Terrazzo Worker              |                                |
| Terrazzo Finisher            |                                |
| Tile Setter                  |                                |
| Tile Finisher                |                                |
| Operating Engineer           | \$27.62*                       |
| Group I                      |                                |
| Group II                     |                                |
| Group III                    |                                |
| Group III-A                  |                                |
| Group IV                     |                                |
| Group V                      |                                |
| Painter                      | \$42.03                        |
| Plumber                      | \$69.00                        |
| Pipe Fitter                  |                                |
| Roofer                       | \$50.95                        |
| Sheet Metal Worker           | \$68.42                        |
| Sprinkler Fitter             | \$27.62*                       |
| Truck Driver                 | \$27.62*                       |
| Truck Control Service Driver |                                |
| Group I                      |                                |
| Group II                     |                                |
| Group III                    |                                |
| Group IV                     |                                |

\*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. The public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

\*\*The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title as defined in RSMo Section 290.210.

Heavy Construction Rates for  
SCOTT County

| OCCUPATIONAL TITLE            | **Prevailing Hourly Rate |
|-------------------------------|--------------------------|
| Carpenter                     | \$67.82                  |
| Millwright                    |                          |
| Pile Driver                   |                          |
| Electrician (Outside Lineman) | \$27.62*                 |
| Lineman Operator              |                          |
| Lineman - Tree Trimmer        |                          |
| Groundman                     |                          |
| Groundman - Tree Trimmer      |                          |
| Laborer                       | \$49.83                  |
| General Laborer               |                          |
| Skilled Laborer               |                          |
| Operating Engineer            | \$64.99                  |
| Group I                       |                          |
| Group II                      |                          |
| Group III                     |                          |
| Group IV                      |                          |
| Truck Driver                  | \$27.62*                 |
| Truck Control Service Driver  |                          |
| Group I                       |                          |
| Group II                      |                          |
| Group III                     |                          |
| Group IV                      |                          |

Use Heavy Construction Rates on Highway and Heavy construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(3).

Use Building Construction Rates on Building construction in accordance with the classifications of construction work established in 8 CSR 30-3.040(2).

If a worker is performing work on a heavy construction project within an occupational title that is not listed on the Heavy Construction Rate Sheet, use the rate for that occupational title as shown on the Building Construction Rate Sheet.

\*The Division of Labor Standards received fewer than 1,000 reportable hours for this occupational title. Public works contracting minimum wage is established for this occupational title using data provided by Missouri Economic Research and Information Center.

\*\*The Prevailing Hourly Rate includes any applicable fringe benefit amounts for each occupational title.

# OVERTIME and HOLIDAYS

## OVERTIME

For all work performed on a Sunday or a holiday, not less than twice (2x) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work.

For all overtime work performed, not less than one and one-half (1½) the prevailing hourly rate of wages for work of a similar character in the locality in which the work is performed or the public works contracting minimum wage, whichever is applicable, shall be paid to all workers employed by or on behalf of any public body engaged in the construction of public works, exclusive of maintenance work or contractual obligation. For purposes of this subdivision, "**overtime work**" shall include work that exceeds ten hours in one day and work in excess of forty hours in one calendar week; and

A thirty-minute lunch period on each calendar day shall be allowed for each worker on a public works project, provided that such time shall not be considered as time worked.

## HOLIDAYS

January first;  
The last Monday in May;  
July fourth;  
The first Monday in September;  
November eleventh;  
The fourth Thursday in November; and  
December twenty-fifth;

If any holiday falls on a Sunday, the following Monday shall be considered a holiday.

## **SECTION 011000 – SUMMARY OF WORK**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 WORK COVERED BY CONTRACT DOCUMENTS**

- A. The Project consists of a complete replacement of roofing system. New scuppers and downspouts. Masonry repair including replacement and tuckpointing. Resealing window, door, other exterior wall penetrations. Interior repairs including lead-based paint abatement and repainting areas of damaged and failing paint. Replacement of flooring, underlayment and damaged sub-floor. Replacement of acoustical ceiling tiles. and other Work indicated in the Contract Documents
  - 1. Project Location: 300 South Main Street Sikeston, MO 63801
  - 2. Owner: State of Missouri, Michael Parson, Governor, Missouri National Guard
- B. Contract Documents, dated **05/03/2024** were prepared for the Project by **Etegra, Inc**
- C. The Work will be constructed under a single prime contract.

#### **1.3 WORK UNDER OTHER CONTRACTS**

- A. No other separate contract. All work will be the responsibility of the contractor including the removal and remediation of asbestos containing materials and the removal of lead-based paints.

#### **1.4 WORK SEQUENCE**

- A. The Work will be conducted in three phases.
  - 1. Phase One includes but is not limited to the following:
    - a. Roofing Work. All work on top of the existing building associated with the reroofing.
    - b. Exterior Brick and Window Repairs. All work associated with the remaining exterior envelope of the building.
    - c. Substantial Completion: Once the work is complete and the building is weathertight there will be a Partial Substantial Completion issued on the roof work.
  - 2. Phase Two, Interior Renovations (East Side)
    - a. Substantial Completion: Once all of the interior renovations have been completed on the East side of the project and the owner allowed to move-in and occupy the space and likewise allowed to move-out of the West side can work begin on the last phase.

3. Phase Three. Interior Renovations (West Side)
  - a. Perform the remaining Work. The remaining Work shall be substantially complete at time of Substantial Completion of the Work.
- B. Commencement of Construction: Notice to Proceed: Work of this phase shall commence within 14 days after the Notice to Proceed.
- C. Each phase must be substantially complete before moving onto the next phase.
- D. Before starting any phase of work, a 10 working day written notice must be issued to the Owner.
- E. Before commencing Work of each phase, submit an updated copy of Contractor's construction schedule showing the sequence, commencement, and completion dates, and move-out and -in dates of Owner's personnel for all phases of the Work.

## **1.5 CONTRACTOR USE OF PREMISES**

- A. General: During the construction period the Contractor shall have full use of the premises for construction operations, including use of the site. The Contractor's use of the premises limited only by the Owner's right to perform work or to retain other contractors on portions of the Project.
- B. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
  1. Owner Occupancy: Allow for Owner occupancy and use by the public.
  2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Use of the Existing Building: Maintain the existing building in a weathertight condition throughout the construction period. Repair damage cause by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period..

## **1.6 OCCUPANCY REQUIREMENTS**

- A. Full Owner Occupancy: The Owner will occupy the site and existing building during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate owner usage. Perform the Work so as not to interfere with the Owner's operations.
- B. Partial Owner Occupancy: The Owner reserves the right to occupy and to place and install equipment in completed areas of the building prior to Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placing of equipment and partial occupancy shall not constitute acceptance of the total Work.

1. The Designer will prepare a Certificate of Partial Occupancy for each specific portion of the Work to be occupied prior to substantial completion.
2. Prior to partial Owner occupancy, mechanical and electrical systems shall be fully operational. Required inspections and tests shall have been successfully completed. Upon occupancy, the Owner will operate and maintain mechanical and electrical systems serving occupied portions for the building.
3. Upon occupancy, the Owner will assume responsibility for maintenance and custodial service for occupied portions for the building.

#### **1.7 MISCELLANEOUS PROVISIONS**

- A. Site Utilization Plan. A site plan indicating the construction zone, material staging, contractor parking and temporary facilities shall be prepared by the contractor and submitted for the owner's approval. The site utilization plan shall identify and accommodate the ongoing operations of the owner and their use of the site during construction.

**PART 2 - PRODUCTS (Not Applicable)**

**PART 3 - EXECUTION (Not Applicable)**

**END OF SECTION 011000**



## **SECTION 012100 – ALLOWANCES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements governing allowances.
  - 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
  - 1. Weather allowances.
- C. Related Sections include the following:
  - 1. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders for allowances.
  - 2. Division 1 Section "Unit Prices" for procedures for using unit prices.

#### **1.3 WEATHER ALLOWANCE**

- A. Included within the completion period for this project are a specified number of “bad weather” days (see Schedule of Allowances).
- B. The Contractor’s progress schedule shall clearly indicate the bad weather day allowance as an “activity” or “activities”. In the event weather conditions preclude performance of critical work activities for 50% or more of the Contractor’s scheduled workday, that day shall be declared unavailable for work due to weather (a “bad weather” day) and charged against the above allowance. Critical work activities will be determined by review of the Contractor’s current progress schedule.
- C. The Contractor’s Representative and the Construction Representative shall agree monthly on the number of “bad weather” days to be charged against the allowance. This determination will be documented in writing and be signed by the Contractor and the Construction Representatives. If there is a failure to agree on all or part of the “bad weather” days for a particular month, that disagreement shall be noted on this written document and signed by each party’s representative. Failure of the Contractor’s representative to sign the “bad weather” day documentation after it is presented, with or without the notes of disagreement, shall constitute agreement with the “bad weather” day determination contained in that document.

- D. There will be no modification to the time of contract performance due solely to the failure to deplete the “bad weather” day allowance.
- E. Once this allowance is depleted, a no cost Change Order time extension will be executed for “bad weather” days, as defined above, encountered during the remainder of the Project.

#### **1.4 COORDINATION**

- A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

#### **1.5 ALLOWANCES**

- A. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials under allowance shall be included as part of the Contract Sum and not part of the allowance.

### **PART 2 - PRODUCTS (Not Used)**

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

#### **3.2 PREPARATION**

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

#### **3.3 SCHEDULE OF ALLOWANCES**

- A. Weather Allowance: Included within the completion period for this Project ten (10) “bad weather” days.

### **END OF SECTION 012100**

## **SECTION 012200 – UNIT PRICES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract including General and Supplementary Conditions and other Division 1 Specification Sections apply to this Section.
- B. Quantities of Units to be included in the Base Bid are indicated in Section 004322 – Unit Prices.

#### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for Unit Prices.
- B. Related Sections include the following:
  - 1. Division 1 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

#### **1.3 DEFINITIONS**

- A. Unit Price is an amount proposed by bidders, stated on the Bid Form Attachment 004322 a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

#### **1.4 PROCEDURES**

- A. Unit Prices include all necessary material plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of Unit Prices. Methods of measurement and payment for Unit Prices are specified in those Sections.
- C. Owner reserves the right to reject Contractor's measurement of Work in-place that involves use of established Unit Prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A list of Unit Prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each Unit Price.

### **PART 3 - EXECUTION**

#### **3.1 LIST OF UNIT PRICES**

- A. Unit Price No. 1 – Brick Masonry Repointing:
1. Description: Additional Brick Masonry Repointing according to Section 040120.64.
  2. Unit of Measurement: per square foot area of exterior wall.
  3. Base Bid Quantity: 940 Square Feet; Alternate #2 Quantity: 65 Square Feet; Refer to Sheets A-200 and A-201
- B. Unit Price No. 2 – Acoustical Panel Ceilings:
1. Description: Additional Ceiling Repair in accordance to Section 095113
  2. Unit of Measurement: per Square Foot of ceiling tile replacement.
  3. Base Bid Quantity: 477 Square Feet; Refer to Sheets A-100 and A-101
- C. Unit Price No. 3 – Interior Painting and Lead-Based Paint Removal:
1. Description: Additional Painting according to Section 099123 and the associated Lead based paint removal in accordance with Section 028300.
  2. Unit of Measurement: per square foot area of interior wall.
  3. Base Bid Quantity: 2,645 Square Feet; Refer to Sheets A-100 and A-101.
- D. Unit Price No. 4 – Roof Decking Removal and Replacement:
1. Description: Removal and replacement of damaged roof decking.
  2. Unit of Measurement: per square foot area of roof decking.
  3. Base Bid Quantity: 400 Square Feet; Refer to Sheets AD-110 and A-110.

**END OF SECTION 012200**

## **SECTION 012300 - ALTERNATES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements governing Alternates.

#### **1.3 DEFINITIONS**

- A. **ALTERNATE:** An alternate is an amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to the Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. Work identified as Alternate replaces the similar work associated in the Base Bid.
3. The cost for each alternate is the net addition to the Contract Sum to incorporate the Alternate into the Work. No other adjustments are made to the Contract Sum.

- B. **ADD ALTERNATE:** An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to the base bid amount if the Owner decides to accept a corresponding change in the amount of construction to be completed.

1. Add Alternates described in this Section are part of the Work only if enumerated in the Agreement.

- C. No additional time will be allowed for alternate work unless the number of workdays is so stated on the bid form.

#### **1.4 PROCEDURES**

- A. **Coordination:** Modify or adjust affected adjacent Work as necessary to completely and fully integrate the Alternate Work into the Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

- B. **Notification:** The award of the Contract will indicate whether alternates have been accepted or rejected.

- C. Execute accepted alternates under the same conditions as other Work of this Contract.
- D. Schedule: A "Schedule of Alternates" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials necessary to achieve the Work described under each alternate.

**PART 2 - PRODUCTS (Not Applicable)**

**PART 3 - EXECUTION**

**3.1 SCHEDULE OF ALTERNATES**

- A. Alternate No. 1
  - 1. Base Bid: Reroofing for the project where existing Asbestos Containing Material is encapsulated, and the new roofing material is installed on top.
  - 2. Alternate: Reroofing for the project where existing Asbestos Containing Material is completely abated and then the new roofing material is installed
- B. Add Alternate No. 2
  - 1. Add Alternate: Brick Masonry Repointing on the West Side of the Chimney as identified on the drawings.

END OF SECTION 012300

## **SECTION 012600 – CONTRACT MODIFICATION PROCEDURES**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section specifies administrative and procedural requirements for handling and processing Contract Modifications.
- B. Related Sections include the following:
  - 1. Division 1, Section 012200 "Unit Prices" for administrative requirements for using Unit Prices.
  - 2. Division 1, Section 013115 "Project Management Communications" for administrative requirements for communications.
  - 3. Division 0, Section 007213, Article 3.1 "Acceptable Substitutions" for administrative procedures for handling Requests for Substitutions made after Contract award.
  - 4. Division 0, Section 007213, Article 4.0 "Changes in the Work" for Change Order requirements.

#### **1.3 REQUESTS FOR INFORMATION**

- A. In the event that the Contractor or Subcontractor, at any tier, determines that some portion of the Drawings, Specifications, or other Contract Documents requires clarification or interpretation, the Contractor shall submit a "Request for Information" (RFI) in writing to the Designer. A RFI may only be submitted by the Contractor and shall only be submitted on the RFI forms provided by the Owner. The Contractor shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed. In the RFI, the Contractor shall set forth an interpretation or understanding of the requirement along with reasons why such an understanding was reached.
- B. Responses to RFI shall be issued within ten (10) working days of receipt of the Request from the Contractor unless the Designer determines that a longer time is necessary to provide an adequate response. If a longer time is determined necessary by the Designer, the Designer will, within five (5) working days of receipt of the request, notify the Contractor of the anticipated response time. If the Contractor submits a RFI on a time sensitive activity on the current project schedule, the Contractor shall not be entitled to any time extension due to the time it takes the Designer to respond to the request provided that the Designer responds within the ten (10) working days set forth above.
- C. Responses from the Designer will not change any requirement of the Contract Documents. In the event the Contractor believes that a response to a RFI will cause a

change to the requirements of the Contract Document, the Contractor shall give written notice to the Designer requesting a Change Order for the work. Failure to give such written notice within ten (10) working days, shall waive the Contractor's right to seek additional time or cost under Article 4, "Changes in the Work" of the General Conditions.

#### **1.4 MINOR CHANGES IN THE WORK**

- A. Designer will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Amount or the Contract Time, on "Designer's Supplemental Instructions" (DSI).

#### **1.5 PROPOSAL REQUESTS**

- A. The Designer or Owner Representative will issue a detailed description of proposed Changes in the Work that may require adjustment to the Contract Amount or the Contract Time. The proposed Change Description will be issued using the "Request for Proposal" (RFP) form. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by the Designer or Owner Representative are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  - 2. Within ten (10) working days after receipt of Proposal Request, submit a proposal for the cost adjustments to the Contract Amount and the Contract Time necessary to execute the Change. The Contractor shall submit his proposal on the appropriate Change Order Detailed Breakdown form. Subcontractors may use the appropriate Change Order Detailed Breakdown form or submit their proposal on their letterhead provided the same level of detail is included. All proposals shall include:
    - a. A detailed breakdown of costs per Article 4.1 of the General Conditions.
    - b. If requesting additional time per Article 4.2 of the General Conditions, include an updated Contractor's Construction Schedule that indicates the effect of the Change including, but not limited to, changes in activity duration, start and finish times, and activity relationship.

#### **1.6 CHANGE ORDER PROCEDURES**

- A. On Owner's approval of a Proposal Request, the Designer or Owner Representative will issue a Change Order for signatures of Owner and Contractor on the "Change Order" form.

#### **PART 2 - PRODUCTS (Not Used)**

#### **PART 3 - EXECUTION (Not Used)**

#### **END OF SECTION 012600**



## **SECTION 013100 – COORDINATION**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes administrative provisions for coordinating construction operations on Projects including, but not limited to, the following:
  - 1. Coordination Drawings.
  - 2. Administrative and supervisory personnel.
  - 3. Project meetings.
- B. Each Contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific Contractor.
- C. Related Sections include the following:
  - 1. Division 1, Section 013200 "Schedules" for preparing and submitting Contractor's Construction Schedule.
  - 2. Articles 1.8.B and 1.8.C of Section 007213 "General Conditions" for coordinating meetings onsite.
  - 3. Article 5.4.H of Section 007213 "General Conditions" for coordinating Closeout of the Contract.

#### **1.3 COORDINATION**

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections, which depend on each other for proper installation, connection, and operation.
  - 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. Make adequate provisions to accommodate items scheduled for later installation.
  - 3. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components including mechanical and electrical.
- B. Prepare memoranda for distribution to each party involved outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate Contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other Contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule.
  2. Preparation of the Schedule of Values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Preinstallation conferences.
  7. Startup and adjustment of systems.
  8. Project Closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

#### **1.4 SUBMITTALS**

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
- B. Key Personnel Names: Within fifteen (15) work days of starting construction operations, submit a list of key personnel assignments including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

#### **1.5 PROJECT MEETINGS**

- A. The Owner's Construction Representative will schedule a Pre-Construction Meeting prior to beginning of construction. The date, time, and exact place of this meeting will be determined after Contract Award and notification of all interested parties. The Contractor shall arrange to have the Job Superintendent and all prime Subcontractors present at the meeting. During the Pre-Construction Meeting, the construction procedures and information necessary for submitting payment requests will be discussed and materials distributed along with any other pertinent information.

- B. Progress Meetings: The Owner's Construction Representative will conduct Monthly Progress Meetings as stated in Articles 1.8.B and 1.8.C of Section 007213 "General Conditions".
- C. Preinstallation Conferences: Contractor shall conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
  - 1. Attendees: Installer and representatives of Manufacturers and Fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Designer and Construction Representative of scheduled meeting dates.
  - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration including requirements for the following:
    - a. Contract Documents
    - b. Options
    - c. Related RFIs
    - d. Related Change Orders
    - e. Purchases
    - f. Deliveries
    - g. Submittals
    - h. Review of mockups
    - i. Possible conflicts
    - j. Compatibility problems
    - k. Time schedules
    - l. Weather limitations
    - m. Manufacturer's written recommendations
    - n. Warranty requirements
    - o. Compatibility of materials
    - p. Acceptability of substrates
    - q. Temporary facilities and controls
    - r. Space and access limitations
    - s. Regulations of authorities having jurisdiction
    - t. Testing and inspecting requirements
    - u. Installation procedures
    - v. Coordination with other Work
    - w. Required performance results

- x. Protection of adjacent Work
- y. Protection of construction and personnel
3. Contractor shall record significant conference discussions, agreements, and disagreements including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 013100**

## **SECTION 013115 - PROJECT MANAGEMENT COMMUNICATIONS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract including General and Supplementary Conditions, Bid Form, and other Division 1 Specification Sections apply to this Section.
- B. Division 1, Section 013300 - Submittals
- C. Division 1, Section 012600 – Contract Modification Procedures

#### **1.2 SUMMARY**

- A. Project Management Communications: The Contractor shall use the Internet web based project management communications tool, E-Builder<sup>®</sup> ASP software, and protocols included in that software during this project. The use of project management communications as herein described does not replace or change any contractual responsibilities of the participants.
  - 1. Project management communications is available through E-Builder<sup>®</sup> as provided by "e-Builder<sup>®</sup>" in the form and manner required by the Owner.
  - 2. The project communications database is on-line and fully functional. User registration, electronic and computer equipment, and Internet connections are the responsibility of each project participant. The sharing of user accounts is prohibited
- B. Support: E-Builder<sup>®</sup> will provide on-going support through on-line help files.
- C. Copyrights and Ownership: Nothing in this specification or the subsequent communications supersedes the parties' obligations and rights for copyright or document ownership as established by the Contract Documents. The use of CAD files, processes or design information distributed in this system is intended only for the project specified herein.
- D. Purpose: The intent of using E-Builder<sup>®</sup> is to improve project work efforts by promoting timely initial communications and responses. Secondly, to reduce the number of paper documents while providing improved record keeping by creation of electronic document files
- E. Authorized Users: Access to the web site will be by individuals who are authorized users.

1. Individuals shall complete the E-Builder New Company/User Request Form located at the following web site: <https://oa.mo.gov/facilities/vendor-links/contractor-forms>. Completed forms shall be emailed to the following email address: [OA.FMDCE-BuilderSupport@oa.mo.gov](mailto:OA.FMDCE-BuilderSupport@oa.mo.gov).
  2. Authorized users will be contacted directly and assigned a temporary user password.
  3. Individuals shall be responsible for the proper use of their passwords and access to data as agents of the company in which they are employed.
- F. **Administrative Users:** Administrative users have access and control of user licenses and all posted items. **DO NOT POST PRIVATE OR YOUR COMPANY CONFIDENTIAL ITEMS IN THE DATABASE!** Improper or abusive language toward any party or repeated posting of items intended to deceive or disrupt the work of the project will not be tolerated and will result in deletion of the offensive items and revocation of user license at the sole discretion of the Administrative User(s).
- G. **Communications:** The use of fax, email and courier communication for this project is discouraged in favor of using E-Builder® to send messages. Communication functions are as follows:
1. **Document Integrity and Revisions:**
    - a. Documents, comments, drawings and other records posted to the system shall remain for the project record. The authorship time and date shall be recorded for each document submitted to the system. Submitting a new document or record with a unique ID, authorship, and time stamp shall be the method used to make modifications or corrections.
    - b. The system shall make it easy to identify revised or superseded documents and their predecessors.
    - c. Server or Client side software enhancements during the life of the project shall not alter or restrict the content of data published by the system. System upgrades shall not affect access to older documents or software.
  2. **Document Security:**
    - a. The system shall provide a method for communication of documents. Documents shall allow security group assignment to respect the contractual parties communication except for Administrative Users. **DO NOT POST PRIVATE OR YOUR COMPANY CONFIDENTIAL ITEMS IN THE DATABASE!**
  3. **Document Integration:**
    - a. Documents of various types shall be logically related to one another and discoverable. For example, requests for information, daily field reports, supplemental sketches and photographs shall be capable of reference as related records.
  4. **Reporting:**
    - a. The system shall be capable of generating reports for work in progress, and logs for each document type. Summary reports generated by the system shall be available for team members.

5. Notifications and Distribution:
    - a. Document distribution to project members shall be accomplished both within the extranet system and via email as appropriate. Project document distribution to parties outside of the project communication system shall be accomplished by secure email of outgoing documents and attachments, readable by a standard email client.
  6. Required Document Types:
    - a. RFI, Request for Information.
    - b. Submittals, including record numbering by drawing and specification section.
    - c. Transmittals, including record of documents and materials delivered in hard copy.
    - d. Meeting Minutes.
    - e. Application for Payments (Draft or Pencil).
    - f. Review Comments.
    - g. Field Reports.
    - h. Construction Photographs.
    - i. Drawings.
    - j. Supplemental Sketches.
    - k. Schedules.
    - l. Specifications.
    - m. Request for Proposals
    - n. Designer's Supplemental Instructions
    - o. Punch Lists
- H. Record Keeping: Except for paper documents, which require original signatures and large format documents (greater than 8½ x 11 inches), all other 8½ x 11 inches documents shall be submitted by transmission in electronic form to the E-Builder® web site by licensed users.
- a. The Owner and his representatives, the Designer and his consultants, and the Contractor and his Sub Contractors and suppliers at every tier shall respond to documents received in electronic form on the web site, and consider them as if received in paper document form.
  - b. The Owner and his representatives, the Designer and his consultants, and the Contractor and his Sub Contractors and suppliers at every tier reserves the right to and shall reply or respond by transmissions in electronic form on the web site to documents actually received in paper document form.
  - c. The Owner and his representatives, the Designer and his consultants, and the Contractor and his Sub Contractors and suppliers at every tier reserves the right to and shall copy any paper document into electronic form and make same available on the web site.
- I. Minimum Equipment and Internet Connection: In addition to other requirements specified in this Section, the Owner and his representatives, the Construction Manager and his representatives, the Architect and his consultants, and the Contractor and his

sub-contractors and suppliers at every tier required to have a user license(s) shall be responsible for the following:

1. Providing suitable computer systems for each licensed user at the users normal work location<sup>1</sup> with high-speed Internet access, i.e. DSL, local cable company's Internet connection, or T1 connection.
2. Each of the above referenced computer systems shall have the following minimum system<sup>2</sup> and software requirements:
  - a. Desktop configuration (Laptop configurations are similar and should be equal to or exceed desktop system.)
    - 1) Operating System: Windows XP or newer
    - 2) Internet Browser: Internet Explorer 6.01SP2+ (Recommend IE7.0+)
    - 3) Minimum Recommend Connection Speed: 256K or above
    - 4) Processor Speed: 1 Gigahertz and above
    - 5) RAM: 512 mb
    - 6) Operating system and software shall be properly licensed.
    - 7) Internet Explorer version 7 (current version is a free distribution for download). This specification is not intended to restrict the host server or client computers provided that industry standard HTTP clients may access the published content.
    - 8) Adobe Acrobat Reader (current version is a free distribution for download).
    - 9) Users should have the standard Microsoft Office Suite (current version must be purchased) or the equivalent.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable.)

END OF SECTION 013115

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<sup>1</sup> The normal work location is the place where the user is assigned for more than one-half of his time working on this project.

<sup>2</sup> The minimum system herein will not be sufficient for many tasks and may not be able to process all documents and files stored in the E-Builder® Documents area.



## **SECTION 013200 – SCHEDULES – BAR CHART**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes requirements for a Bar Chart Schedule for the project construction activities, schedule of submittals, and schedule for testing.

### **PART 2 - PRODUCTS – (Not Applicable)**

### **PART 3 - EXECUTION**

#### **3.1 SUBMITTAL PROCEDURES**

- A. The Contractor shall submit to the Designer, within ten (10) working days following the Notice to Proceed, a Progress Schedule including Schedule of Values showing the rate of progress the Contractor agrees to maintain and the order in which he proposed to carry out the various phases of Work. No payments shall be made to the Contractor until the Progress Schedule has been approved by the Owner.
  - 1. The Schedule of Values must have the following line items included with the value of the item as indicated below:
    - a. O&M's (Owner's Manual)
      - 1) \$1,000,000.00 (One million) and under – 2% of the total contract amount
      - 2) Over \$1,000,000.00 (One million) – 1% of the total contract amount
    - b. Close Out Documents
      - 1) \$1,000,000.00 (One million) and under – 2% of the total contract amount
      - 2) Over \$1,000,000.00 (One million) – 1% of the total contract amount
    - c. General Conditions
      - 1) No more than 10%
- B. The Contractor shall submit an updated Schedule for presentation at each Monthly Progress Meeting. The Schedule shall be updated by the Contractor as necessary to reflect the current Schedule and its relationship to the original Schedule. The updated Schedule shall reflect any changes in the logic, sequence, durations, or completion date.

Payments to the Contractor shall be suspended if the Progress Schedule is not adequately updated to reflect actual conditions.

- C. The Contractor shall submit Progress Schedules to Subcontractors to permit coordinating their Progress Schedules to the general construction Work. The Contractor shall coordinate preparation and processing of Schedules and reports with performance of other construction activities.

### 3.2 CONSTRUCTION PROGRESS SCHEDULE – BAR CHART SCHEDULE

- A. Bar-Chart Schedule: The Contractor shall prepare a comprehensive, fully developed, horizontal bar chart-type Contractor’s Construction Schedule. The Contractor for general construction shall prepare the Construction Schedule for the entire Project. The Schedule shall show the percentage of work to be completed at any time, anticipated monthly payments by Owner, as well as significant dates (such as completion of each phase or area of work) which shall serve as check points to determine compliance with the approved Schedule. The Schedule shall also include an activity for the number of “bad” weather days.
  - 1. The Contractor shall provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week.
    - a. If practical, use the same Schedule of Values breakdown for schedule time bars.
  - 2. The Contractor shall provide a base activity time bar showing duration for each construction activity. Each bar is to indicate start and completion dates for the activity. The Contractor is to place a contrasting bar below each original schedule activity time for indicating actual progress and planned remaining duration for the activity.
  - 3. The Contractor shall prepare the Schedule on a minimal number of separate sheets to readily show the data for the entire construction period.
  - 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on schedule with other construction activities. Include minor elements involved in the overall sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
  - 5. Coordinate the Contractor’s Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other required schedules and reports.
  - 6. Indicate the Intent to Award and the Contract Substantial Completion dates on the schedule.
- B. Phasing: Provide notations on the schedule to show how the sequence of the Work is affected by the following:
  - 1. Requirement for Phased completion
  - 2. Work by separate Contractors

3. Work by the Owner
  4. Pre-purchased materials
  5. Coordination with existing construction
  6. Limitations of continued occupancies
  7. Un-interruptible services
  8. Partial Occupancy prior to Substantial Completion
  9. Site restrictions
  10. Provisions for future construction
  11. Seasonal variations
  12. Environmental control
- C. Work Stages: Use crosshatched bars to indicate important stages of construction for each major portion of the Work. Such stages include, but are not necessarily limited to, the following:
1. Subcontract awards
  2. Submittals
  3. Purchases
  4. Mockups
  5. Fabrication
  6. Sample testing
  7. Deliveries
  8. Installation
  9. Testing
  10. Adjusting
  11. Curing
  12. Startup and placement into final use and operation
- D. Area Separations: Provide a separate time bar to identify each major area of construction for each major portion of the Work. For the purposes of this Article, a “major area” is a story of construction, a separate building, or a similar significant construction element.
1. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
    - a. Structural completion.
    - b. Permanent space enclosure
    - c. Completion of mechanical installation
    - d. Completion of the electrical portion of the Work
    - e. Substantial Completion

### **3.3 SCHEDULE OF SUBMITTALS**

- A. Upon acceptance of the Construction Progress Schedule, prepare and submit a complete schedule of submittals. Coordinate the submittal schedule with Section 013300 SUBMITTALS, the approved Construction Progress Schedule, list of subcontracts, Schedule of Values and the list of products.
- B. Prepare the schedule in chronological order. Provide the following information
  - 1. Scheduled date for the first submittal
  - 2. Related Section number
  - 3. Submittal category
  - 4. Name of the Subcontractor
  - 5. Description of the part of the Work covered
  - 6. Scheduled date for resubmittal
  - 7. Scheduled date for the Designer's final release or approval
- C. Distribution: Following the Designer's response to the initial submittal schedule, print and distribute copies to the Designer, Owner, subcontractors, and other parties required to comply with submittal dates indicated.
  - 1. Post copies in the Project meeting room and temporary field office.
  - 2. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned part of the Work and are no longer involved in construction activities.
- D. Schedule Updating: Revise the schedule after each meeting or other activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

### **3.4 SCHEDULE OF INSPECTIONS AND TESTS**

- A. Prepare a schedule of inspections, tests, and similar services required by the Contract Documents. Submit the schedule with (15) days of the date established for commencement of the Contract Work. The Contractor is to notify the testing agency at least (5) working days in advance of the required tests unless otherwise specified.
- B. Form: This schedule shall be in tabular form and shall include, but not be limited to, the following:
  - 1. Specification Section number
  - 2. Description of the test
  - 3. Identification of applicable standards
  - 4. Identification of test methods
  - 5. Number of tests required
  - 6. Time schedule or time span for tests

7. Entity responsible for performing tests
  8. Requirements for taking samples
  9. Unique characteristics of each service
- C. Distribution: Distribute the schedule to the Owner, Architect, and each party involved in performance of portions of the Work where inspections and tests are required.

**END OF SECTION 013200**

## **SECTION 013300 – SUBMITTALS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract including General and Supplementary Conditions, Bid Form, and other Division 1 Specification Sections apply to this Section.
- B. Division 1, Section 013115 “Project Management Communications” for administrative requirements for communications.

#### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for submittals required for performance of the Work including the following:
  - 1. Shop Drawings
  - 2. Product Data
  - 3. Samples
  - 4. Quality Assurance Submittals
  - 5. Construction Photographs
  - 6. Operating and Maintenance Manuals
  - 7. Warranties
- B. Administrative Submittals: Refer to General and Supplementary Conditions other applicable Division 1 Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:
  - 1. Construction Progress Schedule including Schedule of Values
  - 2. Performance and Payment Bonds
  - 3. Insurance Certificates
  - 4. Applications for Payment
  - 5. Certified Payroll Reports
  - 6. Partial and Final Receipt of Payment and Release Forms
  - 7. Affidavit – Compliance with Prevailing Wage Law
  - 8. Record Drawings
  - 9. Notifications, Permits, etc.
- C. The Contractor is obliged and responsible to check all shop drawings and schedules to assure compliance with contract plans and specifications. The Contractor is responsible for the content of the shop drawings and coordination with other contract work. Shop drawings and schedules shall indicate, in detail, all parts of an Item or Work including erection and setting instructions and integration with the Work of other trades.

- D. The Contractor shall at all times make a copy, of all approved submittals, available on site to the Construction Representative.

### **1.3 SUBMITTAL PROCEDURES**

- A. The Contractor shall comply with the General and Supplementary Conditions and other applicable sections of the Contract Documents. The Contractor shall submit, with such promptness as to cause no delay in his work or in that of any other contractors, all required submittals indicated in Part 3.1 of this section and elsewhere in the Contract Documents. Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
    - a. The Designer reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
- B. Each drawing and/or series of drawings submitted must be accompanied by a letter of transmittal giving a list of the titles and numbers of the drawings. Each series shall be numbered consecutively for ready reference and each drawing shall be marked with the following information:
  - 1. Date of Submission
  - 2. Name of Project
  - 3. Location
  - 4. Section Number of Specification
  - 5. State Project Number
  - 6. Name of Submitting Contractor
  - 7. Name of Subcontractor
  - 8. Indicate if Item is submitted as specified or as a substitution

### **1.4 SHOP DRAWINGS**

- A. Comply with the General Conditions, Article 3.2.
- B. The Contractor shall submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not a Shop Drawing.
- C. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates, and similar drawings including the following information:

1. Dimensions
2. Identification of products and materials included by sheet and detail number
3. Compliance with specified standards
4. Notation of coordination requirements
5. Notation of dimensions established by field measurement
6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8½"x11" but no larger than 36"x48".

## **1.5 PRODUCT DATA**

- A. The Contractor shall comply with the General Conditions, Article 3.2.
- B. The Contractor shall collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
  1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information including the following information:
    - a. Manufacturer's printed recommendations
    - b. Compliance with Trade Association standards
    - c. Compliance with recognized Testing Agency standards
    - d. Application of Testing Agency labels and seals
    - e. Notation of dimensions verified by field measurement
    - f. Notation of coordination requirements
  2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

## **1.6 SAMPLES**

- A. The Contractor shall comply with the General Conditions, Article 3.2.
- B. The Contractor shall submit full-size, fully fabricated samples, cured and finished as specified, and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
  1. The Contractor shall mount or display samples in the manner to facilitate review of qualities indicated. Prepare samples to match the Designer's sample including the following:
    - a. Specification Section number and reference
    - b. Generic description of the Sample
    - c. Sample source
    - d. Product name or name of the Manufacturer



- e. Compliance with recognized standards
  - f. Availability and delivery time
2. The Contractor shall submit samples for review of size, kind, color, pattern, and texture. Submit samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    - a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least three (3) multiple units that show approximate limits of the variations.
    - b. Refer to other Specification Sections for requirements for samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
    - c. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.
  3. Field samples are full-size examples erected onsite to illustrate finishes, coatings, or finish materials and to establish the Project standard.
    - a. The Contractor shall comply with submittal requirements to the fullest extent possible. The Contractor shall process transmittal forms to provide a record of activity.

## **1.7 QUALITY ASSURANCE DOCUMENTS**

- A. The Contractor shall comply with the General Conditions, Article 3.2
- B. The Contractor shall submit quality control submittals including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- C. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the Manufacturer certifying compliance with specified requirements.
  1. Signature: Certification shall be signed by an officer of the Manufacturer or other individual authorized to contractually bind the Company.
- D. Inspection and Test Reports: The Contractor shall submit the required inspection and test reports from independent testing agencies as specified in this Section and in other Sections of the Contract Documents.
- E. Construction Photographs: The Contractor shall submit record construction photographs as specified in this Section and in other Sections of the Contract Documents.
  1. The Contractor shall submit digital photographs. The Construction Administrator shall determine the quantity and naming convention at the preconstruction meeting.
  2. The Contractor shall identify each photograph with project name, location, number, date, time, and orientation.

3. The Contractor shall submit progress photographs monthly unless specified otherwise. Photographs shall be taken one (1) week prior to submitting.
4. The Contractor shall take four (4) site photographs from differing directions and a minimum of five (5) interior photographs indicating the relative progress of the Work.

**1.8 OPERATING AND MAINTENANCE MANUALS AND WARRANTIES**

- A. The Contractor shall submit all required manufacturer’s operating instructions, maintenance/service manuals, and warranties in accordance with the General Conditions, Article 3.5, and Supplementary Conditions along with this and other Sections of the Contract Documents.

**PART 2 - PRODUCTS (Not Applicable)**

**PART 3 - EXECUTION**

**3.1 REQUIRED SUBMITTALS**

- A. Contractor shall submit the following information for materials and equipment to be provided under this contract.

| SPEC SECTION | TITLE  | CATEGORY               |
|--------------|--|------------------------|
| 013100       | Coordination - Coordination Drawings   | Shop Drawings          |
| 013100       | Coordination - List of Key Personnel   | List of Subcontractors |
| 013200       | Schedules - Monthly Updates to Schedule  | Construction Schedule  |
| 013200       | Schedules  | Schedule of Values     |
| 013200       | Schedules -Schedule of Submittals  | List of Subcontractors |
| 013200       | Schedules - Inspections and Tests  | Test Report            |
| 013513.28    | Site Security & Health Requirements - Material Safety Data Sheets                      | Product Data           |
| 013513.28    | Site Security & Health Requirements - Schedule of Shut Downs                           | Construction Schedule  |
| 013513.28    | Site Security & Health Requirements - List of Employees                                | List of Subcontractors |
| 015000       | Construction Facilities & Temporary Controls - Implementation and Termination Schedule | Construction Schedule  |
| 017900       | Demonstration and Training - Instructional Program                                     | Product Data           |
| 017900       | Demonstration and Training - Attendance Records  | Product Data           |
| 017900       | Demonstration and Training - Evaluations   | Product Data           |
| 024119       | Selective Demolition - Protective Measures   | Shop Drawings          |
| 024119       | Selective Demolition - Schedule of Activities  | Construction Schedule  |

|           |  |                        |
|-----------|--|------------------------|
| 024119    | Selective Demolition - Pre-Demolition Photos or Video              | As-Builts              |
| 028200    | Asbestos Remediation - Safety Data Sheets                          | Product Data           |
| 028200    | Asbestos Remediation - Copy of Notifications                       | Certification          |
| 028200    | Asbestos Remediation - Training Certificates                       | Certification          |
| 028200    | Asbestos Remediation - Laboratory Information                      | List of Subcontractors |
| 028200    | Asbestos Remediation - Work Schedule                               | Construction Schedule  |
| 028200    | Asbestos Remediation - Disposal Plan                               | Shop Drawings          |
| 028300    | Paint Removal Handling and Disposal - Proof of Training            | Certification          |
| 028300    | Paint Removal Handling and Disposal - Disposal Plan                | Shop Drawings          |
| 028300    | Paint Removal Handling and Disposal - Waste Disposal Receipts      | Product Data           |
| 028300    | Paint Removal Handling and Disposal - Close-out Documentation      | Product Data           |
| 040110    | Masonry Cleaning   | Product Data           |
| 040110    | Masonry Cleaning   | Mock up                |
| 040120.63 | Brick Masonry Repair   | Product Data           |
| 040120.63 | Brick Masonry Repair - Quality Control Program                     | Product Data           |
| 040120.64 | Brick Masonry Repointing   | Product Data           |
| 040120.64 | Brick Masonry Repointing   | Sample                 |
| 040120.64 | Brick Masonry Repointing   | Mock up                |
| 055000    | Metal Fabrications   | Product Data           |
| 055000    | Metal Fabrications   | Shop Drawings          |
| 055000    | Metal Fabrications - Delegated Design Submittal                    | Shop Drawings          |
| 061000    | Rough Carpentry  | Product Data           |
| 061000    | Rough Carpentry - Material Certificates                            | Certification          |
| 061000    | Rough Carpentry - Evaluation Reports                               | Test Report            |
| 070150.19 | Preparation for Reroofing - Photos or Video                        | As-Builts              |
| 070150.19 | Preparation for Reroofing - Installer Qualifications               | Certification          |
| 071326    | Self-Adhering Sheet Waterproofing                                  | Product Data           |
| 071326    | Self-Adhering Sheet Waterproofing                                  | Sample                 |
| 071326    | Self-Adhering Sheet Waterproofing                                  | Warranty               |
| 071326    | Self-Adhering Sheet Waterproofing - Installer Qualifications       | Certification          |
| 075423    | Thermoplastic-Polyolefin (TPO) Roofing                             | Product Data           |
| 075423    | Thermoplastic-Polyolefin (TPO) Roofing                             | Shop Drawings          |
| 075423    | Thermoplastic-Polyolefin (TPO) Roofing                             | Sample                 |
| 075423    | Thermoplastic-Polyolefin (TPO) Roofing - Wind Uplift Resistance    | Product Data           |
| 075423    | Thermoplastic-Polyolefin (TPO) Roofing - Manufacturer Certificates | Certification          |
| 075423    | Thermoplastic-Polyolefin (TPO) Roofing                             | Warranty               |
| 075423    | Thermoplastic-Polyolefin (TPO) Roofing                             | Test Report            |
| 077100    | Roof Specialties   | Product Data           |

|        |  |                                |
|--------|--|--------------------------------|
| 077100 | Roof Specialties                               | Shop Drawings                  |
| 077100 | Roof Specialties                               | Sample                         |
| 077100 | Roof Specialties                               | Test Report                    |
| 077100 | Roof Specialties                               | Warranty                       |
| 077100 | Roof Specialties                               | Operation / Maintenance Manual |
| 077100 | Roof Specialties - Manufacturer Qualifications | Certification                  |
| 077200 | Roof Accessories                               | Product Data                   |
| 077200 | Roof Accessories                               | Warranty                       |
| 077200 | Roof Accessories                               | Operation / Maintenance Manual |
| 079200 | Joint Sealants                                 | Product Data                   |
| 079200 | Joint Sealants                                 | Sample                         |
| 079200 | Joint Sealants - Joint-Sealant Schedule        | Shop Drawings                  |
| 079200 | Joint Sealants                                 | Warranty                       |
| 092900 | Gypsum Board                                   | Product Data                   |
| 095113 | Acoustical Panel Ceilings                      | Product Data                   |
| 095113 | Acoustical Panel Ceilings                      | Sample                         |
| 095113 | Acoustical Panel Ceilings - Maintenance Data   | Operation / Maintenance Manual |
| 096519 | Resilient Tile Flooring                        | Product Data                   |
| 096519 | Resilient Tile Flooring                        | Sample                         |
| 096519 | Resilient Tile Flooring                        | Operation / Maintenance Manual |
| 096813 | Tile Carpeting                                 | Product Data                   |
| 096813 | Tile Carpeting                                 | Sample                         |
| 096813 | Tile Carpeting                                 | Operation / Maintenance Manual |
| 096813 | Tile Carpeting - Installer Qualifications      | Certification                  |
| 096813 | Tile Carpeting                                 | Warranty                       |
| 099113 | Exterior Painting                              | Product Data                   |
| 099113 | Exterior Painting                              | Sample                         |
| 099113 | Exterior Painting                              | Mock up                        |
| 099123 | Interior Painting                              | Product Data                   |
| 099123 | Interior Painting                              | Sample                         |
| 099123 | Interior Painting - Product Schedule           | Shop Drawings                  |
| 099123 | Interior Painting                              | Mock up                        |

**END OF SECTION 013300**

## **SECTION 013513.28 - SITE SECURITY AND HEALTH REQUIREMENTS (STATE FAIR, VETERANS, MONG)**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUBMITTALS**

- A. List of required submittals:
  - 1. Materials Safety Data Sheets for all hazardous materials to be brought onsite.
  - 2. Schedule of proposed shutdowns, if applicable.
  - 3. A list of the names of all employees who will submit fingerprints for a background check, and the signed privacy documents identified below for each employee.

### **PART 2 - PRODUCTS (Not Applicable)**

### **PART 3 - EXECUTION**

#### **3.1 ACCESS TO THE SITE**

- A. The Contractor shall arrange with Facility Representatives to establish procedures for the controlled entry of workers and materials into the work areas at the Facility.
- B. The Contractor shall establish regular working hours with Facility Representatives. The Contractor must report changes in working hours or overtime to Facility Representatives and obtain approval twenty-four (24) hours ahead of time. The Contractor shall report emergency overtime to Facility Representatives as soon as it is evident that overtime is needed. The Contractor must obtain approval from Facility Representatives for all work performed after dark.
- C. The Contractor shall provide the name and phone number of the Contractor's employee or agent who is in charge onsite; this individual must be able to be contacted in case of emergency. The Contractor must be able to furnish names and address of all employees upon request.
- D. All construction personnel shall visibly display issued identification cards.

#### **3.2 FIRE PROTECTION, SAFETY, AND HEALTH CONTROLS**

- A. The Contractor shall take all necessary precautions to guard against and eliminate possible fire hazards.

1. Onsite burning is prohibited.
  2. The Contractor shall store all flammable or hazardous materials in proper containers located outside the buildings or offsite, if possible.
  3. The Contractor shall provide and maintain, in good order, during construction fire extinguishers as required by the National Fire Protection Association. In areas of flammable liquids, asphalt, or electrical hazards, 15-pound carbon dioxide or 20-pound dry chemical extinguishers shall be provided.
- B. The Contractor shall not obstruct streets or walks without permission from the Owner's Construction Representative and Facility Representatives.
- C. The Contractor's personnel shall not exceed the speed limit of 15 mph while at the Facility unless otherwise posted.
- D. The Contractor shall take all necessary, reasonable measures to reduce air and water pollution by any material or equipment used during construction. The Contractor shall keep volatile wastes in covered containers, and shall not dispose of volatile wastes or oils in storm or sanitary drains.
- E. The Contractor shall keep the project site neat, orderly, and in a safe condition at all times. The Contractor shall immediately remove all hazardous waste, and shall not allow rubbish to accumulate. The Contractor shall provide onsite containers for collection of rubbish and shall dispose of it at frequent intervals during the progress of the Work.
- F. Fire exits, alarm systems, and sprinkler systems shall remain fully operational at all times, unless written approval is received from the Owner's Construction Representative and the appropriate Facility Representative at least twenty-four (24) hours in advance. The Contractor shall submit a written time schedule for any proposed shutdowns.
- G. For all hazardous materials brought onsite, Material Safety Data Sheets shall be on site and readily available upon request at least a day before delivery.
- H. Alcoholic beverages or illegal substances shall not be brought upon the Facility premises. The Contractor's workers shall not be under the influence of any intoxicating substances while on the Facility premises.

### **3.3 SECURITY CLEARANCES AND RESTRICTIONS**

- A. **FMDC REQUIRED FINGERPRINTING FOR CRIMINAL BACKGROUND AND WARRANTS CHECK**
1. All employees of the Contractor are required to submit fingerprints to the Missouri State Highway Patrol to enable the Office of Administration, Division of Facilities Management, Design and Construction (FMDC) to receive state and national criminal background checks on such employees. FMDC reserves the right to prohibit any employee of the Contractor from performing work in or on the premises of any facility owned, operated, or utilized by the State of Missouri for any reason.
  2. The Contractor shall ensure all of its employees submit fingerprints to the Missouri State Highway Patrol and pay for the cost of such background checks. The Contractor shall submit to FMDC via email to [FMDCSecurity@oa.mo.gov](mailto:FMDCSecurity@oa.mo.gov) a list of the names of the

Contractor's employees who will be fingerprinted and a signed Missouri Applicant Fingerprint Privacy Notice, Applicant Privacy Rights and Privacy Act Statement for each employee. All employees of the Contractor approved by FMDC to work at a State facility must obtain a contractor ID badge from FMDC prior to beginning work on-site, unless the Director of FMDC, at the Director's discretion, waives the requirement for a contractor ID badge. The Contractor and its employees must comply with the process for background checks and contractor ID badges found on FMDC's website at: <https://oa.mo.gov/fmdc-contractor-id-badges>.

3. Pursuant to section 43.540, RSMo, FMDC participates in the Missouri Rap Back and National Rap Back programs as of August 28, 2018. This means that the Missouri State Highway Patrol, Central Records Repository, and the Federal Bureau of Investigation will retain the fingerprints submitted by each of the Contractor's employees, and those fingerprints will be searched against other fingerprints on file, including latent fingerprints. While retained, an employee's fingerprints may continue to be compared against other fingerprints submitted or retained by the Federal Bureau of Investigation, including latent fingerprints.
4. As part of the Missouri and National Rap Back programs, FMDC will receive notification if a new arrest is reported for an employee whose fingerprints have been submitted for FMDC after August 28, 2018. If the employee is performing work on a State contract at the time of the arrest notification, FMDC will request and receive the employee's updated criminal history records. If the employee is no longer performing work on a State contract, FMDC will not obtain updated criminal records.
5. Pursuant to section 43.540, RSMo, the Missouri State Highway Patrol will provide the results of the employee's background check directly to FMDC. FMDC may NOT release the results of a background check to the Contractor or provide the Contractor any information obtained from a background check, either verbally or in writing. FMDC will notify the Contractor only whether an employee is approved to work on State property.
6. Each employee who submits fingerprints to the Missouri State Highway Patrol has a right to obtain a copy of the results of his or her background check. The employee may challenge the accuracy and completeness of the information contained in a background check report and obtain a determination from the Missouri State Highway Patrol and/or the FBI regarding the validity of such challenge prior to FMDC making a final decision about his or her eligibility to perform work under a State contract.
7. The Contractor shall notify FMDC via email to [FMDCSecurity@oa.mo.gov](mailto:FMDCSecurity@oa.mo.gov) if an employee is terminated or resigns from employment with the Contractor. If the Contractor does not anticipate performing work on a State contract in the future, the Contractor may request that FMDC remove its employees from the Rap Back programs. However, if removed from the Rap Back programs, employees will be required to submit new fingerprints should the contractor be awarded another State contract.
8. Upon award of a Contract, the Contractor should contact FMDC at [FMDCSecurity@oa.mo.gov](mailto:FMDCSecurity@oa.mo.gov) to determine if its employees need to provide a new background check. If a Contractor's employee has previously submitted a fingerprint background check to FMDC as part of the Missouri and National Rap Back programs, the employee may not need to submit another fingerprint search for a period of three to six years, depending upon the circumstances. The Contractor understands and agrees that FMDC may require more frequent background checks without providing any explanation to the Contractor. The fact that an additional background check is requested by FMDC does not indicate that the employee has a criminal record.

### **3.4 DISRUPTION OF UTILITIES**

- A. The Contractor shall give a minimum of seventy-two (72) hours written notice to the Construction Representative and the Facility Representative before disconnecting electric, gas, water, fire protection, or sewer service to any building.
- B. The Contractor shall give a minimum of seventy-two (72) hours written notice to the Construction Representative and Facility Representative before closing any access drives, and shall make temporary access available, if possible. The Contractor shall not obstruct streets, walks, or parking.

### **3.5 PROTECTION OF PERSONS AND PROPERTY**

#### **A. SAFETY PRECAUTIONS AND PROGRAMS**

- 1. The Contractor shall at all times conduct operations under this Contract in a manner to avoid the risk of bodily harm to persons or risk of damage to any property. The Contractor shall promptly take precautions which are necessary and adequate against conditions created during the progress of the Contractor's activities hereunder which involve a risk of bodily harm to persons or a risk of damage to property. The Contractor shall continuously inspect Work, materials, and equipment to discover and determine any such conditions and shall be solely responsible for discovery, determination, and correction of any such conditions. The Contractor shall comply with applicable safety laws, standards, codes, and regulations in the jurisdiction where the Work is being performed, specifically, but without limiting the generality of the foregoing, with rules regulations, and standards adopted pursuant to the Williams-Steiger Occupational Safety and Health Act of 1970 and applicable amendments.
- 2. All contractors, subcontractors and workers on this project are subject to the Construction Safety Training provisions 292.675 RSMo.
- 3. In the event the Contractor encounters on the site, material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), lead, mercury, or other material known to be hazardous, which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner's Representative and the Architect in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of the Owner's Representative and Contractor if in fact the material is asbestos or polychlorinated biphenyl (PCB) and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos or polychlorinated biphenyl (PCB), or when it has been rendered harmless by written agreement of the Owner's Representative and the Contractor. "Rendered Harmless" shall mean that levels of such materials are less than any applicable exposure standards, including but limited to OSHA regulations.

#### **B. SAFETY OF PERSONS AND PROPERTY**

- 1. The Contractor shall take reasonable precautions for safety of, and shall provide protection to prevent damage, injury, or loss to:
  - a. clients, staff, the public, construction personnel, and other persons who may be affected thereby;



- b. the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor or the Contractor's Subcontractors of any tier; and
  - c. other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.
2. The Contractor shall give notices and comply with applicable laws, standards, codes, ordinances, rules, regulations, and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury, or loss.
3. The Contractor shall erect and maintain, as required by existing conditions and performance of the Contract, safeguards for safety and protection, including, but not limited to, posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.
4. When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise the highest degree of care and carry on such activities under supervision of properly qualified personnel.
5. The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in this Section caused in whole or in part by the Contractor, a Subcontractor of any tier, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable, and for which the Contractor is responsible under this Section, except damage or loss attributable solely to acts or omissions of Owner or the Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's other obligations stated elsewhere in the Contract.
6. The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents, and the maintaining, enforcing and supervising of safety precautions and programs. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner's Representative and Architect. The Contractor shall hold regularly scheduled safety meetings to instruct Contractor personnel on safety practices, accident avoidance and prevention, and the Project Safety Program. The Contractor shall furnish safety equipment and enforce the use of such equipment by its employees and its subcontractors of any tier.
7. The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.
8. The Contractor shall promptly report in writing to the Owner all accidents arising out of or in connection with the Work which cause death, lost time injury, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported immediately.
9. The Contractor shall promptly notify in writing to the Owner of any claims for injury or damage to personal property related to the work, either by or against the Contractor.
10. The Owner assumes no responsibility or liability for the physical condition or safety of the Work site or any improvements located on the Work site. The Contractor shall be solely responsible for providing a safe place for the performance of the Work. The Owner shall not be required to make any adjustment in either the Contract Sum or

Contract Time concerning any failure by the Contractor or any Subcontractor to comply with the requirements of this Paragraph.

11. In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences or procedures or for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the Owner in the Contract Documents.
12. The Contractor shall maintain at his own cost and expense, adequate, safe and sufficient walkways, platforms, scaffolds, ladders, hoists and all necessary, proper, and adequate equipment, apparatus, and appliances useful in carrying on the Work and which are necessary to make the place of Work safe and free from avoidable danger for clients, staff, the public and construction personnel, and as may be required by safety provisions of applicable laws, ordinances, rules regulations and building and construction codes.

**END OF SECTION 013513.28**

## **SECTION 015000 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes requirements for construction facilities and temporary controls including temporary utilities, support facilities, security, and protection.
- B. Temporary utilities required for construction operations or for continued occupancy of the facility by the owner, include, but are not limited to, the following:
  - 1. Water service and distribution
  - 2. Temporary electric power and light
  - 3. Temporary heat
  - 4. Ventilation
  - 5. Sanitary facilities, including drinking water
  - 6. Storm water and drains required during roofing and downspout work
- C. Support facilities include, but are not limited to, the following:
  - 1. Shoring, Bracing and scaffolding.
  - 2. Temporary project identification signs and bulletin boards
  - 3. Waste disposal services
  - 4. Construction aids and miscellaneous services and facilities
- D. Security and protection facilities include, but are not limited to, to following:
  - 1. Security Enclosure and Lockup

#### **1.3 SUBMITTALS**

- A. Implementation and Termination Schedule: Within (15) days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.

#### **1.4 QUALITY ASSURANCE**

- A. Regulations: Comply with industry standards and applicable laws and regulations including, but not limited to, the following:
  - 1. Building code requirements
  - 2. Health and safety regulations

3. Utility company regulations
  4. Police, fire department, and rescue squad rules
  5. Environmental protection regulations
- B. Standards: Comply with NFPA 241 “Standard for Safeguarding Construction, Alterations, and Demolition Operations”. ANSI A10 Series standards for “Safety Requirements for Construction and Demolition”, and NECA Electrical Design Library “Temporary Electrical Facilities”.
1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 “National Electric Code”.
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

## **1.5 PROJECT CONDITIONS**

- A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist onsite.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. General: Provide new materials. If acceptable to the Designer, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section “Rough Carpentry”.
1. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sized and thicknesses indicated.
  2. For fences and vision barriers, provide minimum 3/9” (9.5mm) thick exterior plywood.
  3. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8” (16mm) thick exterior plywood.
- C. Paint: Comply with requirements of Division 9 Section “Painting”.
1. For job-built temporary offices, shops, sheds, fences, and other exposed lumber and plywood, provide exterior-grade acrylic-latex emulsion over exterior primer.

2. For sign panels and applying graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
  3. For interior walls of temporary offices, provide two (2) quarts interior latex-flat wall paint.
- D. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of (15) or less. For temporary enclosures, provide translucent, nylon-reinforced laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- E. Water: Provide potable water approved by local health authorities.
- F. Open-Mesh Fencing: Provide 0.120" (3mm) thick, galvanized 2" (50mm) chainlink fabric fencing 6' (2m) high with galvanized steel pipe posts, 1½" (38mm) ID for line posts and 2½" (64mm) ID for corner posts.

## 2.2 EQUIPMENT

- A. General: Provide new equipment. If acceptable to the Designer, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.
- B. Water Hoses: Provide ¾" (19mm), heavy-duty, abrasion-resistant, flexible rubber hoses 100' (30m) long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110 to 120V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage rating.
- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixture where exposed to moisture.
- F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
- G. Temporary Offices: Provide prefabricated or mobile units with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- H. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated re-circulation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

- I. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers, or a combination of extinguishers of NFPA-recommended classes for the exposures.
  1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

## **PART 3 - EXECUTION**

### **3.1 INSTALLATION**

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. Provide each Facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

### **3.2 TEMPORARY UTILITY INSTALLATION**

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
  1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
  2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
  3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
  4. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Designer. Neither the Owner nor Designer will accept cost or use charges as a basis of claims for Change Order.
- B. Temporary Water Service: The Owner will provide water for construction purposes from the existing building system. All required temporary extensions shall be provided and removed by the Contractor. Connection points and methods of connection shall be designated and approved by the Construction Representative.
- C. Temporary Electric Power Service: The Owner will provide electric power for construction lighting and power tools. Contractor's using such services shall pay all costs of temporary services, circuits, outlets, extension, etc.
- D. Temporary Lighting: When overhead floor or roof deck has been installed, provide temporary lighting with local switching.

- E. Temporary Heating and Cooling: The normal heating and/or cooling system of the building shall be maintained in operation during the construction. Should the Contractor find it necessary to interrupt the normal HVAC service to spaces, which have not been vacated for construction, such interruptions shall be pre-scheduled with the Construction Representative.
- F. Temporary Toilets: Install self-contained toilet units. Use of pit-type privies will not be permitted. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
  - 1. Shield toilets to ensure privacy.
  - 2. Provide separate facilities for male and female personnel.
  - 3. Provide toilet tissue materials for each facility.
- G. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a health and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
  - 1. Provide paper towels or similar disposable materials for each facility.
  - 2. Provide covered waste containers for used material.
  - 3. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
- H. Drinking-Water Facilities: Provide containerized, tap-dispenser, bottled-water drinking-water units, including paper supply.
  - 1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 degrees F to 55 degrees F.

### **3.3 SUPPORT FACILITIES INSTALLATION**

- A. General: Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.
  - 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Storage Facilities: The Owner will provide storage on site as designated by the Facility Representative or the Construction Representative. Area for use by the contractor for storage will be identified at the Pre-Bid Meeting.
- C. Construction Parking: Contractors must be prepared to discuss their storage and parking needs at the Pre-Bid Meeting. Parking for construction personnel cannot be provided onsite. All parking will be offsite. The contractor will have to park on the street, in city - owned lots or in commercial lots. Under no circumstances will any vehicle be parked in a fire lane. Parking on lawns shall be prohibited.

- D. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered “tools and equipment” and not temporary facilities.
- E. Project Identification and Temporary Signs: Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.
  - 1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details indicated.
  - 2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.
- F. Temporary Exterior Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.
- G. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than seven (7) days during normal weather or three (3) days when the temperature is expected to rise above 80°F (27°C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

### **3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION**

- A. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
  - 1. Storage: Where materials and equipment must be stored and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms near the site.

### **3.5 OPERATION, TERMINATION AND REMOVAL**

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.



1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
  2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Designer requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
    - a. Replace air filters and clean inside of ductwork and housing.
    - b. Replace significantly worn parts and parts subject to unusual operating conditions.
    - c. Replace lamps burned out or noticeably dimmed by hours of use.

**END OF SECTION 015000**

## **SECTION 017400 – CLEANING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

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

#### **1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for cleaning during the Project.
- B. Environmental Requirements: Conduct cleaning and waste-disposal operations in compliance with local laws and ordinances. Comply fully with federal and local environmental and anti-pollution regulations.
  - 1. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
  - 2. Burning or burying of debris, rubbish, or other waste material on the premises is not permitted.

### **PART 2 - PRODUCTS**

#### **2.1 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator for the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

### **PART 3 - EXECUTION**

#### **3.1 PROGRESS CLEANING**

- A. General
  - 1. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
  - 2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this Work.
  - 3. At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the jobsite.
  - 4. Provide adequate storage for all items awaiting removal from the jobsite, observing all requirements for fire protection and protection of the ecology.
- B. Site
  - 1. Daily, inspect the site and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.

2. Weekly, inspect all arrangements of materials stored onsite. Re-stack, tidy, or otherwise service all material arrangements.
3. Maintain the site in a neat and orderly condition at all times.

C. Structures

1. Daily, inspect the structures and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.
2. Weekly, sweep all interior spaces clean. "Clean" for the purposes of this paragraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and handheld broom.
3. In preparation for installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all equipment and materials required to achieve the required cleanliness.
4. Following the installation of finish floor materials, clean the finish floor daily while work is being performed in the space in which finish materials have been installed. "Clean" for the purposes of this subparagraph, shall be interpreted as meaning free from all foreign material which, in the opinion of the Construction Representative, may be injurious to the finish of the finish floor material.

### 3.2 FINAL CLEANING

- A. General: Provide final cleaning operations when indicated. Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit of Work to the condition expected from a commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
- B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for the entire Project or a portion of the Project.
  1. Clean the Project Site, yard and grounds, in areas disturbed by construction activities including landscape development areas, of rubbish, waste material, litter, and foreign substances.
  2. Sweep paved areas broom clean. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
  3. Remove petrochemical spills, stains, and other foreign deposits.
  4. Remove tools, construction equipment, machinery, and surplus material from the site.
  5. Remove snow and ice to provide safe access to the building.
  6. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
  7. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  8. Broom clean concrete floors in unoccupied spaces.

9. Vacuum clean carpet and similar soft surfaces removing debris and excess nap. Shampoo, if required.
  10. Clean transparent material, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
  11. Remove labels that are not permanent labels.
  12. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  13. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  14. Clean plumbing fixtures to a sanitary condition free of stains, including stains resulting from water exposure.
  15. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  16. Clean ducts, blowers, and coils if units were operated without filters during construction.
  17. Clean food-service equipment to a sanitary condition, ready and acceptable for its intended use.
  18. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs and defective and noisy starters in fluorescent and mercury vapor fixtures.
  19. Leave the Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests. Comply with regulations of local authorities.
- D. Removal of Protection: Remove temporary protection and facilities installed during construction to protect previously completed installations during the remainder of the construction period.
- E. Compliances: Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of lawfully.
1. Where extra materials of value remain after Final Acceptance by the Owner, they become the Owner's property.

END OF SECTION 017400

## **SECTION 017900 - DEMONSTRATION AND TRAINING**

### **PART 1 - GENERAL**

#### **1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

#### **1.2 SUMMARY**

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
  - 1. Demonstration of operation of systems, subsystems, and equipment.
  - 2. Training in operation and maintenance of systems, subsystems, and equipment.
  - 3. Demonstration and training video recordings.

#### **1.3 INFORMATIONAL SUBMITTALS**

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.
- C. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

#### **1.4 CLOSEOUT SUBMITTALS**

- A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
  - 1. Identification: On each copy, provide an applied label with the following information:
    - a. Name of Project.
    - b. Name and address of videographer.
    - c. Name of Architect.
    - d. Name of Construction Manager.
    - e. Name of Contractor.
    - f. Date of video recording.
  - 2. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.

3. At completion of training, submit complete training manual(s) for Owner's use in PDF electronic file format on compact disc.

## **1.5 QUALITY ASSURANCE**

- A. **Facilitator Qualifications:** A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. **Instructor Qualifications:** A factory-authorized service representative experienced in operation and maintenance procedures and training.
- C. **Pre-Instruction Conference:** Conduct conference at Project site to comply with requirements in Section 013100 "Coordination". Review methods and procedures related to demonstration and training including, but not limited to, the following:
  1. Inspect and discuss locations and other facilities required for instruction.
  2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
  3. Review required content of instruction.
  4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

## **1.6 COORDINATION**

- A. 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.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

## **PART 2 - PRODUCTS**

### **2.1 INSTRUCTION PROGRAM**

- A. **Program Structure:** Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. **Training Modules:** Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
  1. **Basis of System Design, Operational Requirements, and Criteria:** Include the following:

- a. System, subsystem, and equipment descriptions.
  - b. Performance and design criteria if Contractor is delegated design responsibility.
  - c. Operating standards.
  - d. Regulatory requirements.
  - e. Equipment function.
  - f. Operating characteristics.
  - g. Limiting conditions.
  - h. Performance curves.
2. Documentation: Review the following items in detail:
- a. Emergency manuals.
  - b. Operations manuals.
  - c. Maintenance manuals.
  - d. Project record documents.
  - e. Identification systems.
  - f. Warranties and bonds.
  - g. Maintenance service agreements and similar continuing commitments.
3. Emergencies: Include the following, as applicable:
- a. Instructions on meaning of warnings, trouble indications, and error messages.
  - b. Instructions on stopping.
  - c. Shutdown instructions for each type of emergency.
  - d. Operating instructions for conditions outside of normal operating limits.
  - e. Sequences for electric or electronic systems.
  - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
- a. Startup procedures.
  - b. Equipment or system break-in procedures.
  - c. Routine and normal operating instructions.
  - d. Regulation and control procedures.
  - e. Control sequences.
  - f. Safety procedures.
  - g. Instructions on stopping.
  - h. Normal shutdown instructions.
  - i. Operating procedures for emergencies.
  - j. Operating procedures for system, subsystem, or equipment failure.
  - k. Seasonal and weekend operating instructions.
  - l. Required sequences for electric or electronic systems.
  - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
- a. Alignments.
  - b. Checking adjustments.
  - c. Noise and vibration adjustments.
  - d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:
  - a. Diagnostic instructions.
  - b. Test and inspection procedures.
7. Maintenance: Include the following:
  - a. Inspection procedures.
  - b. Types of cleaning agents to be used and methods of cleaning.
  - c. List of cleaning agents and methods of cleaning detrimental to product.
  - d. Procedures for routine cleaning
  - e. Procedures for preventive maintenance.
  - f. Procedures for routine maintenance.
  - g. Instruction on use of special tools.
8. Repairs: Include the following:
  - a. Diagnosis instructions.
  - b. Repair instructions.
  - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
  - d. Instructions for identifying parts and components.
  - e. Review of spare parts needed for operation and maintenance.

### **PART 3 - EXECUTION**

#### **3.1 PREPARATION**

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 007213 "General Conditions".
- B. Set up instructional equipment at instruction location.

#### **3.2 INSTRUCTION**

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
  1. Owner will furnish an instructor to describe Owner's operational philosophy.
  2. Owner will furnish Contractor with names and positions of participants.
- B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  1. Schedule training with Owner with at least seven days' advance notice.
- C. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.



- D. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

### **3.3 DEMONSTRATION AND TRAINING VIDEO RECORDINGS**

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
  - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Video: Provide minimum 640 x 480 video resolution converted to format file type acceptable to Owner, on electronic media.
  - 1. Electronic Media: Read-only format compact disc acceptable to Owner, with commercial-grade graphic label.
  - 2. File Hierarchy: Organize folder structure and file locations according to project manual table of contents. Provide complete screen-based menu.
  - 3. File Names: Utilize file names based upon name of equipment generally described in video segment, as identified in Project specifications.
  - 4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the Equipment Demonstration and Training DVD that describes the following for each Contractor involved on the Project, arranged according to Project table of contents:
    - a. Name of Contractor/Installer.
    - b. Business address.
    - c. Business phone number.
    - d. Point of contact.
    - e. E-mail address.
- C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.
  - 1. Film training session(s) in segments not to exceed 15 minutes.
    - a. Produce segments to present a single significant piece of equipment per segment.
    - b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
    - c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.
- D. Light Levels: Verify light levels are adequate to properly light equipment. Verify equipment markings are clearly visible prior to recording.
  - 1. Furnish additional portable lighting as required.
- E. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed.

- F. Transcript: Provide a transcript of the narration. Display images and running time captured from videotape opposite the corresponding narration segment.
- G. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

**END OF SECTION 017900**

## SECTION 024119 - SELECTIVE DEMOLITION

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Demolition and removal of selected portions of building or structure.
2. Salvage of existing items to be reused or recycled.

#### 1.2 MATERIALS OWNERSHIP

##### A. Unless otherwise indicated, demolition waste becomes property of Contractor.

##### B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

#### 1.3 PREINSTALLATION MEETINGS

##### A. Pre-demolition Conference: Conduct conference at Project site

#### 1.4 INFORMATIONAL SUBMITTALS

##### A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

##### B. Schedule of selective demolition activities with starting and ending dates for each activity.

##### C. Pre-demolition photographs or video.

#### 1.5 FIELD CONDITIONS

##### A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

##### B. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

##### C. Hazardous Materials: It is expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Contractor as part of the Work.

- a. ACM Abatement
- b. Lead Based Paint Removal

- D. Storage or sale of removed items or materials on-site is not permitted.
- E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
  - 1. Maintain fire-protection facilities in service during selective demolition operations.
- F. Arrange selective demolition schedule so as not to interfere with Owner's operations.

## 1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials and using approved contractors so as not to void existing warranties.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSP A10.6 and NFPA 241.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Inventory and record the condition of items to be removed and salvaged.

### 3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
  - 1. Arrange to shut off utilities with utility companies.
  - 2. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
  - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
  - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
  - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
  - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
  - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
  - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
  - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

### 3.3 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
  1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
  2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
  3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
  4. Maintain fire watch during and for at least 8 hours after flame-cutting operations.
  5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
  6. Dispose of demolished items and materials promptly
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Removed and Reinstalled Items:
  1. Clean and repair items to functional condition adequate for intended reuse.
  2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  3. Protect items from damage during transport and storage.

4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Owner, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

### 3.4 CLEANING

- A. Remove demolition waste materials from Project site and dispose of them in an EPA-approved construction and demolition waste landfill acceptable to authorities having jurisdiction.
  1. Do not allow demolished materials to accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

## SECTION 02 82 00 –ASBESTOS REMEDIATION

### PART 1 - GENERAL

#### 1.1 PROJECT/WORK IDENTIFICATION

- A. General: The work specified herein shall be the abatement of asbestos containing materials by certified and registered persons who are knowledgeable, qualified and trained in the abatement, handling, and disposal of asbestos containing material, and subsequent cleaning of the affected environment.
- B. The contractor shall supply all labor, materials, equipment, testing, services, permits, notifications, insurance and incidentals which are necessary or required to perform the work in accordance with applicable local, state and federal regulations as may be necessary for the abatement of asbestos containing materials and for other work as specified in this section or as indicated in associated drawings, sketches, or details of the work.
- C. Scope of Work:  
  
Abate/remove previously identified asbestos containing asphaltic roofing and black flashing caulk.
- D. All asbestos abatement work areas must pass visual inspection. Due to the exterior nature of the work, final air clearance sampling is not required.

#### 1.2 LIST OF MATERIALS CONTAINING ASBESTOS (TO BE ABATED)

| Material                              | Location           | Asbestos Content | Total Quantity     |
|---------------------------------------|--------------------|------------------|--------------------|
| Flat roofing (bottom asphaltic layer) | Upper (Main) Roof  | 46% Chrysotile   | 51,550 square feet |
| Black flashing caulk                  | Lower (North) Roof | 16% Chrysotile   | 20 linear feet     |
| Flat roofing (bottom asphaltic layer) | Lower (North) Roof | 47% Chrysotile   | 1,700 square feet  |

Contractor is responsible for verifying all materials and quantities identified above prior to submitting their bid. The Asbestos report is included as an appendix to the specifications. SCI's survey and specification are based on the demolition plans provided.

#### 1.3 TERMINOLOGY/DEFINITIONS/ABBREVIATIONS

- A. Definitions:
- Abatement: The Encapsulation, Enclosure and/or Removal of Asbestos Containing Materials (ACM). For Category I Non-friable ACM which will remain non-friable throughout disposal abatement procedures will be modified and simplified as found within these and other applicable regulations.
  - Adequately Wet: To sufficiently mix or penetrate with liquid to prevent the release of particulates.
  - AHERA: Asbestos Hazard Emergency Response Act of 1966 (P.L. 99-519).

4. Aggressive Air Sampling: Sweeping of floors, ceilings and walls and other surfaces with the exhaust of a minimum of one (1) horsepower leaf blower or equivalent immediately prior to air monitoring.
5. Air Sampling Professional: An individual, certified by the State of Missouri, who supervises air sampling activities during asbestos abatement projects.
6. Air Sampling Technician: An individual, under the supervision of an Air Sampling Professional, who performs air sampling during asbestos abatement projects.
7. Asbestos: The asbestiform varieties of serpentinite (chrysotile, antigorite), riebeckite (crocidolite), cummingtonite-grunerite (amosite), anthophyllite and actinolite-tremolite. For purposes of determining respiratory and worker protection both the asbestiform and non-asbestiform varieties of the above materials and any of these materials that have been chemically treated and/or altered shall be considered as asbestos.
8. Asbestos Abatement Project Designer: An individual, certified by the State of Missouri, who prepares asbestos abatement project designs, primarily associated with AHERA-related projects.
9. Asbestos Abatement Supervisor: An individual, certified by the State of Missouri, who directs, controls, and/or supervises workers during an asbestos abatement project.
10. Asbestos Abatement Worker: An individual, certified by the State of Missouri, who performs asbestos abatement.
11. Asbestos-Containing Material (ACM): Any material or product which contains more than 1 percent (1%) asbestos by weight as determined by using the Polarized Light Microscopy method.
12. Asbestos-Containing Building Material (ACBM): Surfacing ACM, thermal system insulation ACM, or miscellaneous ACM that is found in or on building components.
13. Asbestos Containing Building Material (ACBM) Repair: The restoration of ACBM to an undamaged condition or to an intact state so as to prevent fiber release.
14. Asbestos-Containing Waste Material (ACWM): Any material to be removed from a work area for disposal that is an asbestos containing material (ACM) or is suspected of being contaminated with ACM.
15. Barrier: Any surface that seals off the work area to inhibit the movement of asbestos fibers.
16. Breathing Zone: A hemisphere forward of the shoulders with a radius of approximately 6 to 9 inches.
17. Category I Non-friable ACM: Asbestos-containing packings, gaskets, resilient floor covering and asphalt roofing products containing more than one percent (1%) asbestos as determined using the method specified in 40 CFR part 763, subpart F, Appendix A, section 1, Polarized Light Microscopy.
18. Category II Non-friable ACM: Any material, excluding category I non-friable ACM, containing more than one percent (1%) asbestos as determined using the methods specified in 40 CFR part 768, subpart F, Appendix A, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized or reduced to powder by hand pressure.
19. Certified Industrial Hygienist (C.I.H.): An industrial hygienist, certified in Comprehensive Practice by the American Board of Industrial Hygiene.
20. Competent Person: An individual, capable of identifying existing asbestos hazards in the workplace and who has authority to take prompt corrective measures to eliminate them. His duties include: establishing the negative-pressure enclosure, ensuring its integrity, and controlling entry to and exit from the enclosure; supervising any employee exposure monitoring; ensuring that all employees working within such an enclosure wear the appropriate personal protective equipment, are trained in the use of appropriate methods of exposure control, and in the use of hygiene facilities and decontamination procedures; and ensuring that engineering controls in use are in proper operating condition and are



- functioning properly. An individual who has been certified by the State of Missouri as an Asbestos Abatement Supervisor is considered a "Competent Person".
21. Construction Administrator: An employee of the Division of Design and Construction representing the Director during the construction phase of the contract commencing at Notice of Award.
  22. Containment: Area where asbestos abatement project is conducted. Area must be enclosed either by a glove bag or plastic sheeting barriers.
  23. Critical Barrier: Plastic sheeting or other material to be placed over Work Area openings (i.e., windows, HVAC supply and return vents, doors, electrical fixtures, etc.).
  24. Decontamination Facility: The serial arrangement of rooms or spaces for the purpose of separating the work site from the building environment upon entering the Work Area and for the cleaning of persons, equipment and contained waste prior to returning to the clean environment.
  25. Disposal Bag: A properly labeled 6 mil. thick leak-tight clear plastic bag used for transporting asbestos waste from work site and to the disposal site.
  26. Encapsulant (Sealant): A liquid material which can be applied to asbestos-containing material and which prevents the release of asbestos fibers from the ACM either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the ACM and binding its components together (penetrating encapsulant) or is specifically designed to minimize fiber release during removal of ACM (removal encapsulant).
  27. Encapsulation: Treatment of asbestos-containing materials with an encapsulant.
  28. Enclosure: The construction of an airtight, impact resistant barrier to isolate a surface coated with ACM.
  29. Friable: Any material which when dry, can be crumbled, pulverized, or reduced to powder by hand pressure.
  30. Glove Bag: A manufactured or fabricated device, typically constructed of six (6) mil transparent polyethylene or polyvinyl chloride plastic. This device consists of two (2) inward projecting long sleeves, an internal tool pouch and an attached, labeled receptacle for asbestos waste.
  31. Initial Exposure Assessment: Is a required assessment to be performed by the Contractor's Competent Person (Asbestos Abatement Supervisor) concerning the exposure potential of a specific asbestos projects, or series of similar asbestos projects. If it is concluded that the employee exposures during the project are likely to be consistently below the Permissible Exposure Limit, the Contractor establishes a Negative Initial Exposure Assessment.
  32. Outside Air: Air outside containment.
  33. Permissible Exposure Limit (PEL): Eight-hour time weighted average of 0.1 fibers/cubic centimeter.
  34. Personal Monitoring: Sampling of the asbestos fiber concentrations within the Breathing Zone.
  35. Regulated Asbestos-Containing Material (RACM): Friable asbestos material; Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
  36. Removal: To take out or eliminate ACM from building components, materials, substrates.
  37. Third Party Air Monitor (TPAM): The Air Sampling Professional who conducts air monitoring in who is not under the direct control of the abatement contractor and who has been selected by the owner.
  38. Visible Emission: Any discharge of an air contaminant into the atmosphere that is visually detectable without the aid of instruments.

39. Work Area: A specific room or physically isolated portion of a room, other than the space enclosed within a glove bag, in which friable asbestos-containing material is required to be handled in accordance with current federal and state regulations. The area is designated as a work area from the time that the room, or portion of it, is secured and access restrictions are in place. The area remains designated as a work area until the time that it has been cleaned in accordance with any requirements applicable to the operations conducted.

B. Abbreviations:

1. AIA: American Institute of Architects
2. AIHA: American Industrial Hygiene Association
3. MoDNR: Missouri Department of Natural Resources
4. DEQ: Division of Environmental Quality, MoDNR
5. DOT: U. S. Department of Transportation
6. EPA: U. S. Environmental Protection Agency
7. MDH: Missouri Department of Health
8. NIOSH: National Institute for Occupational Safety and Health
9. NVLAP: National Voluntary Laboratory Accreditation Program
10. OSHA: Occupational Safety and Health Administration, U. S. Department of Labor.
11. SLCDOH: St. Louis County Department of Health
12. TPAM: Third Party Air Monitor

#### 1.4 SUMMARY OF REQUIREMENTS

- A. All work performed on this project shall be done in the strictest accordance with applicable federal, state and local regulations, standards and codes governing asbestos abatement and any other trade work done in conjunction with the abatement. All applicable codes, regulations and standards are adopted into this specification and will have the same force and effect as this specification.
- B. The most recent edition of any relevant regulation, standard, document or code shall be in effect. Where conflict among requirements or these specifications exists, the most stringent requirements shall be utilized.
- C. Because asbestos exposure is a serious health hazard, construction work involving any asbestos-containing materials is regulated by the Occupational Safety and Health Administration Regulations. Compliance with OSHA regulations in the completion of this project is the **sole** responsibility of the contractor. OSHA regulations include, but are not limited to, conducting appropriate negative exposure assessments and/or daily personnel air monitoring. However, the following requirements will apply regardless of the removal methods to be employed:
  - a. Regardless of the removal methods employed, the contractor shall immediately stop work in the event of any of the following:
    - 1) Visible Emissions (as defined in this document), or
    - 2) Sanding, grinding, cutting abrading, removal by open flame, or
    - 3) Breathing Zone air samples exceed the PEL or Excursion Limit; furthermore, the contractor shall implement corrective work practices upon the approval of the Asbestos Abatement Project Designer, make re-notification to all

regulatory agencies of the changes in work practices and material conditions, and comply with all referenced regulations in this document and the applicable sections of this specification as noted.

- b. If any of the conditions in subparagraph a above are observed by the Construction Administrator or by the Third-Party Air Monitor (TPAM), then either of these parties has the right to issue a directive to stop work. The Contractor shall be obligated to implement corrective action. The contractor shall not be entitled to additional compensation.
- D. NON-FRIABLE ACM. This scope of work includes the removal of Non-friable ACM and therefore, all applicable federal, state, and local requirements, including notifications, should be followed.
1. Notifications are not required in compliance with Section 2.1 of this specification.
  2. Remove and dispose of all non-friable asbestos containing materials in compliance with the federal and state regulations as listed, but not necessarily limited to, those under section 3.0 of this specification.

## 1.5 PROJECT COORDINATION

- A. Contractor shall coordinate and schedule all phases of the work of the contract documents under his control with the Construction Administrator, Facility Representative, any subcontractors, materials suppliers and other parties involved as necessary to ensure the smooth and orderly transition of separate phases, timely placement of items and materials, cooperation between parties, and proper execution of the work.
- B. All coordination necessary with the facility will be made through the Facility Representative or their designated representative. The Construction Administrator and Facility Representative prior to the start of any work, will approve scheduling, and access to the work areas.
- C. Normal working hours of the facility will be observed in performing the work unless the Facility Representative and Construction Administrator approve the modification as addressed in the Special Conditions.
- D. Contractor shall coordinate any news media inquiries or releases with the Facilities Management Design and Construction Division at (573) 751-3339.
- E. The contractor, project superintendent, subcontractors and other appropriate parties shall attend meetings as scheduled and as otherwise necessary to accomplish the work in a timely and efficient manner. Meetings shall include but are not limited to the following:
  1. Pre-Construction Meeting: the Construction Administrator will schedule the pre-construction meeting after the Notice of Award has been issued. The Construction Administrator will determine the date, time, and exact place of this meeting and all necessary parties will be notified. During the meeting, discussions will be held in regard to construction procedures, scheduling requirements, general conditions, special conditions, channels of communication, responsible persons, requirement's for submittals, documentation requirements, payment applications and other pertinent information

necessary for completing the work. Specific requirements of the facility in regard to security, safety, utilities, access to buildings and related matters will also be discussed.

2. If, in the opinion of the Construction Administrator, additional meetings are required to maintain progress or scheduling requirements on the work, additional meetings will be scheduled.
- F. All fees required for notification requirements, re-notifications, and/or inspections by the Department of Natural Resources and all other federal, state, or local agencies shall be paid by the contractor. If necessary, bulk samples analysis information required in conjunction with the notification to the Missouri Department of Natural Resources, U. S. Environmental Protection Agency or city having jurisdiction shall be provided by the contractor unless provided within this specification.
- G. Should the project fall behind schedule, the abatement contractor is expected to take such steps, as necessary, to complete the project on time. The contractor will be entitled to no additional compensation for implementation of such steps to maintain the work schedule.

## **PART 2 - EXECUTION**

### **2.1 NOTIFICATIONS**

- A. If material being removed amounts to more than 260 LF, 160 SF or 35 cubic feet or if abatement is being done prior to a demolition, Notification shall be completed and sent by the contractor not less than ten (10) days before the intended starting date of the project. For amounts less than the above, contractor shall send a courtesy Notification. Use EPA form "Notification of Demolition and Renovation", and the MoDNR form "Asbestos Project Notification", to the following:
1. Department of Natural Resources  
Air Pollution Control Program (ASBESTOS)  
P. O. Box 176  
Jefferson City, MO 65102
  2. Provide copies of these notifications to the state's independent oversight consultant, the Construction Administrator.
- B. A Post-Notification report shall be completed and sent by the Contractor to the agencies listed in 2.1A above within forty-five (45) days of the completion of the project. The MoDNR form "Asbestos Post Notification" is to be used for that purpose.

### **2.2 SUBMITTALS**

- A. The following submittals will be required of the contractor prior to commencement of work and are subject to approval by the Construction Administrator. The contractor shall send one copy of the submittals for approval and then send approved copies of the submittals to the distribution list as discussed at the Pre-Construction Conference.

1. Copy of Safety Data Sheets (SDS) for each product to be used by the contractor in the performance of his work. Contractor will also maintain copies of the SDS on-site, per OSHA.
  2. A copy of the notifications to regulatory agencies as required in Section 2.1 of this specification.
  3. Current training certificates and MoDNR licenses for project superintendent, asbestos abatement supervisor(s) and asbestos workers. Superintendent shall meet the qualifications established in Section 3.8 of these specifications. EPA RRP training certificates shall also be provided.
  4. Name, address and contact person's name of testing laboratory or laboratories to be utilized by the contractor (this is not the TPAM) in analyzing samples for bulk analysis or air monitoring. Required by OSHA.
  5. Provide a detailed work schedule with milestones for the completion of the project within the established timeframe.
  6. Provide a disposal plan to detail the types of disposal containers to be used, the methods of transportation to the disposal site, the waste hauler and disposal site.
  7. Copies of notifications required as part of the emergency notification plan in Section 2.6 of this specification.
- B. Upon completion of the work and prior to final payment, the following information must be submitted to the Construction Administrator.
1. Waste disposal receipts and waste shipment record on all asbestos waste removed from the project. The enclosed Waste Shipment Record and Receipt form (or something similar) must be used for every load brought to the waste disposal site. The disposal and/or shipment record must include the following information:
    - a. Work site name and address;
    - b. Project Number;
    - c. Owner's name and telephone;
    - d. Operator's (Contractor's) name, address and telephone;
    - e. Waste Disposal Site name, address and telephone;
    - f. Name and address of responsible agency;
    - g. Type of materials and quantity in cubic yards or tons;
    - h. Name, address and phone number of transporter, and date of transport; and
    - i. Name, address and phone number of Waste Disposal Site representative and date material was received.
  2. Written certification from the TPAM as required in Section 2.7 of this specification.
  3. MoDNR "Asbestos Post Notification" form, within forty-five (45) days of the completion of the project.
  4. Any other specific requirements spelled out in the General Conditions.

### **2.3 TESTING LABORATORY**

- A. Testing laboratories utilized by the contractor for OSHA required sample analysis during the project shall meet the following minimum requirements:

1. For bulk sample analysis, the laboratory must be accredited by the National Voluntary Laboratory Accreditation Program for asbestos fiber analysis.
2. For air samples analyzed by Phase Contrast Microscopy, the laboratory must be accredited by the American Industrial Hygiene Association.
3. For air samples analyzed by Transmission Electron Microscopy, the laboratory must be accredited by the National Voluntary Laboratory Accreditation Program.
4. On-site analysis by Phase Contrast Microscopy, when applicable, shall be by an Air Sampling Technician or Air Sampling Professional who has completed a NIOSH 582 course or equivalent.
5. Neither the contractor, nor any of his principals, officers, or directors may have any financial or business interests in any laboratory utilized on this contract.

#### **2.4 LOCAL AREA PROTECTION/SITE SECURITY**

- A. The contractor shall be responsible for all areas of the building used by him and/or subcontractors in the performance of the work. He shall exert full control over the actions of all employees and subcontractors with respect to the use and preservation of the existing building, except such controls as may be specifically reserved to the owner by these specifications.
- B. The contractor has the right to exclude from the work area all persons who have no purpose related to the work or its inspection, and shall require all persons in the work area to observe the same regulations as he requires his employees.
- C. The contractor shall have control of site security during abatement operations in order to protect his work and equipment. He will have the owner's assistance in notifying building occupants of impending activity and enforcement of restricted access by owner's employees.
- D. The contractor shall keep, as a minimum, two 10 lbs. type ABC fire extinguishers on-site at all times. One extinguisher will be maintained outside the work area and one inside the work area. The contractor's employees shall be trained in the use and operation of the extinguishers.
- E. The contractor shall use as small an area as necessary for storage of supplies and equipment and shall keep such in a neat and orderly fashion.
- F. Contractor is prohibited from entering portions of the building not required for completion of their scope of work.
- G. The contractor shall maintain the work area free from rubbish, debris, and dirt and keep a clean safe work area. The contractor shall take measures to keep surfaces free from contamination or shall clean and lock down surfaces after work is done, protect with plastic sheeting and/or plywood during work, or remove from the work area. Trash must be removed daily and will not be allowed to accumulate.
- H. Contractor is responsible for all damage to the structure other than that required for the removal of the ACMs. At the conclusion of the project, the contractor must repair such incidental damage including tape and glue residue, paint coatings and damage to surfaces, finishes and building components.

## **2.5 WORKER PROTECTION/TRAINING**

- A. The contractor shall be responsible for providing his employees with proper respiratory protection, respiratory training, a written respirator program, medical examinations, protective clothing, and equipment, and for maintaining medical records to comply with OSHA requirements.
- B. The contractor shall be responsible for all testing and costs incurred for complying with the requirements of OSHA regulations for Personal Monitoring.
- C. All workers are to be trained in the dangers inherent in handling asbestos, breathing asbestos dust, and in proper work procedures and personal and protective measures.

## **2.6 EMERGENCY PROTECTION PLAN**

- A. The contractor shall be responsible for developing a written site-specific Emergency Protection Plan and shall maintain this plan on-site. The plan shall include considerations for asbestos leakage from site, fire, explosion, toxic atmospheres, electrical hazards, slips, falls and heat related injury. All employees shall be instructed and trained in the procedures.
- B. Emergency protection planning shall also include written notification of police, fire and medical personnel of the planned abatement activities, work schedule, and the layout of the work area, particularly barriers that may affect response capabilities.

## **2.7 THIRD PARTY AIR MONITORING**

- A. The Contractor will contract with an independent Air Sampling Professional, acceptable to the Construction Administrator, to perform the following minimum duties:
  - 1. Review Contractor's work plan and provide his recommendations.
  - 2. Provide Construction Administrator with daily abatement reports describing amount and type of work done, regulatory concerns, notable air monitoring reports, etc.
  - 3. A visual inspection of the work area will be conducted prior to clearance.
  - 4. Certify that the contractor's procedures, methods, and practices were in full compliance with current federal or state regulations.
- B. The TPAM must be independent from the abatement contractor.

## **2.8 SUPERINTENDENCE OF ABATEMENT**

- A. The contractor shall designate an abatement superintendent, who will serve as the contractor's representative on the project and will ensure that all work is performed in compliance with all applicable regulations and following minimum requirements:
  - 1. The Abatement Superintendent must be certified as an Asbestos Abatement Supervisor and must have at least one-year full time experience in asbestos abatement work.
  - 2. Shall be on-site whenever work is going on.
  - 3. Maintain a daily log documenting project events, visitations/inspections, problems, and accidents.
  - 4. Implement first aid, safety training, respiratory protection and ensure workers are trained in emergency procedures.

5. Conduct visual inspection of the work area prior to TPAM's final clearance inspection. This inspection shall be documented.
6. Supervise activities of any subcontractors of the contractor to ensure compliance with contract documents.
7. Duties shall include those for the "Competent Person" as defined in this specification.
8. Superintendent must have a cellular telephone when at the project site and the contact information for the supervisor provided to the construction manager and TPAM.

## **2.9 FINAL CLEARANCE REQUIREMENTS**

- A. Following the completion of the abatement work, the abatement superintendent shall notify the Construction Administrator. The superintendent shall then perform a visual inspection of the work area. If satisfactory, he shall contact the TPAM. The TPAM shall perform a visual inspection. Due to the exterior nature of the work, final air clearance sampling is not required.
- B. Any work areas failing to meet the clearance requirements of this section shall be re-cleaned and re-tested at the contractor's expense until satisfactory levels are obtained. The owner will not reimburse the contractor for re-cleaning the work area. The TPAM will separate their costs of any re-testing from their already agreed upon services. The owner will deduct, by contract change, the cost of the TPAM's re-testing activities including any lab fees, travel and re-inspection and/or air monitoring fees from the contractor's contract amount.

## **2.10 RE-ESTABLISHMENT OF THE WORK AREA AND SYSTEMS (Asbestos)**

- A. Re-establishment of the work area shall only occur after the contractor has complied with the clearance requirements of Section 2.9. All barriers, signs, trash, and equipment shall then be removed from the site. All electrical and HVAC systems shall be re-established.
- B. All damage to finishes, equipment, and/or the area affected by the abatement shall be repaired by the contractor to equal or better condition as was prior to the work, at no cost to the owner.

## **2.11 WASTE DISPOSAL**

- A. All Asbestos Containing Waste Material (ACWM) shall be disposed of in compliance with current federal and state regulations.
- B. ACM shall be disposed of in a Missouri licensed demolition landfill or a sanitary landfill having a state permit to operate and accept such waste.
- C. A chain of custody letter/waste shipment record and disposal receipts shall be provided to the owner for all materials disposed of.
- D. The waste shipment record shall be originated and signed by the waste generator and shall be used to track and substantiate the disposition of ACM.

## **2.12 DRAWINGS**

- A. For the purpose of this specification, drawings, when provided, are not intended to be used for anything other than a "reference" to the work area. Information is not specific to quantities or to the exact location of ACM. The contractor is required to field verify the conditions, locations and quantities referenced.



### **3.0 CODES AND REGULATIONS**

- A. This section sets forth governmental regulations and industry standards which are included and incorporated herein by reference and made a part of this specification.
- B. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations and standards.
- C. **General Applicability of Codes, Regulations and Standards:** Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations standards, statutes, laws and rules have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith. In the event of conflicting applicable codes, regulations, standards, statutes, laws, or rules, the more stringent shall apply to these specifications.
- D. **Contractor Responsibility:** The contractor shall assume full responsibility and liability for compliance with all applicable federal, state and local regulations pertaining to work practices, hauling, disposal and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable federal, state and local regulations. The contractor shall hold the owner harmless for failure to comply with any applicable work, hauling, disposal, safety, health, record keeping or other regulation on the part of himself, his employees, or his subcontractors.
- E. Requirements which govern asbestos abatement work or hauling, and disposal of asbestos waste materials include but are not limited to the following:
  - 1. U. S. Department of Labor, Occupational Safety and Health Administration (OSHA) including but not limited to:
    - a. Title 20, Part 1910, Section 1001 and Part 1926, Section 58 of the Code of Federal Regulations.
    - b. Respiratory Protection, Title 29, Part 1910, Section 134 of the Code of Federal Regulations.
    - c. Construction Industry, Title 29, Part 1926, of the Code of Federal Regulations.
    - d. Access to Employee Exposure and Medical Records, Title, 29, Part 1910, Section 2 of the Code of Federal Regulations.
    - e. Hazard Communication, Title 29, Part 1910, Section 1200 of the Code of Federal Regulations.
    - f. Specifications for Accident prevention Signs and Tags, Title 29, Part 1910, Section 145 of the Code of Federal Regulations.
  - 2. U. S. Environmental Protection Agency (EPA) including but not limited to:
    - a. National Emission Standards for Hazardous Air Pollutants (NESHAPS) Title 40, Part 61, Subpart M of the Code of Federal Regulations.
    - b. Asbestos Hazard Emergency Response Act (AHERA), Public Law (99-519) applicable only on schools.

- c. Asbestos-Containing Materials in Schools: Title 40, Part 763 of the Code of Federal Regulations, applicable only on schools.
- 3. U. S. Department of Transportation (DOT)
  - a. Title 49, Part 172, Section 101 of the Code of Federal Regulations.
- 4. State of Missouri
  - a. H.B. 77, 85th General Assembly.
  - b. Missouri Air Conservation Law, Chapter 643.
  - c. Due to a recent court decision, the following Code of State Regulations do not apply to this specification:
    - 1) 10 CSR 10-6.020, Definitions
    - 2) 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants.
    - 3) 10 CSR 10-6.230, Administrative Penalties
    - 4) 10 CSR 10-6.240, Asbestos Abatement Projects-Registration, Notification and Performance Requirements.
    - 5) 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements.

END OF SECTION 02 82 00

## **SECTION 02 83 00 –PAINT REMOVAL, HANDLING AND DISPOSAL**

### **PART 1 - GENERAL**

#### **1.1 SUMMARY**

- A. General: Various paint removal and/or paint preparations needed as part of renovation activities. Some of the paint has begun to peel and is delaminated from the substrate which it was applied to. Paint removal and/or preparation includes the windowsills. It has been determined that the gray paint on the windowsills is lead-based paint and therefore all work shall be performed in accordance with the Environmental Protection Agency's Renovation, Repair and Painting (RRP) Program.
- B. The Contractor shall supply all labor, materials, equipment, services, permits, notifications, insurance, and incidentals which are necessary or required to perform the work in accordance with applicable local, state, and federal regulations for the Scope of work detail herein.
- C. All work must pass a final visual clearance performed by others.
- D. Third party environmental oversight will be performed through a contract between the General Contractor and an independent contractor approved by the Owner..
- E. All work must be performed by a Contractor who has been trained in accordance with the EPAs RRP Program.

#### **1.2 SUMMARY OF RENOVATION ACTIVITIES**

- A. The purpose of the renovation activities is to stabilize and repaint the peeling paint on the windowsills. The peeling paint, which has subsequently been identified as being lead-based, shall be removed, and prepped for repainting. All work must be performed by a Contractor who has been trained in accordance with the EPAs RRP Program and shall implement dust control measures prior to beginning work. All waste generated from this project shall be properly characterized, containerized, transported, and disposed of in accordance with the applicable local, state, and federal regulations.

The Contractor is responsible for verifying all field conditions and quantities prior to submitting their bid.

#### **1.3 TERMINOLOGY/DEFINITIONS/ABBREVIATIONS**

- A. Definitions:
  - 1. Administrative Control: Written policies prepared before work begins which remove or prevent exposure to physical, biological, or chemical hazards.
  - 2. Air Sampling Professional: An individual who by qualifications and experience is proficient in air monitoring and possesses a valid Missouri Certification and License.

3. Approved Waste Disposal Site: A solid waste disposal area that is authorized by the Department of Natural Resources to receive lead-based paint containing solid wastes.
4. Barrier: An envelope or containment that seals off the work area to inhibit the movement of particulate and dust particles.
5. Biological Monitoring: The analysis of a person's blood and/or urine, to determine the level of lead contamination in the body.
6. CFR: The Code of Federal Regulations, in the basic component of the Federal Register publication system. The CFR is a codification of the regulations of the various Federal Agencies.
7. Characteristics: The EPA has identified four characteristics of a hazardous waste: Ignitability; Corrosivity; Reactivity and Toxicity. Any solid waste that exhibits one or more of these characteristics is classified as a hazardous waste under RCRA.
8. Container: Any portable device, in which material is stored, transported, treated, disposed of, or otherwise handled.
9. Containment: A process for protecting both workers and the environment by controlling exposures to lead dust and debris created during renovation.
10. Contingency Plan: A document setting out an organized, planned, and coordinated course of action to be followed in case of a fire or explosion or a release of hazardous waste or hazardous waste constituents from the project site or a treatment, storage, or disposal facility that could threaten human health or the environment.
11. Contractor: Any business entity, public unit, or person, certified and licensed to conduct business in the State of Missouri and the employee have the EPA RRP training.
12. Discharge or Hazardous Waste Discharge: The accidental or intentional spilling, leaking, pumping, pouring, emitting, discharge emptying, or dumping of hazardous wastes onto any land or water or into the air.
13. Disposal Bag: A properly labeled 6 mil thick leak-tight plastic bag used for transporting waste from the work area to the disposal site.
14. Disposal Facility: A facility or part of a facility at which hazardous waste is intentionally placed into or on any land or water, and at which the waste will remain after closure.
15. EPA Identification Number: The unique number assigned by EPA to each generator or transporter of hazardous waste, and each treatment, storage, or disposal facility.
16. Exposure Monitoring: The personal air monitoring of an employee's Breathing Zone to determine the amount of contaminant (e.g. lead) to which he/she is exposed.

17. Federal Register: A document published daily by the federal government that contains either proposed or final regulations.
18. Generator: Any person who first creates a hazardous waste, or any person who first makes the waste subject to the Subtitle C regulation (e.g., imports a hazardous waste, initiates a shipment of a hazardous waste from a TSD, or mixes hazardous wastes of different DOT shipping descriptions by placing them into a single container).
19. Hazardous Waste: As defined in RCRA the term "hazardous waste" means a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may:
  - a. Cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
  - b. Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

As defined in the regulations a solid waste is hazardous if it meets one of four conditions:

- 1) Exhibits a characteristic of a hazardous waste (40 CFR Sections 261.20 through 262.24).
  - 2) Has been listed as hazardous (40 CFR Section 261.31 through 261.33).
  - 3) Is a mixture containing a listed hazardous waste and a non-hazardous solid waste (unless the mixture is specifically excluded or no longer exhibits any of the characteristics of hazardous waste).
  - 4) Is not excluded from regulations as a hazardous waste.
20. Landfill: A disposal facility or part of a facility where hazardous waste is placed in or on land and which is not a land treatment facility, a surface impoundment, or an injection well.
  21. Lead-Based Paint: Any surface coating (paint, varnish, shellac, etc.) that contains more than 600 parts per million (.06% by weight) as defined by the Consumer Products Safety Commission. Lead-based paint is 1 milligram of lead per square centimeter (1.0 mg/cm<sup>2</sup> as measured by XRF) or has a weight of 5,000 parts per million (.5% by weight) as defined by HUD.
  22. Lead (inorganic), Pb: An element, which means that its atomic structure is permanently arranged and is not changed by chemical reactions. Lead can combine chemically with other atoms or molecules to make new compounds. Lead is considered a heavy metal: "heavy," because lead weighs much more than the same volume of water, and

"metal," because when it is refined from raw ore into its pure form, lead can be hammered or drawn into shapes.

23. Listed: Hazardous wastes that have been placed on one of three lists developed by EPA: Non-specific source wastes; specific source wastes; commercial chemical products. These lists were developed by examining different types of waste and chemical products to see if they exhibit one of the four characteristics, meet the statutory definition of hazardous waste, are acutely toxic or acutely hazardous, or are otherwise toxic.
24. Manifest: The shipping document, EPA form 8700-22, used for identifying the quantity, composition, origin, routing, and destination of hazardous waste during its transportation from the point of generation to the point of treatment, storage, or disposal.
25. Owner: The State of Missouri.
26. Pattern: The process of identifying specific building components containing lead-based paint at a hazardous level within a project or group of buildings.
27. Permissible Exposure Limit or PEL: The highest average amount of lead that you are allowed to breathe over an 8-hour period. The OSHA PEL for General Construction is 50 ug/m<sup>3</sup>.
28. Personal Samples: (for sampling lead dust) - Air samples collected from within the Breathing Zone of a worker, but outside the respirator. The samples are collected with a personal sampling pump, pulling 1 to 4 liters/minute of air.
29. Project Manager: An employee of the Division of Facilities Management, Design and Construction, representing the Director during the length of the project.
30. RCRA: Resource Conservation and Recovery Act of 1976. An amendment to the Solid Waste Disposal Act of 1965. RCRA was amended in 1980 and most recently on November 8, 1984 by Hazardous and Solid Waste Amendments.
31. Regulation or Rule: All or part of any Federal statement of general or particular applicability and future effect designed to: (1) implement, interpret, or prescribe law or policy, or, (2) describe the Federal Department's organization or its procedures or practice requirements.
32. Representative Sample: A sample of a universe or whole (e.g., waste sample pile, lagoon, ground water, or waste stream) which can be expected to exhibit the average properties of the universe or whole.
33. Site: The land or water area where any facility is physically located or conducted, including adjacent land used in connection with the facility or activity.
34. Solid Waste: As defined in RCRA the term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution

control facility, and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under the Clean Water Act, or special nuclear or byproduct material as defined by the Atomic Energy Act of 1954.

35. Storage: The holding of hazardous waste for a temporary period, at the end of which time the hazardous waste is treated, disposed of, or stored elsewhere.
36. Substrate: A surface upon which a finish material (paint, etc.) has been or may be applied. Examples of substrates include wood, plaster, metal, and drywall.
37. Toxic Characteristic Leaching Procedure or TCLP: A test designed to identify wastes likely to leach hazardous concentrations of particular toxic constituents into the ground water as a result of improper management. This test provides the determination of whether a solid waste is classified as a hazardous substance.
38. Toxicity: A characteristic of hazardous waste as measured by the TCLP.
39. Transporter: Any person engaged in the off-site transportation of hazardous waste within the United States, by air, rail, highway, or water, if such transportation requires a manifest under 40 CFR Part 262.
40. Treatment: Any method, technique or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize it, or render it non-hazardous or less hazardous, or to recover it, make it safer to transport, store or dispose of, or amenable for recovery, storage, or volume reduction.
41. TSD: A treatment, storage, or disposal hazardous waste facility.
42. Waste Disposal Site: A solid waste disposal area that is authorized by the Missouri Department of Natural Resources to receive lead containing solid waste.
43. Waste Shipment Record: The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of lead containing waste material.

B. Abbreviations:

ASTM: American Society for Testing and Materials.

DNR: Missouri Department of Natural Resources, 10 CSR 25 – Hazardous Waste Management. 260.350 – 260.575 – RSMo.

DHSS: Missouri Department of Health & Senior Services – Lead Poisoning Prevention.

DOT: U.S. Department of Transportation

EPA: U.S. Environmental Protection Agency

FMDC: Missouri Division of Facilities Management, Design & Construction

NIOSH: National Institute for Occupational Safety and Health

NVLAP: National Voluntary Laboratory Accreditation Program

OSHA: Occupational Safety and Health Administration, U.S. Department of Labor

RRP: Remove Replace Paint

#### 1.4 SUMMARY OF REQUIREMENTS

- A. All work performed on this project shall be done in the strictest accordance with applicable federal, state, and local regulations, standards and codes governing the renovation activities described in this scope of work. All applicable codes, regulations and standards are adopted into this specification and will have the same force and effect as this specification.
- B. The most recent edition of any relevant regulation, standard, document, or code shall be in effect. Where conflict among requirements or these specifications exists, the most stringent requirements shall be utilized.
- C. Because ingestion or inhalation of lead containing dust is a serious health hazard, construction work involving lead-based paint is regulated by the Occupational Safety and Health Administration Regulations. Compliance with OSHA regulations in the completion of this project is the **sole** responsibility of the Contractor. OSHA regulations include, but are not limited to, conducting daily personnel air monitoring. However, the following requirements will apply regardless of the removal methods to be employed:
  - a. Regardless of the removal methods employed, the Contractor shall immediately stop work in the event of any of the following:
    - 1) Visible Emissions.
    - 2) Breathing Zone air samples exceed the PEL or Excursion Limit; furthermore, the Contractor shall implement corrective work practices, upon the approval of the owner, make re-notification to all regulatory agencies of the changes in work practices and material conditions, and comply with all referenced regulations in this document and the applicable sections of this specification as noted.
  - b. If any of the conditions in subparagraph “a” above are observed by the Construction Administrator, these parties have the right to issue a directive to stop



work. The Contractor shall be obligated to implement corrective action. The Contractor shall not be entitled to additional compensation.

- A. Lead-Based Paint: This scope of work includes the removal of paint which has been identified as being lead-based paint, and therefore all applicable federal, state, and local requirements, including notifications, should be followed. This renovation is being performed as an RRP project; therefore, notification to the Missouri Department of Health and Senior Services (DHSS) will not be required.
  - 1. Make notifications in compliance with Section 2.1 of this specification.
  - 2. Disposal of all paint shall be performed in compliance with the federal and state regulations as listed but not necessarily limited to those under section 2.11 of this specification. It is the Contractor's responsibility to perform all necessary testing if the waste will not be handled and disposed of a hazardous waste.

#### 1.5 PROJECT COORDINATION

- A. Contractor shall coordinate and schedule all phases of the work of the contract documents under his control with the Construction Administrator, Facility Representative, any subcontractors, materials suppliers, and other parties involved as necessary to ensure the smooth and orderly transition of separate phases, timely placement of items and materials, cooperation between parties, and proper execution of the work. **Contractor must give the Owner at least ten business days' notice of start of work or change of work schedule. The Contractor will be required to reimburse the State of Missouri for hours worked and for their expenses if the Consultant mobilizes and work has been canceled, delayed, or postponed for that day.**
- B. All coordination necessary with the facility will be made through the Facility Representative or their designated representative. The Construction Administrator and Facility Representative prior to the start of any work will approve scheduling and access to the work areas.
- C. Normal working hours of the facility will be observed in performing the work unless the Facility Representative and Construction Administrator approve the modification as addressed prior to project beginning.
- D. Contractor shall coordinate any news media inquiries or releases with the Facilities Management Design and Construction Division at (573) 751-3339.
- E. The Contractor, project superintendent, subcontractors, and other appropriate parties shall attend meetings as scheduled and as otherwise necessary to accomplish the work in a timely and efficient manner. Meetings may include, but are not limited to, the following:
  - 1. Pre-Construction Meeting: The Construction Administrator will schedule the pre-construction meeting after the Notice of Award has been issued. The Construction

Administrator will determine the date, time, and exact place of this meeting and all necessary parties will be notified. During the meeting, discussions will be held in regard to construction procedures, scheduling requirements, general conditions, special conditions, channels of communication, responsible persons, requirements for submittals, documentation requirements, payment applications, and other pertinent information necessary for completing the work. Specific requirements of the facility in regard to security, safety, utilities, access to buildings, and related matters will also be discussed.

2. If, in the opinion of the Construction Administrator, additional meetings are required to maintain progress or scheduling requirements on the work, additional meetings will be scheduled.
- F. All fees required for notification requirements, re-notifications, and/or inspections by the applicable local, state, or federal agencies shall be paid by the Contractor. This is a renovation project and therefore notification the Missouri DHSS is not required.

## **PART 2 - EXECUTION**

### **2.1 NOTIFICATIONS**

- A. This project will be performed as an RRP interior renovation project; therefore, notification to the Missouri DHSS will not be required.
- B. The Contractor is responsible for notifications, and associated fees to other local, state or federal agencies (i.e. construction permits, etc.)

### **2.2 SUBMITTALS**

- A. The following items are required to be submitted by the Contractor prior to the commencement of work and are subject to approval by the Owner's Representative. The Contractor shall send one copy of the submittals for approval and then send approved copies of the submittals to the distribution list as discussed at the Pre- Construction Conference.
  1. Proof of EPA RRP training for the individuals that may disturb the painted surfaces
  2. Provide a disposal plan to detail the types of disposal containers to be used, the methods of transportation to the disposal site, the waste hauler, and disposal site.
- B. Prior to final acceptance of the project, the following items must be submitted to the Contractor Administrator:
  1. Waste Disposal Receipts: The waste transporter's manifest and the landfill receipts on all lead containing waste removed from the project.

2. Close-out documentation required by the General Conditions, i.e., certified payrolls, Final Receipt of Payment and Release Form, Compliance with Prevailing Wage Affidavit and MBE/WBE reports.
- C. Upon completion of the work and prior to final payment, the following information must be submitted to the Construction Administrator.
  1. Waste disposal receipts and waste shipment records on all lead waste removed from the project. The Waste Shipment Record and Receipt form (or something similar) must be used for every load brought to the waste disposal site. The disposal and/or shipment record must include the following information:
    - a. Work site name and address
    - b. Project Number
    - c. Owner's name and telephone
    - d. Operator's (Contractor's) name, address, and telephone
    - e. Waste Disposal Site name, address, and telephone
    - f. Name and address of responsible agency
    - g. Type of materials and quantity in cubic yards or tons.
    - h. Name, address and phone number of transporter, and date of transport
    - i. Name, address and phone number of Waste Disposal Site representative and date material was received.
  2. Any other specific requirements spelled out in the General Conditions.

### **2.3 DRAWINGS**

- A. For the purpose of this specification, drawings, when provided, are not intended to be used for anything other than a "reference" to the work area. Information is not specific to quantities or to the exact location of paint to be removed. The Contractor is required to field verify the conditions, locations, and quantities referenced.

### **2.4 LOCAL AREA PROTECTION/SITE SECURITY**

- A. The Contractor shall be responsible for all areas of the building used by him and/or subcontractors in the performance of the work. He shall exert full control over the actions of all employees and subcontractors with respect to the use and preservation of the existing building, except such controls as may be specifically reserved to the owner by these specifications.
- B. The Contractor has the right to exclude from the work area all persons who have no purpose related to the work or its inspection, and shall require all persons in the work area to observe the same regulations as he requires his employees.
- C. The Contractor shall have control of site security during renovation in order to protect his work and equipment. He will have the owner's assistance in notifying building

occupants of impending activity and enforcement of restricted access by owner's employees.

- D. The Contractor shall keep, as a minimum, two 10-pound type ABC fire extinguishers on site at all times. One extinguisher will be maintained outside the work area and one inside the work area. The Contractor's employees shall be trained in the use and operation of the extinguishers.
- E. The Contractor shall use as small an area as necessary for storage of supplies and equipment and shall keep such in a neat and orderly fashion.
- F. Access to emergency exits, stairways, emergency disconnects (i.e. fire suppressant, electrical, plumbing, etc.), and all other important building systems must remain unrestricted during the project. The Contractor must submit a written request to the Facility Representative if their work (i.e. dust barriers, equipment, etc.) will limit access to the building or important building systems.
- G. Contractor is prohibited from entering portions of the building not required for completion of their scope of work.
- H. The Contractor must secure access into the work area to prevent public entrance. The Contractor should post warning tape and install warning signs at each door leading to the work area. All signage should be kept within the office suite.
- J. The Contractor shall maintain the work area free from rubbish, debris, and dirt and keep a clean safe work area. The Contractor shall take measures to keep surfaces free from contamination or shall clean and lock down surfaces after work is done, protect with plastic sheeting and/or plywood during work, or remove from the work area. Trash must be removed daily and will not be allowed to accumulate.
- K. Contractor is responsible for all damage to the structure other than that required to complete the scope of work outlined herein. At the conclusion of the project, the Contractor must repair such incidental damage including tape and glue residue, paint coatings and damage to surfaces, finishes and building components.
- L. All signage, equipment and material shall be kept within the office suite.

## **2.5 WORKER PROTECTION/TRAINING**

- A. The Contractor shall be responsible for providing his employees with proper respiratory protection, respiratory training, a written respirator program, medical examinations, protective clothing, and equipment and for maintaining medical records to comply with OSHA requirements.
- B. The Contractor shall be responsible for all testing and costs incurred for complying with requirements OSHA regulations for personal monitoring, including but not limited to, all applicable air and blood sampling.

- C. All workers are to be trained in the dangers inherent in handling lead containing materials, breathing lead dust, and in proper work procedures and personal and protective measures.
- D. All work must be performed by individuals who have been trained in accordance with the EPAs RRP Program.

## **2.6 EMERGENCY PROTECTION PLAN**

- A. The Contractor shall be responsible for developing a written site-specific Emergency Protection Plan and shall maintain this plan on site. The plan shall include considerations for fire, explosion, toxic atmospheres, electrical hazards, slips, falls, and heat related injury. All employees shall be instructed and trained in the procedures. The plan shall also include contact information for local emergency personnel including the police, fire, and medical services and the nearest hospital/emergency medical treatment facility.

## **2.7 PROJECT SUPERINTENDENT**

- A. The Contractor shall designate a project superintendent, who will serve as the Contractor's representative on the project and will ensure that all work is performed in compliance with all applicable regulations and following minimum requirements:
  - 1. The Superintendent and crew must be trained in accordance with the Environmental Protection Agency's Renovation, Repair and Painting (RRP) Program and must have at least one-year full time experience in working with lead-based paint.
  - 2. Shall be on site whenever work is going on.
  - 3. Maintain a daily log documenting project events, visitations/inspections, problems, and accidents.
  - 4. Implement first aid, safety training, respiratory protection, and ensure workers are trained in emergency procedures.
  - 5. Conduct visual inspection of the work area prior to the final, third party, inspection. This inspection shall be documented.
  - 6. Supervise activities of any subcontractors of the Contractor to ensure compliance with contract documents.

## **2.8 THIRD PARTY AIR MONITORING**

- A. The Contractor will contract with an independent party, acceptable to the Construction Administrator, to perform the following minimum duties:
  - 1. Review Contractor's work plan and provide third party recommendations.

2. Collect air samples periodically during the RRP renovation project. Air samples shall be analyzed by NIOSH methods 7105, 7082, or 7300;
3. Provide Construction Administrator with periodic project reports describing amount and type of work done and other project concerns;
4. A visual inspection of the work area will be conducted prior to final RRP renovation clearance;
5. Review Contractor's disposal documentation;
6. Laboratories shall be accredited by ELLAP (AIHA – Environmental Lead Laboratory Accreditation Program) and NLLAP (EPA – National Lead Laboratory Accreditation Program); and
7. Neither the Contractor, nor any of its principals, officers, or directors may have any financial or business interests in any laboratory utilized on this contract.

## **2.9 FINAL CLEARANCE REQUIREMENTS**

- A. The work area, including all equipment, dust barriers must remain in place and operational until work area is cleared by the Owner or Owner's Designated Representative and the Construction Manager in accordance with this section.
- B. Following the completion of the renovation work, the project superintendent shall notify the Construction Administrator. The superintendent shall then perform a visual inspection of the work area. If satisfactory, they shall contact the Contract Administrator to perform a visual inspection.
- C. Renovation activities are not considered to be complete until the visual clearance is acceptable.

## **2.10 RE-ESTABLISHMENT OF THE WORK AREA AND SYSTEMS**

- A. Re-establishment of the work area shall only occur after the Contractor has complied with the clearance requirements of Section 2.9. Once the project's clearance criteria have been met, the Contractor may remove barriers, signs, trash, and equipment from the site.
- B. The entire area shall be cleaned, using a HEPA vacuum and wet wiping, as a final step to the renovation process.
- C. All damage to finishes, equipment, and/or the area affected by the renovation shall be repaired by the Contractor to equal or better condition as was prior to the work, at no cost to the owner.

## 2.11 WASTE DISPOSAL

- A. The lead containing debris/paint should be treated as a hazardous waste unless the Contractor performs the appropriate and applicable TCLP analysis to suggest otherwise. Representative sampling should be performed in accordance with all applicable local, state, and federal regulations. If the Contractor chooses to collect a representative sample of all lead containing debris for a TCLP analysis, the sample locations should be clearly marked or otherwise identified for future review by the Owner or Owner's Representative. Note that if performed, the TCLP analysis should be performed not only for lead, but for all eight RCRA heavy metals. If the waste does not exceed the regulatory threshold for hazardous waste, the waste may be treated as special waste and disposed in a sanitary landfill, following the applicable local, state of federal regulations.

## 2.12 CODES AND REGULATIONS

- A. This section sets forth governmental regulations and industry standards, which are included and incorporated herein by reference and made a part of this specification.
- B. Requirements include adherence to work practices and procedures set forth in applicable codes, regulations, and standards.
- C. General Applicability of Codes, Regulations and Standards: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations standards, statutes, laws and rules have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith. In the event of conflicting applicable codes, regulations, standards, statutes, laws, or rules, the more stringent shall apply to these specifications.
- D. Contractor Responsibility: The Contractor shall assume full responsibility and liability for compliance with all applicable federal, state, and local regulations pertaining to work practices, hauling, disposal and protection of workers, visitors to the site, and persons occupying areas adjacent to the site. The Contractor is responsible for providing medical examinations and maintaining medical records of personnel as required by the applicable federal, state, and local regulations. The Contractor shall hold the owner harmless for failure to comply with any applicable work, hauling, disposal, safety, health, record keeping or other regulation on the part of himself, his employees, or his subcontractors.

END OF SECTION 02 83 00

## SECTION 040110 - MASONRY CLEANING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section includes cleaning the following:

1. Unit masonry surfaces.
2. Stone surfaces.

#### 1.2 DEFINITIONS

- A. Low-Pressure Spray: 100 to 400 psi (690 to 2750 kPa); 4 to 6 gpm (0.25 to 0.4 L/s)
- B. Medium-Pressure Spray: 400 to 800 psi (2750 to 5510 kPa); 4 to 6 gpm (0.25 to 0.4 L/s)
- C. High-Pressure Spray: 800 to 1200 psi (5510 to 8250 kPa); 4 to 6 gpm (0.25 to 0.4 L/s)

#### 1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site

#### 1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

#### 1.5 QUALITY ASSURANCE

- A. Mockups: Prepare mockups of cleaning on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.
1. Cleaning: Clean an area approximately 25 sq. ft. (2.3 sq. m) for each type of masonry and surface condition at a location coordinated with owner
    - a. Test cleaners and methods on samples of adjacent materials for possible adverse reactions. Do not test cleaners and methods known to have deleterious effect.
    - b. Allow a waiting period of not less than seven days after completion of sample cleaning to permit a study of sample panels for negative reactions.

### PART 2 - PRODUCTS

#### 2.1 PAINT REMOVERS

- A. Covered or Skin-Forming Alkaline Paint Remover: Manufacturer's standard covered or skin-forming, alkaline paste or gel formulation, for removing paint from masonry; containing no methylene chloride.
- B. Solvent-Type Paste Paint Remover: Manufacturer's standard water-rinsible, solvent-type paste or gel formulation, for removing paint from masonry.



- C. Low-Odor, Solvent-Type Paste Paint Remover: Manufacturer's standard low-odor, water-rinsible, solvent-type paste, gel, or foamed emulsion formulation, for removing paint coatings from masonry; containing no methanol or methylene chloride.

## 2.2 CLEANING MATERIALS

- A. Water: Potable.
- B. Hot Water: Water heated to a temperature of 140 to 160 deg F (60 to 71 deg C).
- C. Detergent Solution, Job Mixed: Solution prepared by mixing 2 cups (0.5 L) of tetrasodium pyrophosphate (TSPP), 1/2 cup (125 mL) of laundry detergent, and 20 quarts (20 L) of hot water for every 5 gal. (20 L) of solution required.
- D. Mold, Mildew, and Algae Remover, Job Mixed: Solution prepared by mixing 2 cups (0.5 L) of tetrasodium pyrophosphate (TSPP), 5 quarts (5 L) of 5 percent sodium hypochlorite (bleach), and 15 quarts (15 L) of hot water for every 5 gal. (20 L) of solution required.
- E. Nonacidic Gel Cleaner: Manufacturer's standard gel formulation, with pH between 6 and 9, that contains detergents with chelating agents and is specifically formulated for cleaning masonry surfaces.
- F. Nonacidic Liquid Cleaner: Manufacturer's standard mildly alkaline liquid cleaner formulated for removing mold, mildew, and other organic soiling from ordinary building materials, including polished stone, brick, aluminum, plastics, and wood.
- G. Mild-Acid Cleaner: Manufacturer's standard mild-acid cleaner containing no muriatic (hydrochloric), hydrofluoric, or sulfuric acid; or ammonium bifluoride or chlorine bleaches.
- H. Acidic Cleaner: Manufacturer's standard acidic masonry cleaner composed of hydrofluoric acid or ammonium bifluoride blended with other acids, detergents, wetting agents, and inhibitors.
- I. One-Part Limestone Acidic Cleaner: Manufacturer's standard one-part acidic formulation for cleaning limestone.

## 2.3 CHEMICAL CLEANING SOLUTIONS

- A. Dilute chemical cleaners with water to produce solutions not exceeding concentration recommended in writing by chemical-cleaner manufacturer.
- B. Acidic Cleaner Solution for Nonglazed Masonry and Unpolished Stone: Dilute acidic cleaner with water to produce hydrofluoric acid content of 3 percent or less, but not greater than that recommended in writing by chemical-cleaner manufacturer.
  - 1. Stones: Use only on unpolished granite, unpolished dolomite marble, and siliceous sandstone.

## PART 3 - EXECUTION

### 3.1 PROTECTION

- A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent paint removers and chemical cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
  - 1. Cover adjacent surfaces with materials that are proven to resist paint removers and chemical cleaners used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant. Apply masking agents according to manufacturer's written instructions. Do not apply liquid strippable masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.

### 3.2 CLEANING MASONRY, GENERAL

- A. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from 20 feet (6 m) away by Architect.
- B. Proceed with cleaning in an orderly manner; work from bottom to top of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.
- C. Use only those cleaning methods indicated for each masonry material and location.
  - 1. Brushes: Do not use wire brushes or brushes that are not resistant to chemical cleaner being used.
  - 2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage surfaces, including joints.
    - a. Equip units with pressure gages.
    - b. For chemical-cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with nozzle having a cone-shaped spray.
    - c. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
    - d. For heated water-spray application, use equipment capable of maintaining temperature between 140 and 160 deg F (60 and 71 deg C) at flow rates indicated.
- D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces. Keep wall wet below area being cleaned to prevent streaking from runoff.
- E. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to the "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.

- F. Water-Spray Application Method: Unless otherwise indicated, hold spray nozzle at least 6 inches (150 mm) from masonry surface and apply water in horizontal back-and-forth sweeping motion, overlapping previous strokes to produce uniform coverage.
- G. Chemical-Cleaner Application Methods: Apply chemical cleaners to masonry surfaces according to chemical-cleaner manufacturer's written instructions; use brush or spray application. Do not spray apply at pressures exceeding 50 psi (345 kPa). Do not allow chemicals to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.
- H. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
  - 1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.

### 3.3 PRELIMINARY CLEANING

- A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing remaining growth to dry as long as possible before removal. Remove loose soil and plant debris from open joints to whatever depth they occur.
- B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to planned cleaning methods. Extraneous substances include paint, calking, asphalt, and tar.
  - 1. Carefully remove heavy accumulations of rigid materials from masonry surface with sharp chisel. Do not scratch or chip masonry surface.
  - 2. Remove paint and calking with alkaline paint remover.
    - a. Comply with requirements in "Paint Removal" Article.
    - b. Repeat application up to two times if needed.
  - 3. Remove asphalt and tar with solvent-type paste paint remover.
    - a. Comply with requirements in "Paint Removal" Article.
    - b. Apply paint remover only to asphalt and tar by brush without prewetting.
    - c. Allow paint remover to remain on surface for 10 to 30 minutes.
    - d. Repeat application if needed.

### 3.4 PAINT REMOVAL

- A. Paint-Remover Application, General: Apply paint removers according to paint-remover manufacturer's written instructions. Do not allow paint removers to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.
- B. Paint Removal with Covered or Skin-Forming Alkaline Paint Remover:

1. Remove loose and peeling paint using low medium high-pressure water spray, scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply paint remover to dry, painted surface with trowel, spatula, or as recommended in writing by manufacturer.
3. Apply cover according to manufacturer's written instructions.
4. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
5. Scrape off paint and remover.
6. Rinse with cold hot water applied by low medium high-pressure spray to remove chemicals and paint residue.
7. Apply acidic cleaner or manufacturer's recommended after wash to surface, while surface is still wet, using low-pressure spray equipment or soft-fiber brush. Let cleaner or afterwash remain on surface as a neutralizing agent for period recommended by chemical-cleaner or afterwash manufacturer.
8. Rinse with cold water applied by low medium high-pressure spray to remove chemicals and soil.
9. Retreat spots of remaining paint.

C. Paint Removal with Solvent-Type Paste Paint Remover:

1. Remove loose and peeling paint using low medium high-pressure water spray, scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply thick coating of paint remover to painted surface with natural-fiber cleaning brush, deep-nap roller, or large paint brush. Apply in one or two coats according to manufacturer's written instructions.
3. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
4. Rinse with cold hot water applied by low medium high-pressure spray to remove chemicals and paint residue.

### 3.5 CLEANING MASONRY

A. Detergent Cleaning:

1. Wet surface with cold hot water applied by low-pressure spray.
2. Scrub surface with detergent solution using medium-soft brushes until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from mortar joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that surface remains wet.
3. Rinse with cold hot water applied by low medium high-pressure spray to remove detergent solution and soil.
4. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

B. Mold, Mildew, and Algae Removal:

1. Wet surface with cold hot water applied by low-pressure spray.
2. Apply mold, mildew, and algae remover by brush or low-pressure spray.
3. Scrub surface with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and

crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used, and that surface remains wet.

4. Rinse with cold hot water applied by low medium high-pressure spray to remove mold, mildew, and algae remover and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

C. Nonacidic Gel Chemical Cleaning:

1. Wet surface with cold hot water applied by low-pressure spray.
2. Apply gel cleaner in 1/8-inch (3-mm) thickness by brush, working into joints and crevices. Apply quickly and do not brush out excessively, so area is uniformly covered with fresh cleaner and dwell time is uniform throughout area being cleaned.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer established by mockup.
4. Remove bulk of gel cleaner.
5. Rinse with cold hot water applied by low medium high-pressure spray to remove chemicals and soil.
6. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

D. Nonacidic Liquid Chemical Cleaning:

1. Wet surface with cold hot water applied by low-pressure spray.
2. Apply cleaner to surface in two applications by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer established by mockup.
4. Rinse with cold hot water applied by low medium high-pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

E. Mild-Acid Chemical Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply cleaner to surface in two applications by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer established by mockup.
4. Rinse with cold water applied by low medium high-pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

F. Acidic Chemical Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply cleaner to surface in two applications by brush or low-pressure spray.

3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer established by mockup.
4. Rinse with cold water applied by low medium high-pressure spray to remove chemicals and soil. Rinse until all foaming, if any, stops and suds disappear.
5. Repeat cleaning procedure above where required to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

G. One-Part Limestone Chemical Cleaning:

1. Wet surface with cold hot water applied by low-pressure spray.
2. Apply cleaner to surface by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer established by mockup.
4. Immediately repeat application of one-part limestone cleaner as indicated above over the same area.
5. Rinse with cold hot water applied by medium-pressure spray to remove chemicals and soil.

END OF SECTION 040110

## SECTION 040120.63 - BRICK MASONRY REPAIR

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes repairing brick masonry.

#### 1.2 DEFINITIONS

- A. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Quality-control program.

### PART 2 - PRODUCTS

#### 2.1 MASONRY MATERIALS

- A. Face Brick: As required to complete brick masonry repair work.
  - 1. Reuse existing brick.
  - 2. If existing brick is unusable, provide Brick Matching Existing: Units with colors, color variation within units, surface texture, size, and shape that match existing brickwork.
    - a. Physical Properties: According to ASTM C67
    - b. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.
  - 3. Special Shapes:
    - a. Provide molded, 100 percent solid shapes for applications where core holes or "frogs" could be exposed to view or weather when in final position and where shapes produced by sawing would result in sawed surfaces being exposed to view.
    - b. Mechanical chopping or breaking brick, or bonding pieces of brick together by adhesive, are unacceptable procedures for fabricating special shapes.

- B. Building Brick: ASTM C62, Grade SW where in contact with earth or Grade SW, MW, or NW for concealed backup; and of same vertical dimension as face brick, for masonry work concealed from view.

## 2.2 MORTAR MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; white or gray, or both where required for color matching of mortar.
  - 1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Masonry Cement: ASTM C91/C91M.
- D. Mortar Cement: ASTM C1329/C1329M.
- E. Mortar Sand: ASTM C144.
  - 1. Exposed Mortar: Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
  - 2. Colored Mortar: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
- F. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.
- G. Water: Potable.

## 2.3 MANUFACTURED REPAIR MATERIALS

- A. Brick Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching brick masonry.
  - 1. Use formulation that is vapor and water permeable (equal to or more than the brick), exhibits low shrinkage, has lower modulus of elasticity than bricks being repaired, and develops high bond strength to all types of masonry.
  - 2. Formulate patching compound in colors and textures to match each brick being patched.

## 2.4 ACCESSORY MATERIALS

- A. Setting Buttons and Shims: Resilient plastic, nonstaining to masonry, sized to suit joint thicknesses and bed depths of bricks, less the required depth of pointing materials unless removed before pointing.
- B. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
  - 1. Previous effectiveness in performing the work involved.



2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could leave residue on surfaces.

## 2.5 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
  1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
  1. Rebuilding (Setting) Mortar by Volume: ASTM C270, Proportion Specification, 1-part portland cement, 1 part lime, and 6 parts sand.
  2. Rebuilding (Setting) Mortar by Type: ASTM C270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime masonry cement or mortar cement.
  3. Rebuilding (Setting) Mortar by Property: ASTM C270, Property Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime masonry cement or mortar cement.
  4. Pigmented, Colored Mortar: Add mortar pigments to produce exposed, setting (rebuilding) mortar of colors required.

## PART 3 - EXECUTION

### 3.1 PROTECTION

- A. Remove gutters and downspouts adjacent to masonry and store during masonry repair. Reinstall when repairs are complete.
  1. Provide temporary rain drainage during work to direct water away from building.

### 3.2 BRICK REMOVAL AND REPLACEMENT

- A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated or are to be reused. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
- B. Support and protect remaining masonry that surrounds removal area.

- C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.
- D. Notify Owner of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing masonry backup, rotted wood, rusted metal, and other deteriorated items.
- E. Remove in an undamaged condition as many whole bricks as possible.
  - 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
  - 2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
- F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.
- G. Replace removed damaged brick with other removed brick in good condition, where possible, matching existing brick. Do not use broken units unless they can be cut to usable size.
- H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
  - 1. Maintain joint width for replacement units to match existing joints.
  - 2. Use setting buttons or shims to set units accurately spaced with uniform joints.
- I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with enough mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. (30 g/194 sq. cm per min.) Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.
  - 1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
  - 2. Rake out mortar used for laying brick before mortar sets according to Section 040120.64 "Brick Masonry Repointing." Point at same time as repointing of surrounding area.
  - 3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.
- J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
  - 1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

### 3.3 BRICK MASONRY PATCHING

- A. Patching Bricks:
  - 1. Remove loose material from masonry surface. Carefully remove additional material so patch does not have feathered edges but has square or slightly undercut edges on area to

- be patched and is at least 1/4 inch (6 mm) thick, but not less than recommended in writing by patching compound manufacturer.
2. Mask adjacent mortar joint or rake out for repointing if patch extends to edge of brick.
  3. Mix patching compound in individual batches to match each unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.
  4. Rinse surface to be patched and leave damp, but without standing water.
  5. Brush-coat surfaces with slurry coat of patching compound according to manufacturer's written instructions.
  6. Place patching compound in layers as recommended in writing by patching compound manufacturer, but not less than 1/4 inch (6 mm) or more than 2 inches (50 mm) thick. Roughen surface of each layer to provide a key for next layer.
  7. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of brick. Shape and finish surface before or after curing, as determined by testing, to best match existing brick.
  8. Keep each layer damp for 72 hours or until patching compound has set.

#### 3.4 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low pressure spray.
  1. Do not use metal scrapers or brushes.
  2. Do not use acidic or alkaline cleaners.

END OF SECTION 040120.63

## SECTION 040120.64 - BRICK MASONRY REPOINTING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes repointing joints with mortar.

#### 1.2 UNIT PRICES

- A. Work of this Section is affected by unit prices specified in Section 012200 "Unit Prices."

#### 1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

#### 1.5 QUALITY ASSURANCE

- A. Mockups: Prepare mockups of brick masonry repointing to demonstrate aesthetic effects and to set quality standards for materials and execution.
  - 1. Repointing: Rake out joints in two separate areas, each approximately 36 inches (900 mm) high by 48 inches (1200 mm) wide, unless otherwise indicated, for each type of repointing required, and repoint one of the areas.

### PART 2 - PRODUCTS

#### 2.1 MORTAR MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or Type II, except Type III may be used for cold-weather construction; white or gray, or both where required for color matching of mortar.
  - 1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Masonry Cement: ASTM C91/C91M.
- D. Mortar Cement: ASTM C1329/C1329M.
- E. Mortar Sand: ASTM C144.
  - 1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.

2. Color: Provide natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.

F. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.

G. Water: Potable.

## 2.2 MORTAR MIXES

A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.

B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.

1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent.

C. Do not use admixtures in mortar unless otherwise indicated.

D. Mixes: Mix mortar materials in the following proportions:

1. Pointing Mortar by Volume: ASTM C270, Proportion Specification, 1-part portland cement, 1 part lime, and 6 parts sand. Add mortar pigments to produce mortar colors required.
2. Pointing Mortar by Type: ASTM C270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime masonry cement or mortar cement. Add mortar pigments to produce mortar colors required.
3. Pointing Mortar by Property: ASTM C270, Property Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime masonry cement or mortar cement. Add mortar pigments to produce mortar colors required.

## PART 3 - EXECUTION

### 3.1 PROTECTION

A. Remove gutters and downspouts and associated hardware adjacent to masonry and store during masonry repointing. Reinstall when repointing is complete.

1. Provide temporary rain drainage during work to direct water away from building.

### 3.2 REPOINTING

A. Rake out and repoint joints to the following extent:

1. All joints in areas indicated.
  2. Joints indicated as sealant-filled joints. Seal joints according to Section 079200 "Joint Sealants."
  3. Joints at locations of the following defects:
    - a. Holes and missing mortar.
    - b. Cracks that can be penetrated 1/4 inch (6 mm) or more by a knife blade 0.027 inch (0.7 mm) thick.
    - c. Cracks 1/16 inch (1.6 mm or more in width and of any depth.
    - d. Hollow-sounding joints when tapped by metal object.
    - e. Eroded surfaces 1/4 inch (6 mm) or more deep.
    - f. Deterioration to point that mortar can be easily removed by hand, without tools.
    - g. Joints filled with substances other than mortar.
- B. Do not rake out and repoint joints where not required.
- C. Rake out joints as follows, according to procedures demonstrated in approved mockup:
1. Remove mortar from joints to depth of joint width plus 1/8 inch (3 mm) 2 times joint width 2-1/2 times joint width not less than 1/2 inch (13 mm) not less than 3/4 inch (20 mm) and not less than that required to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 inches (50 mm) deep; consult Architect for direction.
  2. Remove mortar from brick and other masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
  3. Do not spall edges of brick or other masonry units or widen joints. Replace or patch damaged brick or other masonry units as directed by Architect.
- D. Notify Architect of unforeseen detrimental conditions including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- E. Pointing with Mortar:
1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
  2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch (9 mm) until a uniform depth is formed. Fully compact each layer, and allow it to become thumbprint hard before applying next layer.
  3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 inch (9 mm). Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry units have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
  4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.

5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
  6. Hairline cracking within mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.
- F. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

### 3.3 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low pressure spray.
1. Do not use metal scrapers or brushes.
  2. Do not use acidic or alkaline cleaners.

END OF SECTION 040120.64

## SECTION 055000 - METAL FABRICATIONS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Miscellaneous steel framing and supports.
2. Metal ladders / extensions.
3. Guardrails
4. Metal grate platform and steps and supports.
5. Loose Steel Lintels

##### B. Products furnished, but not installed, under this Section include the following:

1. Loose steel lintels.
2. Anchor bolts, steel pipe sleeves, slotted-channel inserts,

#### 1.2 ACTION SUBMITTALS

##### A. Product Data: For the following:

1. Nonslip aggregates and nonslip-aggregate surface finishes.
2. Fasteners.
3. Shop primers.
4. Shrinkage-resisting grout.

##### B. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

##### C. Delegated Design Submittal: For the following, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1. Metal ladders / extensions.
2. Guardrails
3. Metal grate platform and steps and supports.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

##### A. Delegated Design. Engage a qualified professional engineer to detail and design the steel items noted and described in the drawings specifically to address:

1. Material sizes and connection,
2. Installation details as required to allow for proper sequencing of work within the allowable timeframe of the project schedule,
3. Field verification of structural integrity of mounting substrates; brick walls, parapet walls, roof structure and substructure, etc.



4. Sealed drawings prepared by the delegated design engineer to be submitted for review as part of the shop drawing review process.

## 2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A36/A36M.
- C. Steel Tubing: ASTM A500/A500M, cold-formed steel tubing.
- D. Steel Pipe: ASTM A53/A53M, Standard Weight (Schedule 40) unless otherwise indicated.

## 2.3 FASTENERS

- A. General: Unless otherwise indicated, provide Type 304 stainless steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
- B. Post-Installed Anchors: chemical anchors.
- C. Shop Primers: Provide primers that comply with Section 099113 "Exterior Painting."
- D. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
  1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- E. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.
- F. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.
- G. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- H. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
- I. Shrinkage-Resistant Grout: Factory-packaged, nonmetallic, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

## 2.4 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
- G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, not less than 8 inches (200 mm) from ends and corners of units and 24 inches (600 mm) o.c.

## 2.5 MISCELLANEOUS FRAMING AND SUPPORTS

- A. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.

## 2.6 METAL LADDERS

- A. General:
  - 1. Comply with ANSI A14.3
- B. Steel Ladders:
  - 1. Siderails: Continuous, steel flat bars, with eased edges. To match existing
  - 2. Rungs: steel bars matching existing
  - 3. Fit rungs in centerline of siderails; plug-weld and grind smooth on outer rail faces.
  - 4. Provide nonslip surfaces on top of each rung.
  - 5. Galvanize and prime exterior ladders, including brackets.
  - 6. Prime exterior ladders, including brackets and fasteners, with zinc-rich primer.

## 2.7 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.
- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
  - 1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.
- C. Galvanize exterior miscellaneous steel trim.
- D. Prime exterior miscellaneous steel trim with zinc-rich primer.

## 2.8 LOOSE STEEL LINTELS

- A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated. Fabricate in single lengths for each opening unless otherwise indicated. Weld adjoining members together to form a single unit where indicated.
- B. Galvanize and prime loose steel lintels located in exterior walls.
- C. Prime loose steel lintels located in exterior walls with zinc-rich primer.

## 2.9 STEEL WELD PLATES AND ANGLES

- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

## 2.10 GENERAL FINISH REQUIREMENTS

- A. Finish metal fabrications after assembly.

## 2.11 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A153/A153M for steel and iron hardware and with ASTM A123/A123M for other steel and iron products.
  - 1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
- B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
  - 1. Shop prime with primers specified in Section 099113 "Exterior Painting" indicated.

- C. Preparation for Shop Priming: Prepare surfaces to comply with requirements indicated below:
  - 1. Exterior Items: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
  - 2. Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
  - 3. Items Indicated to Receive Primers Specified in Section 099600 "High-Performance Coatings": SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
  - 4. Other Steel Items: SSPC-SP 3, "Power Tool Cleaning."
  - 5. Galvanized-Steel Items: SSPC-SP 16, "Brush-off Blast Cleaning of Coated and Uncoated Galvanized Steel, Stainless Steels, and Non-Ferrous Metals."
- D. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Field Welding: Comply with the following requirements:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
- E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

#### 3.2 INSTALLATION OF MISCELLANEOUS FRAMING AND SUPPORTS

- A. Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.

### 3.3 REPAIRS

#### A. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

#### B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A780/A780M.

END OF SECTION 055000

## SECTION 061000 - ROUGH CARPENTRY

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Wood blocking and nailers.
2. Wood sleepers.
3. Plywood underlayment for flooring installations
4. Roof Sheathing

#### 1.2 ACTION SUBMITTALS

##### A. Product Data:

1. For each type of process and factory-fabricated product.
2. For preservative-treated wood products.

#### 1.3 INFORMATIONAL SUBMITTALS

##### A. Material Certificates:

1. For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
2. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.

##### B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.
2. Power-driven fasteners.
3. Post-installed anchors.

### PART 2 - PRODUCTS

#### 2.1 WOOD PRODUCTS, GENERAL

##### A. Lumber: Comply with DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Dress lumber, S4S, unless otherwise indicated.

- B. Maximum Moisture Content:
  - 1. Boards: 19 percent.
  - 2. Dimension Lumber: 19 percent for 2-inch nominal (38-mm actual) thickness or less unless otherwise indicated.
- C. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.
  - 1. Allowable design stresses, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- D. Plywood: Mark each sheet with the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood. The mark must identify the plywood by species group or span rating, exposure durability classification, grade, and compliance with APA L870. Surfaces that are to be exposed to view must not bear grademarks or other types of identifying marks.
  - 1. Moisture content for roof planking is 15 percent maximum.

## 2.2 PRESERVATIVE TREATMENT

- A. Preservative Treatment by Pressure Process: AWWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.
  - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat all rough carpentry unless otherwise indicated. including the following:
  - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
  - 2. Wood sills, sleepers, blocking, furring, and similar concealed members in contact with masonry or concrete.
- E. Preservative-Treated Lumber and Plywood
  - 1. The Contractor is responsible for the quality of treated wood products. Each treated piece must be inspected in accordance with AWWPA M2 and permanently marked or branded, by the producer, in accordance with AWWPA M6. The Contractor must provide

Contracting Officer's Representative (COR) with the inspection report of an approved independent inspection agency that offered products comply with applicable AWPA Standards. The appropriate Quality Mark on each piece will be accepted, in lieu of inspection reports, as evidence of compliance with applicable AWPA treatment standards.

2. Moisture content of roof planking, 15 percent maximum.

### 2.3 MISCELLANEOUS LUMBER

- A. Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
  1. Blocking.
  2. Nailers.
  3. Cants.
  4. Furring.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any species.

### 2.4 PLYWOOD BACKING PANELS

- A. Plywood underlayment for flooring installations:
  1. Provide material that is an approved substrate for the flooring material, as indicated by the flooring material manufacturer.
  2. Plywood, 1/2-inch nominal thickness, APA approved underlayment plywood, fire-retardant treated, moisture resistant.
  3. Do not use OSB, MDF, particle board, chipboard, lauan or other composite type underlayments.
- B. Equipment Backing Panels: Plywood, DOC PS 1, Exterior, A-C Exterior, C-C Plugged Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2-inch (13-mm) 3/4-inch (19-mm) nominal thickness.
- C. Plywood: Exterior Type, C-C (Plugged) Grade. Minimum thickness must be 3/4-inch.

### 2.5 ROOF SHEATHING

- A. Plywood 3/4-inch thick, C-D Grade, Exposure 1, with an Identification Index of not less than [24/0]. Provide certified sustainably harvested plywood roof sheathing. Provide exterior grade material with phenol resin for all applications.

### 2.6 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches (38 mm) into wood substrate.



1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.

## 2.7 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch (0.6 mm).
- B. Adhesives for Gluing Furring to Concrete or Masonry: Formulation complying with ASTM D3498 that is approved for use indicated by adhesive manufacturer.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Use full length or full-size boards wherever possible.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- F. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- G. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
  1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
  2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.
  3. ICC-ES evaluation report for fastener.
- H. Plywood and Structural-Use Panel Roof Sheathing
  1. Install with the grain of the outer plies or long dimension at right angles to supports. Stagger end joints and locate over the centerlines of supports. Allow 3 mm 1/8 inch spacing at panel edges. Nail panels with 8-penny common nails or 6-penny annular right or screw-type rings or screw-type nails spaced 150 mm 6 inches o.c. at supported edges

and 300 mm 12 inches o.c. at intermediate bearings. Do not use staples in roof sheathing. Where the support spacing exceeds the maximum span for an unsupported edge, provide adequate blocking, tongue-and-groove edges, or panel edge clips, in accordance with APA E30.

END OF SECTION 061000

## SECTION 070150.19 - PREPARATION FOR REROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Full tear-off of entire roof system Reference ALTERNATE 1 where demolition will include abatement of asbestos containing material.
2. Partial tear-off of entire roof area Reference BASE BID where demolition will not disturb asbestos containing material.
3. Re-cover preparation of entire roof area.
4. Removal of flashings and counter flashings.

#### 1.2 PREINSTALLATION MEETINGS

- ##### A. Preliminary Roofing Conference: Before starting removal Work, conduct conference at Project site.

#### 1.3 INFORMATIONAL SUBMITTALS

- ##### A. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations.

1. Submit before Work begins.

#### 1.4 QUALITY ASSURANCE

- ##### A. Installer Qualifications: Approved by warrantor of existing roofing system to work on existing roofing.

#### 1.5 FIELD CONDITIONS

- ##### A. Existing Roofing System: EPDM roofing.

- ##### B. Owner will occupy portions of building immediately below reroofing area.

1. Conduct reroofing so Owner's operations are not disrupted.
2. Provide Owner with not less than 72 hours' written notice of activities that may affect Owner's operations.
3. Coordinate work activities daily with Owner so Owner has adequate advance notice to place protective dust and water-leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below work area.
4. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below affected area.

- a. Verify that occupants below work area have been evacuated before proceeding with work over impaired deck area.
- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Limit construction loads on existing roof areas to remain, and existing roof areas scheduled to be reroofed.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
  1. Remove only as much roofing in one day as can be made watertight in the same day.

## PART 2 - PRODUCTS

### 2.1 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new roofing system.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Seal or isolate windows that may be exposed to airborne substances created in removal of existing materials.
- B. Shut off rooftop utilities and service piping before beginning the Work.
- C. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work.
  1. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- D. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

### 3.2 ROOF TEAR-OFF

- A. Notify Owner each day of extent of roof tear-off proposed for that day and obtain authorization to proceed.
- B. Lower removed roofing materials to ground and onto lower roof levels, using dust-tight chutes or other acceptable means of removing materials from roof areas.

- C. Remove wood sleepers and other accessories from roofing. Provide temporary support for existing as or utility lines to remain.
- D. Full Roof Tear-off: Remove existing roofing and other roofing system components down to the existing roof deck.
  - 1. Remove substrate board roof insulation.
  - 2. Remove base flashings and counter flashings.
  - 3. Remove copings.
  - 4. Remove expansion joint.
  - 5. Remove flashings at pipes, curbs, mechanical equipment, and other penetrations.
  - 6. Remove wood blocking, curbs, and nailers.
  - 7. Remove ACM asphalt from wood deck. Ref Environmental Specifications.
  - 8. Remove fasteners from deck.
- E. Partial Roof Tear-off: Remove existing roofing down to existing substrate and immediately check for presence of moisture.
  - 1. Remove wet or damp materials below existing roofing and above deck.
    - a. A maximum of 15 lb/100 sq. ft. (0.72 kg/sq. m) of asphalt is permitted to remain roofing is placed directly over the deck. If fastener removal is difficult, consider placing recover boards over the deck and cutting fasteners above the deck surface rather than removing them. If cut fasteners can fall from deck, specify fastener removal.
  - 2. Remove fasteners from deck.

### 3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed, or if deck appears or feels inadequately attached, immediately notify Owner.
  - 1. Do not proceed with installation until directed by Owner.
- C. If deck surface is unsuitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Owner.
  - 1. Do not proceed with installation until directed by Owner.
- D. Provide additional deck securement as required.

### 3.4 ROOF RE-COVER PREPARATION

- A. Remove blisters, ridges, buckles, and other substrate irregularities from existing roofing that inhibit new recover boards from conforming to substrate.
  - 1. Verify that existing substrate is dry.

- a. Spot check substrates with an electrical capacitance moisture-detection meter.
2. Remove materials that are wet or damp.
- B. Remove existing base flashings.
  1. Clean substrates of contaminants, such as asphalt, sheet materials, dirt, and debris.

END OF SECTION 070150.19

## SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Modified bituminous sheet waterproofing.

#### 1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Sustainable Design Submittals:
- C. Samples: For each product specified.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Sample warranties.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

#### 1.6 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 MODIFIED BITUMINOUS SHEET WATERPROOFING

- A. Modified Bituminous Sheet Waterproofing: Minimum 60-mil (1.5-mm) nominal thickness, self-adhering sheet consisting of 56 mils (1.4 mm) of rubberized asphalt laminated on one side to a 4-mil- (0.10-mm-) thick, polyethylene-film reinforcement, and with release liner on adhesive side; formulated for application with primer or surface conditioner that complies with VOC limits of authorities having jurisdiction.

1. Physical Properties:

- a. Tensile Strength, Membrane: 250 psi (1.7 MPa) minimum; ASTM D412, Die C, modified.
  - b. Ultimate Elongation: 300 percent minimum; ASTM D412, Die C, modified.
  - c. Low-Temperature Flexibility: Pass at minus 20 deg F (minus 29 deg C); ASTM D1970/D1970M.
  - d. Crack Cycling: Unaffected after 100 cycles of 1/8-inch (3-mm) movement; ASTM C836/C836M.
  - e. Puncture Resistance: 40 lbf (180 N) minimum; ASTM E154/E154M.
  - f. Water Absorption: 0.2 percent weight-gain maximum after 48-hour immersion at 70 deg F (21 deg C); ASTM D570.
  - g. Water Vapor Permeance: 0.05 perm (2.9 ng/Pa x s x sq. m) maximum; ASTM E96/E96M, Water Method.
  - h. Hydrostatic-Head Resistance: 200 feet (60 m) <Insert dimension> minimum; ASTM D5385.
2. Sheet Strips: Self-adhering, rubberized-asphalt strips of same material and thickness as sheet waterproofing.

## 2.2 AUXILIARY MATERIALS

- A. Furnish auxiliary materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.
  1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.
- B. Primer: Liquid solvent-borne primer recommended for substrate by sheet-waterproofing material manufacturer.
- C. Substrate Patching Membrane: Low-viscosity, two-component, modified asphalt coating.
- D. Metal Termination Bars: Aluminum bars, approximately 1 by 1/8-inch (25 by 3 mm), predrilled at 9-inch (229-mm) centers.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.

### 3.2 INSTALLATION OF MODIFIED BITUMINOUS SHEET-WATERPROOFING

- A. Install modified bituminous sheets according to waterproofing manufacturer's written instructions.



- B. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by sheet waterproofing in same day. Reprime areas exposed for more than 24 hours.
- C. Apply and firmly adhere sheets over area to receive waterproofing. Accurately align sheets and maintain uniform 2-1/2-inch- (64-mm-) minimum lap widths and end laps. Overlap and seal seams, and stagger end laps to ensure watertight installation.
  - 1. When ambient and substrate temperatures range between 25 and 40 deg F (minus 4 and plus 5 deg C), install self-adhering, modified bituminous sheets produced for low-temperature application. Do not use low-temperature sheets if ambient or substrate temperature is higher than 60 deg F (16 deg C).
- D. Horizontal Application: Apply sheets from low to high points of decks to ensure that laps shed water.
- E. Apply continuous sheets over already-installed sheet strips, bridging substrate cracks, construction, and contraction joints.
- F. Seal edges of sheet-waterproofing terminations with mastic.
- G. Repair tears, voids, and lapped seams in waterproofing not complying with requirements. Slit and flatten fish mouths and blisters. Patch with sheet waterproofing extending 6 inches (150 mm) beyond repaired areas in all directions.

### 3.3 PROTECTION, REPAIR, AND CLEANING

- A. Do not permit foot or vehicular traffic on unprotected membrane.
- B. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.
- C. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended in writing by manufacturer of affected construction.

END OF SECTION 071326

## SECTION 075423 - THERMOPLASTIC-POLYOLEFIN (TPO) ROOFING

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Adhered thermoplastic polyolefin (TPO) roofing system.
2. Accessory roofing materials.
3. Substrate board.
4. Roof insulation.
5. Insulation accessories and cover board.
6. Walkways.

#### 1.2 PREINSTALLATION MEETINGS

- ##### A. Preinstallation Conference: Conduct conference at Project site.

#### 1.3 ACTION SUBMITTALS

##### A. Product Data: For each type of product.

1. For insulation and roof system component fasteners, include copy SPRI's Directory of Roof Assemblies listing.

##### B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:

1. Layout and thickness of insulation.
2. Base flashings and membrane termination details.
3. Flashing details at penetrations.
4. Tapered insulation layout, thickness, and slopes.

##### C. Samples: For the following products:

1. Roof membrane and flashings, of color required.
2. Walkway rolls, of color required.

##### D. Wind Uplift Resistance Submittal: For roofing system, indicating compliance with wind uplift performance requirements.

#### 1.4 INFORMATIONAL SUBMITTALS

##### A. Manufacturer Certificates:

1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

- a. Submit evidence of compliance with performance requirements.
  2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.
  - B. Product Test Reports: For roof membrane and insulation, for tests performed by a qualified testing agency, indicating compliance with specified requirements.
  - C. Field Test Reports:
    1. Fastener-pullout test results and manufacturer's revised requirements for fastener patterns.
  - D. Field quality-control reports.
  - E. Sample warranties.
- 1.5 CLOSEOUT SUBMITTALS
- A. Maintenance data.
- 1.6 QUALITY ASSURANCE
- A. Qualifications:
    1. Manufacturers: A qualified manufacturer that is listed in SPRI's Directory of Roof Assemblies for roofing system identical to that used for this Project.
    2. Installers: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
- 1.7 WARRANTY
- A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
    1. Warranty Period: 15 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. Accelerated Weathering: Roof membrane to withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
- B. Impact Resistance: Roof membrane to resist impact damage when tested according to ASTM D3746, ASTM D4272, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- C. Wind Uplift Resistance: Contractor to prepare wind load calculations for roofing system to resist wind uplift pressures when tested according to FM Approvals 4474, UL 580, or UL 1897:

1. Building is a Risk Category IV per IBC 2018 Table 1604.5
2. (Terrain) Surface Roughness is C
3. Exposure is C
4. Wind Speed = 107 mph

- D. SPRI's Directory of Roof Assemblies Listing: Roof membrane, base flashings, and component materials comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system and are listed in SPRI's Directory of Roof Assemblies for roof assembly identical for that specified for this Project.
- E. Exterior Fire-Test Exposure: ASTM E108 or UL 790, [Class A]; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

## 2.2 THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

- A. TPO Sheet: ASTM D6878/D6878M, internally fabric- or scrim-reinforced, TPO sheet.
1. Thickness: 60 mils (1.5 mm), nominal.
  2. Exposed Face Color: White

## 2.3 ACCESSORY ROOFING MATERIALS

- A. General: Accessory materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
- B. Sheet Flashing: Manufacturer's standard unreinforced TPO sheet flashing, 55 mils (1.4 mm) thick, minimum, of same color as TPO sheet.
- C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- D. Bonding Adhesive: Manufacturer's standard.
- E. Slip Sheet: Provide Manufacturer's standard, of thickness required for application when recommended by manufacturer.
- F. Metal Termination Bars: Manufacturer's standard predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.
- G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.
- H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.
- I. Waterproofing Sheet – Coordinate with and incorporate installation of the waterproofing sheet Ref Section 071326

## 2.4 SUBSTRATE BOARD

- A. Glass-Mat Gypsum Roof Substrate Board: ASTM C1177/C1177M, water-resistant gypsum board.
  - 1. Thickness: Type X, 5/8 inch (16 mm) thick.
  - 2. Surface Finish: Factory primed.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.

## 2.5 ROOF INSULATION

- A. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 2, Grade 2, felt or glass-fiber mat facer on both major surfaces.
  - 1. Size: 48 by 96 inches (1219 by 2438 mm).
  - 2. Thickness:
    - a. Base Layer: 2-1/2 inches (38 mm).
    - b. Upper Layer: 2 1/2 inches.
- B. Tapered Insulation: Provide factory-tapered insulation boards.
  - 1. Material: Match roof insulation
  - 2. Minimum Thickness: 1/4 inch (6.35 mm).
  - 3. Slope:
    - a. Saddles and Crickets: 1/2 inch per foot (1:24) unless otherwise indicated on Drawings.

## 2.6 INSULATION ACCESSORIES AND COVER BOARD

- A. Fasteners: Factory-coated steel fasteners with metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate and into wood decking., and acceptable to roofing system manufacturer.
- B. Insulation Adhesive: Insulation manufacturer's recommended adhesive formulated to attach roof insulation to substrate or to another insulation layer as follows:
  - 1. Bead-applied, low-rise, one-component or multicomponent urethane adhesive.
- C. Fiber-Reinforced Cementitious Cover Board: ASTM C1325, fiber-mat-reinforced cementitious board.
  - 1. Thickness: 1/2 inch (13 mm).

## 2.7 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway rolls, approximately 3/16 inch (5 mm) thick and acceptable to roofing system manufacturer.
  - 1. Size: Approximately 36 inches wide by roll length
  - 2. Minimum cut length 60 inches (914 by 1524 mm).
  - 3. Color: Contrasting with roof membrane.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

### 3.2 PREPARATION

- A. Perform fastener-pullout tests according to roof system manufacturer's written instructions.
  - 1. Submit test result within 24 hours after performing tests.
    - a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

### 3.3 INSTALLATION OF ROOFING, GENERAL

- A. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning Work on adjoining roofing.

### 3.4 INSTALLATION OF SUBSTRATE BOARD

- A. Install substrate board with long joints in continuous straight lines, with end joints staggered not less than 24 inches (610 mm) in adjacent rows.
  - 1. Tightly butt substrate boards together.
  - 2. Cut substrate board to fit tight around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - 3. Fasten substrate board to wood deck to resist uplift pressure at corners, perimeter, and field of roof according to roofing system manufacturers' written instructions.

### 3.5 INSTALLATION OF INSULATION

- A. Coordinate installing roofing system components, so insulation is not exposed to precipitation or left exposed at end of workday.
- B. Comply with roofing system and roof insulation manufacturer's written instructions for installing roof insulation.

- C. At arched surface of barrel section of roof, take additional care to ensure full surface contact of insulation to substrate and of insulation to insulation. There should not be any gaps or rocking between insulation and adjacent layers of the roofing system. All board surfaces areas should be in contact and flush to one another.
- D. Installation Over Substrate Board Wood Decking:
1. Mechanically fasten slip sheet to substrate board /roof deck using mechanical fasteners specifically designed and sized for fastening slip sheet to wood decks.
    - a. Fasten slip sheet according to requirements in SPRI's Directory of Roof Assemblies for specified Wind Uplift Load Capacity.
  2. Install base layer of insulation with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
    - a. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    - b. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
    - c. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
      - 1) Trim insulation so that water flow is unrestricted.
    - d. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
    - e. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
  3. Mechanically attach base layer of insulation and substrate board using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to wood decks.
    - a. Fasten insulation according to requirements in SPRI's Directory of Roof Assemblies for specified Wind Uplift Load Capacity.
  4. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches (305 mm) from previous layer of insulation.
    - a. Install with long joints continuous and with end joints staggered not less than 12 inches (305 mm) in adjacent rows.
    - b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
    - c. Make joints between adjacent insulation boards not more than 1/4 inch (6 mm) in width.
    - d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches (610 mm).
      - 1) Trim insulation so that water flow is unrestricted.

- e. Fill gaps exceeding 1/4 inch (6 mm) with insulation.
- f. Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
- g. Adhere each layer of insulation to substrate using adhesive according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29.

### 3.6 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches (150 mm) in each direction.
  - 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
  - 2. At internal roof drains, conform to slope of drain sump.
    - a. Trim cover board so that water flow is unrestricted.
  - 3. Cut and fit cover board tight to nailers, projections, and penetrations.
  - 4. Adhere cover board to substrate using adhesive according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
    - a. Set cover board in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.

### 3.7 INSTALLATION OF ADHERED ROOF MEMBRANE

- A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.
- B. Unroll roof membrane and allow to relax before installing.
- C. Accurately align roof membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.
- E. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.
- F. Apply roof membrane with side laps shingled with slope of roof deck where possible.
- G. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings, to ensure a watertight seam installation.



1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

### 3.8 INSTALLATION OF BASE FLASHING

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

### 3.9 INSTALLATION OF WALKWAYS

A. Flexible Walkways:

1. Install flexible walkways at the following locations:
  - a. Locations indicated on Drawings.
  - b. As required by roof membrane manufacturer's warranty requirements.
2. Provide 2-inch (76-mm) clearance between adjoining pads.
3. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

### 3.10 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.
- B. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

### 3.11 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing system, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

END OF SECTION 075423

## SECTION 077100 - ROOF SPECIALTIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Copings.
2. Roof-edge drainage systems.
3. Other flashings

##### B. Preinstallation Conference: Conduct conference at Project site

#### 1.2 ACTION SUBMITTALS

##### A. Product Data: For each type of product.

##### B. Shop Drawings: For roof specialties.

1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.

##### C. Samples: For each type of roof specialty and for each color and texture specified.

#### 1.3 INFORMATIONAL SUBMITTALS

##### A. Product Test Reports: For tests performed by a qualified testing agency.

##### B. Sample warranty.

#### 1.4 CLOSEOUT SUBMITTALS

##### A. Maintenance Data: For roofing specialties to include in maintenance manuals.

#### 1.5 QUALITY ASSURANCE

##### A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are SPRI ES-1 tested to specified design pressure.

#### 1.6 WARRANTY

##### A. Roofing-System Warranty: Roof specialties are included in warranty provisions in this Section.

##### B. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:

- a. Color fading more than 5 Delta E units when tested according to ASTM D2244.

- b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
  - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 20 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. SPRI Wind Design Standard: Manufacture and install copings roof-edge specialties tested according to SPRI ES-1 and capable of resisting the following design pressures:
  1. Design Pressure: per manufactures wind load calculations.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
  1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

### 2.2 COPINGS

- A. Metal Copings: Manufactured coping system consisting of metal coping cap in section lengths not exceeding 12 feet (3.6 m) concealed anchorage; with corner units, end cap units, and concealed splice plates with finish matching coping caps.
  1. Metallic-Coated Steel Sheet Coping Caps: Zinc-coated (galvanized) steel, nominal 0.034-inch (0.86-mm) thickness
    - a. Surface: Smooth, flat finish.
    - b. Finish: Three-coat fluoropolymer
    - c. Color: As selected by Architect from manufacturer's full range
  2. Corners: Factory mitered and continuously welded
  3. Coping-Cap Attachment Method: face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.
    - a. Face-Leg Cleats: Concealed, continuous galvanized-steel sheet

### 2.3 ROOF-EDGE DRAINAGE SYSTEMS

- A. Downspouts: Plain rectangular complete with mitered elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.
  1. Zinc-Coated Steel: Nominal 0.034-inch (0.86-mm)

- B. Parapet Scuppers: Manufactured with closure flange trim to exterior, 4-inch- (100-mm-) wide wall flanges to interior, and base extending 4 inches (100 mm) beyond cant or tapered strip into field of roof.
  - 1. Zinc-Coated Steel: Nominal 0.028-inch (0.71-mm) thickness.
- C. Conductor Heads: Manufactured conductor heads, each with flanged back and stiffened top edge, and of dimensions and shape indicated, complete with outlet tube that nest into upper end of downspout, exterior flange trim, and built-in overflow.
  - 1. Zinc-Coated Steel: Nominal 0.028-inch (0.71-mm) thickness.
- D. Zinc-Coated Steel Finish: Three-coat fluoropolymer.
  - 1. Color: As selected by Architect from manufacturer's full range.

#### 2.4 OTHER FLASHINGS

- A. Thru-Wall Scupper Sleeves: Manufactured units formed to provide secure interlocking of separate counterflashing pieces with the scupper units.
  - 1. Zinc-Coated Steel: Nominal 0.022-inch (0.56-mm).
  - 2. Corners: Factory mitered and continuously welded.
- B. Specialty Drainage pans: Manufactured units to transition new roofing elevation to flow lines of existing scupper openings. Provide positive drainage on all surfaces, sloping to scupper.
  - 1. Zinc-Coated Steel: Nominal 0.022-inch (0.56-mm)
- C. Corners: Factory mitered and continuously welded Chimney Cap.
  - 1. Zinc-Coated Steel: Nominal 0.022-inch (0.56-mm).
  - 2. Zinc-Coated Steel Finish: Three-coat fluoropolymer.

#### 2.5 MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 (Z275) coating designation.

#### 2.6 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum 30 to 40 mils (0.76 to 1.0 mm) thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
  - 1. Thermal Stability: ASTM D1970/D1970M; stable after testing at 240 deg F (116 deg C).
  - 2. Low-Temperature Flexibility: ASTM D1970/D1970M; passes after testing at minus 20 deg F (29 deg C).
- B. Slip Sheet: Rosin-sized building paper, 3-lb/100 sq. ft. (0.16-kg/sq. m) minimum.

## 2.7 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
  - 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
  - 2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A153/A153M or ASTM F2329.
- B. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- C. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.
- E. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.

## 2.8 FINISHES

- A. Coil-Coated Galvanized-Steel Sheet Finishes:
  - 1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with ASTM A755/A755M and coating and resin manufacturers' written instructions.
    - a. Three-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent polyvinylidene fluoride (PVDF) resin by weight in both color coat and clear topcoat.

## PART 3 - EXECUTION

### 3.1 INSTALLATION OF UNDERLAYMENT

- A. Self-Adhering Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (152 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 14 days.
  - 1. Apply continuously under copings roof-edge specialties and other flashings.
  - 2. Coordinate application of self-adhering sheet underlayment under roof specialties with requirements for continuity with adjacent air barrier materials.
- B. Slip Sheet: Install with tape or adhesive for temporary anchorage to minimize use of mechanical fasteners under roof specialties. Apply in shingle fashion to shed water, with lapped joints of not less than 2 inches (50 mm).

### 3.2 INSTALLATION, GENERAL

- A. Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayment's, sealants, and other miscellaneous items as required to complete roof-specialty systems.
  - 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
  - 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.
  - 4. Torch cutting of roof specialties is not permitted.
  - 5. Do not use graphite pencils to mark metal surfaces.
  
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
  - 1. Coat concealed side of uncoated aluminum and stainless steel roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
  - 2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
  
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
  - 1. Space movement joints at a maximum of 12 feet (3.6 m) > with no joints within 18 inches (450 mm) of corners or intersections unless otherwise indicated on Drawings.
  - 2. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
  
- D. Fastener Sizes: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
  
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
  
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F (4 deg C).

### 3.3 INSTALLATION OF COPING

- A. Install cleats, anchor plates, and other anchoring and attachment accessories and devices with concealed fasteners.
  
- B. Anchor copings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.

1. Interlock face and back leg drip edges of snap-on coping cap into cleated anchor plates anchored to substrate at least 30-inch (762-mm) centers but no less than manufacturers required spacing that meets performance requirements Retain subparagraph below for copings with back leg fasteners exposed.
2. Interlock face-leg drip edge into continuous cleat anchored to substrate at least 16-inch (406-mm) centers but no less than manufacturers required spacing that meets performance requirements. Anchor back leg of coping with screw fasteners and elastomeric washers at same spacings. 24-inch (610-mm) centers 16-inch (406-mm) centers manufacturers required spacing that meets performance requirements

### 3.4 INSTALLATION OF ROOF-EDGE DRAINAGE-SYSTEM

- A. Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.
- B. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1-inch (25 mm) away from walls; locate fasteners at top and bottom and at approximately 60 inches (1500 mm) o.c.
  1. Connect downspouts to underground drainage system indicated.
- C. Parapet Scuppers: Install scuppers through parapet where indicated. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
- D. Conductor Heads: Anchor securely to wall with elevation of conductor top edge 1 inch (25 mm) below scupper discharge.

### 3.5 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed.

END OF SECTION 077100



## SECTION 077200 - ROOF ACCESSORIES

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Roof hatches.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of roof accessory.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Sample warranties.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

#### 1.5 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within 10 years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 ROOF HATCHES

- A. Roof Hatches: Metal roof-hatch units with lids and insulated single walled curbs, welded and sealed corner joints, continuous lid-to-curb counterflashing and weathertight perimeter gasketing, straight sides, and integrally formed deck-mounting flange at perimeter bottom.

1. Accessible Manufactures / Products;

- a. Activar Construction Product Group Inc. Model RHG-STH Series Roof Hatch with Safety Railing.
- b. Bilco Tyman Group. Model Ladder Access Type S-20 with Bil-Guard 2.0 Safety Railing System Model RL2-S.
- c. Babcock Davis. Personnel Roof Hatch Model BG3630 with Safety Railing Model SRCAY36X30FG.

2. Type and Size: Single-leaf lid 30 by 36 inches (750 by 900 mm).

3. Loads: Minimum 40-lbf/sq. ft. (1.9-kPa) external live load and 30-lbf/sq. ft. (1.4-kPa) internal uplift load.

- a. When release is actuated, lid shall open against 10-lbf/sq. ft. (0.5-kPa) snow or wind load and lock in position.
4. Curb, Framing, and Lid Material: Zinc-coated (galvanized) steel sheet.
  - a. Thickness: 14 ga.
  - b. Finish: Baked enamel or powder coat.
  - c. Color As selected by Architect from manufacturer's full range.
5. Safety Railing
  - a. Provide integral safety railing and gate to surround roof hatch, acting as a single unit with the roof hatch.
  - b. Construct from Galvanized Steel tubing
  - c. Finish: Safety Yellow powder coat paint
6. Construction:
  - a. Hatch Lid: Opaque, insulated, and double walled, with manufacturer's standard metal liner of same material and finish as outer metal lid.
  - b. Fabricate curbs to minimum height of 12 inches (305 mm) above roofing surface unless otherwise indicated.

## 2.2 METAL MATERIALS

- A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M, G90 (Z275) coating designation.
  1. Baked-Enamel or Powder-Coat Finish: After cleaning and pretreating, apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat to a minimum dry film thickness of 2 mils (0.05 mm).
- B. Steel Shapes: ASTM A36/A36M, hot dip galvanized according to ASTM A123/A123M unless otherwise indicated.
- C. Galvanized-Steel Tube: ASTM A500/A500M, round tube, hot-dip galvanized according to ASTM A123/A123M.

## 2.3 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Cellulosic-Fiber Board Insulation: ASTM C208, Type II, Grade 1, thickness as indicated.
- C. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
  - D. Gaskets: Manufacturer's standard tubular EPDM,

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Verify dimensions of roof openings for roof accessories. Install roof accessories according to manufacturer's written instructions.
  - 1. Install roof accessories level; plumb; true to line and elevation; and without warping, jogs in alignment, buckling, or tool marks.
  - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
  - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
  - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
  - 1. Coat concealed side of roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
  - 2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of underlayment and cover with manufacturer's recommended slip sheet.
- C. Seal joints with sealant as required by roof accessory manufacturer.

### 3.2 REPAIR AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A780/A780M.
- B. Touch up factory-primed surfaces with compatible primer ready for field painting according to Section 099113 "Exterior Painting."
- C. Clean exposed surfaces according to manufacturer's written instructions.
- D. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

## SECTION 079200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Silicone joint sealants.
2. Latex joint sealants.

#### 1.2 PREINSTALLATION MEETINGS

- ##### A. Preinstallation Conference: Conduct conference at Project site.

#### 1.3 ACTION SUBMITTALS

##### A. Product data.

- ##### B. Samples: Manufacturer's standard color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

##### C. Joint-sealant schedule.

#### 1.4 INFORMATIONAL SUBMITTALS

##### A. Sample warranties.

#### 1.5 CLOSEOUT SUBMITTALS

##### A. Warranty Documentation:

1. Manufacturers' special warranties.
2. Installer's special warranties.

#### 1.6 QUALITY ASSURANCE

##### A. Qualifications:

1. Installers: Authorized representative who is trained and approved by manufacturer.

#### 1.7 WARRANTY

- ##### A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  - 1. Warranty Period: Five years from date of Substantial Completion.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
  - 1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
  - 2. Disintegration of joint substrates from causes exceeding design specifications.
  - 3. Mechanical damage caused by individuals, tools, or other outside agents.
  - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

## PART 2 - PRODUCTS

### 2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

### 2.2 SILICONE JOINT SEALANTS

- A. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.

### 2.3 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C834, Type OP, Grade NF.

### 2.4 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C1330, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

## 2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    - a. Concrete.
    - b. Masonry.
  - 3. Remove laitance and form-release agents from concrete.
  - 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
    - a. Metal.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.2 INSTALLATION OF JOINT SEALANTS

- A. Special Inspection for application at existing exterior windows. An on-site inspection is required with the owner / Architect after existing sealant is removed and joints are cleaned. Approval from same is required before work to reseal windows may begin.
- B. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- C. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- D. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealant from surfaces adjacent to joints.
  - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 3. Provide flush joint profile at [ $\gt$ ] in accordance with Figure 8B in ASTM C1193.
    - a. Use masking tape to protect surfaces adjacent to tooled joints.
- G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.
- H. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

### 3.3 FIELD QUALITY CONTROL

#### A. Tests and Inspections:

##### 1. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

###### a. Extent of Testing: Test completed and cured sealant joints as follows:

1) Perform 10 tests for the first 1000 ft. (300 m) of joint length for each kind of sealant and joint substrate.

###### b. Test Method: Test joint sealants in accordance with Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.

1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

###### c. Inspect tested joints and report on the following:

1) Whether sealants filled joint cavities and are free of voids.

2) Whether sealant dimensions and configurations comply with specified requirements.

3) Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.

###### d. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.

###### e. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

##### 2. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

#### B. Prepare test and inspection reports.

### 3.4 JOINT-SEALANT SCHEDULE

#### A. Exterior joints in vertical surfaces and horizontal nontraffic surfaces JS-1.



1. Joint Locations:
    - a. Perimeter joints between exterior materials and frames of windows and louvers.
  2. Joint Sealant: Silicone,
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors with final color matching color of existing exterior windows.
- B. Exterior joints in vertical surfaces and horizontal nontraffic surfaces JS-2:
1. Joint Locations:
    - a. Joint between metal parapet cap and exterior wall.
    - b. Other joints as indicated on Drawings.
  2. Joint Sealant: Silicone,
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors with final color matching color of adjacent material (metal parapet cap).
- C. Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement JS-3:
1. Joint Locations:
    - a. Control joints on exposed interior surfaces of exterior walls.
    - b. Perimeter joints between interior wall surfaces and frames of interior doors and windows
    - c. Insert other joints. joints between any two different materials in order to close construction joint.
    - d. Other joints as indicated on Drawings.
  2. Joint Sealant: Acrylic latex
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors. Joint sealant to be painted when adjacent to surfaces receiving new paint.

END OF SECTION 079200

## SECTION 092900 - GYPSUM BOARD

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Interior gypsum board.

#### 1.2 ACTION SUBMITTALS

A. Product Data:

1. Gypsum board, Type X.
2. Interior trim.
3. Joint treatment materials.

### PART 2 - PRODUCTS

#### 2.1 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

#### 2.2 INTERIOR GYPSUM BOARD

- A. Gypsum Board, Type X: ASTM C1396/C1396M.

1. Thickness: 1/2 inch (15.9 mm). Field verify to match thickness of existing gypsum board to remain adjacent to work. All patchwork to be smooth and flush with surrounding surfaces.
2. Long Edges: Tapered.

#### 2.3 TRIM ACCESSORIES

- A. Interior Trim: ASTM C1047.

1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
2. Shapes:
  - a. Cornerbead.

#### 2.4 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C475/C475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.

- C. Joint Compound for Interior Gypsum Board: For each coat, use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
3. Fill Coat: For second coat, use drying-type, all-purpose compound.
4. Finish Coat: For third coat, use drying-type, all-purpose compound.
5. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.

## 2.5 AUXILIARY MATERIALS

- A. Provide auxiliary materials that comply with referenced installation standards and manufacturer's written instructions.
- B. Steel Drill Screws: ASTM C1002 unless otherwise indicated.
  1. Use screws complying with ASTM C954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.

## PART 3 - EXECUTION

### 3.1 INSTALLATION AND FINISHING OF PANELS

- A. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- B. Comply with ASTM C840.
- C. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- D. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- E. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C840:
  1. Level 5: for all patchwork.
    - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."

### 3.2 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 092900

## SECTION 095113 - ACOUSTICAL PANEL CEILINGS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes acoustical panels and exposed suspension systems for interior ceilings.

#### 1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at the Project site

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

- A. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Flame-Spread Index: Class A according to ASTM E1264.
  - 2. Smoke-Developed Index:450 or less.

#### 2.2 ACOUSTICAL PANELS ACT-1

- A. Acoustical Panel Standard: Manufacturer's standard panels according to ASTM E1264.
- B. Color: White – field verify Match color of existing to remain that is adjacent to work
- C. Edge/Joint Detail: Match detail of existing to remain that is adjacent to work.
- D. Thickness: Match thickness of existing to remain that is adjacent to work
- E. Modular Size: 24 by 48 inches – field verify Match size of existing to remain that is adjacent to work.

#### 2.3 METAL SUSPENSION SYSTEM ACT-1

- A. Metal Suspension-System Standard: Manufacturer's standard, direct-hung, metal suspension system and accessories according to ASTM C635/C635M.

- B. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized, G30 (Z90) coating designation; with prefinished 15/16-inch- (24-mm-) wide metal caps on flanges.
  - 1. Structural Classification: Intermediate, Heavy-duty system.
  - 2. End Condition of Cross Runners: Override (stepped) or butt-edge type.
  - 3. Face Design: Flat, flush.
  - 4. Cap Material: Cold-rolled steel or aluminum.
  - 5. Cap Finish: White – field verify. Painted to match color of acoustical unit.

## 2.4 ACCESSORIES

- A. Attachment Devices: Size for five times the design load indicated in ASTM C635/C635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

## 2.5 METAL EDGE MOLDINGS AND TRIM ACT-1

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile to match existing to remain that is adjacent to work formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated.
- B. Layout openings for penetrations centered on the penetrating items.

### 3.2 INSTALLATION

- A. Install acoustical panel ceilings according to ASTM C636/C636M and manufacturer's written instructions.
- B. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
  - 1. Do not use exposed fasteners, including pop rivets, on moldings and trim.
  - 2. Arrange directionally patterned acoustical panels to match pattern of existing panels to remain that are adjacent to work.

END OF SECTION 095113

## SECTION 096519 - RESILIENT TILE FLOORING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Vinyl composition floor tile.

#### 1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and pattern specified.

#### 1.3 CLOSEOUT SUBMITTALS

A. Maintenance data.

#### 1.4 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for floor tile installation.

### PART 2 - PRODUCTS

#### 2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For resilient floor tile, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

#### 2.2 VINYL COMPOSITION FLOOR TILE VCT-1

A. Tile Standard: ASTM F1066, Class 2, through pattern.

B. Wearing Surface: Smooth Thickness: 0.125 inch

C. Size: 12 by 12 inches

D. Colors and Patterns: As indicated by manufacturer's designations Submit all samples of complete color palette for all basic and premium colors available for selection.

#### 2.3 FLOOR TILE ACCESSORIES

A. Vinyl Wall Base VB-1

1. Standard 4" profile with toe base in 4ft lengths.
2. Provide integral pre-formed inside and outside corners.

3. Install tight to surfaces with no visible gaps. Run continuous along all wall surfaces, in cabinet toe spaces and behind equipment.
4. Provide full range of manufacturers color samples for Architect's selection.

B. Transition Strip

1. Provide Vinyl Floor Transitions
2. Provide minimal profile bridging elevation change and finish smooth with adjacent floors
3. Material, surface, slope and step to meet ADA requirements.
4. Provide color matching VCT flooring.
5. Locate transition strips at termination of new flooring not abutting walls or other vertical surfaces.
6. Centered transition under door in closed position when flooring terminates at room boundary.

2.4 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by floor tile manufacturer for applications indicated.
- B. Adhesives: Water-resistant type recommended by floor tile and adhesive manufacturers to suit floor tile and substrate conditions indicated.
- C. Floor Polish: Provide protective, liquid floor-polish products recommended by floor tile manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare substrates according to floor tile manufacturer's written instructions to ensure adhesion of resilient products.

3.2 FLOOR TILE INSTALLATION

- A. Comply with manufacturer's written instructions for installing floor tile.
- B. Lay out floor tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half tile at perimeter.
  1. Lay tiles square with room axis.
- C. Match floor tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Discard broken, cracked, chipped, or deformed tiles.

- D. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern). Scribe, cut, and fit floor tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- E. Extend floor tiles into toe spaces, door reveals, closets, and similar openings.
- F. Extend floor tiles to center of door openings. If flooring terminates in the room at the doorway, accommodate for transition strip so that transition strip is centered under closed door.
- G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on floor tiles as marked on substrates. Use chalk or other nonpermanent marking device.
- H. Install floor tiles on covers for telephone and electrical ducts, building expansion-joint covers, and similar items in installation areas. Maintain overall continuity of color and pattern between pieces of tile installed on covers and adjoining tiles. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.
- I. Adhere floor tiles to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.
- J. Floor Polish: Remove soil, adhesive, and blemishes from floor tile surfaces before applying liquid floor polish.
  - 1. Apply three.

END OF SECTION 096519



## SECTION 096813 - TILE CARPETING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Modular carpet tile.

#### 1.2 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture required.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Sample warranty.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Certified by the International Certified Floorcovering Installers Association.

#### 1.7 WARRANTY

- A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
1. Warranty Period: 10 years from date of Substantial Completion.

### PART 2 - PRODUCTS

#### 2.1 CARPET TILE, CPT-1

A. Acceptable manufactures / Products

1. Milliken, Midnight Sparkle - Bell Acre
2. Mohawk Group, MycoLoop
3. Mannington Commercial, Everywear III & Everywear Plus

- B. Color: As selected by Architect from manufacturer's full range.
- C. Pattern: General, Minor, Undefined or non-directional
- D. Fiber Content: 100 percent nylon 6, 6
- E. Construction Characteristic: Tufted, Textured Loop
- F. Density: Average Finished Density 7,855
- G. Pile Thickness: 0.11 inches for finished carpet tile according to ASTM D6859.
- H. Stitches: 8.8 stitches per inch
- I. Gage: 1/8
- J. Face Weight range 24 Oz/sqyd
- K. Primary Backing/Backcoating: Manufacturer's standard composite materials.
- L. Size range 24 inch by 24 inch to 1 meter by 1 meter.
- M. Applied Treatments:
  - 1. Soil-Resistance Treatment:
  - 2. Antimicrobial Treatment: that protects carpet tiles as follows:
    - a. Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria, not less than 1-mm halo of inhibition for gram-negative bacteria, and no fungal growth, according to AATCC 174.
- N. Performance Characteristics:
  - 1. Appearance Retention Rating: Severe Traffic, minimum according to ASTM D7330.
  - 2. Flammability (Radiant Panel ASTM E-648) >0.45 Class I.
  - 3. Smoke Density (NFPA 258-T or ASTM E-662) <450.
  - 4. Dimensional Tolerance: Within 1/32 inch (0.8 mm) of specified size dimensions, as determined by physical measurement.
  - 5. Dimensional Stability: 0.2 percent or less according to ISO 2551 (Aachen Test).
  - 6. Colorfastness to Crocking: Not less than 4, wet and dry, according to AATCC 165.
  - 7. Colorfastness to Light: Not less than 4 after 80 AFU (AATCC fading units) according to AATCC 16, Option E.

## 2.2 INSTALLATION ACCESSORIES

- A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement-based formulation provided or recommended by carpet tile manufacturer.

- B. Adhesives: Water-resistant, mildew-resistant, nonstaining, pressure-sensitive type to suit products and subfloor conditions indicated, that comply with flammability requirements for installed carpet tile, and are recommended by carpet tile manufacturer for releasable installation.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

##### A. Concrete Slabs:

1. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft. (18.6 sq. m) and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
  - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of [3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m)]in 24 hours.
  - b. Relative Humidity Test: Using in situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum [75] percent relative humidity level measurement.
  - c. Perform additional moisture tests recommended in writing by adhesive and carpet tile manufacturers. Proceed with installation only after substrates pass testing.

B. Wood Subfloors: Verify that underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.

C. Metal Subfloors: Verify that underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.

D. Painted Subfloors: Perform bond test recommended in writing by adhesive manufacturer.

#### 3.2 PREPARATION

A. General: Comply with the Carpet and Rug Institute's CRI 104 and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile.

B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch (3 mm) wide or wider, and protrusions more than 1/32 inch (0.8 mm) unless more stringent requirements are required by manufacturer's written instructions.

C. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.

D. Metal Substrates: Clean grease, oil, soil and rust, and prime if recommended in writing by adhesive manufacturer. Rough sand painted metal surfaces and remove loose paint. Sand aluminum surfaces, to remove metal oxides, immediately before applying adhesive.

- E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

### 3.3 INSTALLATION

- A. General: Comply with the Carpet and Rug Institute's CRI 104, Section 10, "Carpet Tile," and with carpet tile manufacturer's written installation instructions.
- B. Installation Method:
  - 1. As recommended in writing by carpet tile manufacturer
  - 2. Glue down; install every tile with full-spread, releasable, pressure-sensitive adhesive.
- C. Maintain dye-lot integrity. Do not mix dye lots in same area.
- D. Maintain pile-direction patterns recommended in writing by carpet tile manufacturer.
- E. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
- F. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- G. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on carpet tile as marked on subfloor. Use nonpermanent, nonstaining marking device.
- H. Install pattern parallel to walls and borders.
- I. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION 096813

## SECTION 099113 - EXTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Primers.
2. Finish coatings.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of topcoat product.

#### 1.3 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Sherwin-Williams
- B. Benjamin Moore & Co
- C. PPG Paints
- D. Rust-Oleum Corporation

#### 2.2 PAINT PRODUCTS, GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another, and substrates indicated, under conditions of service and application as demonstrated by manufacturer based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by topcoat manufacturer for use in paint system and on substrate indicated.

- B. Colors: As selected by Architect from manufacturer's full range

#### 2.3 PRIMERS

- A. Zinc-Rich, Inorganic Primer: Corrosion-resistant, inorganic-based, zinc-rich primer formulated for use on prepared steel subject to severe industrial or marine environments.

- B. Epoxy Metal Primer: Corrosion-resistant, solvent-based, two-component epoxy primer formulated for use on prepared, exterior ferrous- and galvanized-metal surfaces.

## 2.4 FINISH COATINGS

- A. High-Build Epoxy Paint, Low Gloss: High-solids, two-component epoxy; formulated for use on exterior concrete, masonry, and primed-metal surfaces.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify suitability of substrates, including surface conditions and compatibility, with finishes and primers.
- B. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.
  - 2. All existing rust conditions have been removed.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. All existing steel components that are to be repainted, are to be completely rust-free. Strip, sand, grind or apply chemical rust removal to remove all rust without damaging or diminishing the structural integrity of the steel component.
- D. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems specified in this Section.

### 3.3 INSTALLATION

- A. Apply paints in accordance with manufacturer's written instructions.
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 CLEANING AND PROTECTION

- A. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- B. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.5 EXTERIOR PAINTING SCHEDULE

- A. Existing Steel Substrates:
  - 1. Light Industrial Coating System:
    - a. Prime Coat: Zinc-rich, inorganic primer.
    - b. Intermediate Coat: Matching topcoat.
    - c. Topcoat: Exterior, High-Build Epoxy Paint, low sheen.
- B. Galvanized-Metal Substrates:
  - 1. Light Industrial Coating System:
    - a. Prime Coat: Epoxy metal primer.
    - b. Intermediate Coat: Matching topcoat.
    - c. Topcoat: Exterior, High-Build Epoxy Paint, low sheen.
- C. Colors:
  - 1. PT-3 Match Brick
    - a. Loose Lintels
    - b. Existing Steel and Galvanized Metals
    - c. Color to existing adjacent masonry brickwork
  - 2. PT-4 Black
    - a. Steel pipe guardrail, Metal access ladder and Metal platforms
    - b. Existing Steel and Galvanized Metals
    - c. Color to be black

END OF SECTION 099113

## SECTION 099123 - INTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. Section Includes:

1. Primers.
2. Solvent-based finish coatings.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each type of topcoat product.
- C. Product Schedule: Use same designations indicated on Drawings and in the Interior Painting Schedule to cross-reference paint systems specified in this Section. Include color designations.

#### 1.3 QUALITY ASSURANCE

- A. Mockups: Matching Existing - Apply mockups of each paint system indicated and each color and finish selected at a location adjacent to the existing to remain in order to demonstrate aesthetic effects and set quality standards for materials and execution.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Sherwin-Williams
- B. Benjamin Moore & Co.
- C. PPG Paints

#### 2.2 PAINT PRODUCTS, GENERAL

A. Material Compatibility:

1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

- B. Colors: Match existing color of adjacent surfaces.



## 2.3 PRIMERS

- A. Interior/Exterior Latex Block Filler: Water-based, high-solids, emulsion coating formulated to bridge and fill porous surfaces of exterior concrete masonry units in preparation for specified subsequent coatings.
- B. Interior Alkyd Primer Sealer: Solvent-based, alkyd-type, primer/sealer for new interior wood, plaster, and porous surfaces,

## 2.4 SOLVENT-BASED FINISH COATS

- A. Interior, Alkyd, Semigloss: Pigmented, solvent-based alkyd paint for use on primed/sealed interior plaster, gypsum, wood, and masonry walls in moderate traffic commercial environments.
  - 1. Gloss Level: Match existing.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- B. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
- C. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

### 3.3 INSTALLATION

- A. Apply paints according to manufacturer's written instructions.
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 3.4 CLEANING AND PROTECTION

- A. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- B. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.5 INTERIOR PAINTING SCHEDULE

- A. Clay Masonry Substrates:
  - 1. Alkyd System PT-1:
    - a. Prime Coat: Interior/Exterior Latex Block Filler
    - b. Intermediate Coat: Matching topcoat.
    - c. Topcoat: Interior, alkyd, semigloss matching existing
- B. Gypsum Board Substrates:
  - 1. Alkyd over Latex Sealer System PT-1 Walls and Trim:
    - a. Prime Coat: Interior latex primer sealer.
    - b. Intermediate Coat: Matching topcoat.
    - c. Topcoat: Interior, alkyd, semigloss Matching Existing
  - 2. Alkyd over Latex Sealer System PT-2 Ceilings:
    - a. Prime Coat: Interior latex primer sealer.
    - b. Intermediate Coat: Matching topcoat.
    - c. Topcoat: Interior, alkyd, eggshell Matching Existing

END OF SECTION 099123

# ATTACHMENTS

# Limited Asbestos Sampling



Intertek-PSI  
11826 Borman Drive  
St. Louis, Missouri 63146

Tel +1 314 432 8073  
[intertek.com/building](http://intertek.com/building)

August 1, 2023

Etegra  
1121 Olivette Executive Parkway, Suite 100  
Olivette, Missouri 63132

Attn: Mr. John Reynolds, Senior Architectural Designer  
Email: [john.reynolds@etegra.com](mailto:john.reynolds@etegra.com)

Re: **Letter Report for Limited Asbestos Sampling and Limited Lead-Based Paint Testing**  
National Guard Readiness Center  
300 South Main Street  
Sikeston, Missouri 65301  
**PSI Project Number: 0029-5966**

Dear Mr. Reynolds:

As requested, Professional Service Industries, Inc. (PSI), an Intertek Company, performed limited asbestos sampling and limited lead-based paint testing at the National Guard Readiness Center located at 1300 South Main Street in Sikeston, Missouri.

#### LIMITED ASBESTOS SAMPLING

The purpose of the scope of work is to perform limited asbestos sampling for the Client. This survey is intended to identify ACM and Presumed ACM in VCT, sheet vinyl and flooring mastic. Additional information relative to friability, condition, and quantity is provided to assist the owner or his representative in the appropriate decisions involved with planning the renovation.

On July 27, 2023, bulk samples were collected by Mr. Matthew Basch, an accredited State of Missouri asbestos inspector for PSI. The bulk samples were transported under proper chain of custody to EMSL Analytical, Inc., a NVLAP accredited laboratory in St. Louis, Missouri for analysis by polarized light microscopy (PLM). The laboratory report, chain-of-custody form, inspector, and laboratory certifications are attached to this letter report. A summary of the bulk sample results is as follows:



| SAMPLE ID           | MATERIAL DESCRIPTION                               | LOCATION  | % ACM                            | ESTIMATED QUANTITY | FRIABLE/<br>NON-FRIABLE | CONDITION |
|---------------------|--|---|----------------------------------|--------------------|-------------------------|-----------|
| NGB-FT-A-01, 02, 03 | (1) 12"x 12" Floor Tile, blue<br>(2) Mastic, black | Classroom A108  | (1) ND, ND, ND<br>(2) ND, ND, ND | NA                 | NF                      | Fair      |
| NGB-FT-B-01, 02, 03 | (1) 12"x 12" Floor Tile, gray<br>(2) Mastic, tan   | Electrical closet, East<br>Stairwell, Stage, A205, A207 | (1) ND, ND, ND<br>(2) ND, ND, ND | NA                 | NF                      | Fair      |
| NGB-FT-C-01, 02, 03 | (1) Floor Sheeting<br>(2) Adhesive, tan            | A209-Room, A205   | (1) ND, ND, ND<br>(2) ND, ND, ND | NA                 | NF                      | Fair      |

Materials found to be asbestos containing are presented in *italics* and **bold** type.

ND=No Asbestos Detected NA=Not Applicable NT= Not Tested due to 1<sup>st</sup> Positive Stop NS=Not Sampled

CH=Chrysotile AM=Amosite LF=Linear Feet SF=Square Feet EA=Each

A material is considered, by the EPA and/or State of Missouri, to be asbestos-containing if at least one sample collected from the homogenous area contains asbestos in an amount greater than 1%. A material is defined as friable (F) if the material can be reduced to a powder by hand pressure when dry. Non-Friable (NF) materials that are damaged can also be considered friable.

Based on the sample results, the materials sampled do NOT contain asbestos.

**LIMITED LEAD-BASED PAINT TESTING**

On July 27, 2023, Mr. Matthew Basch, State of Missouri accredited lead inspector for PSI, used a Heuresis Pb 200i X-Ray Fluorescence (XRF) Paint Analyzer to determine the presence and amount of lead in painted components that may be potentially disturbed as part of the planned remediation/renovation activities.

The Environmental Protection Agency (EPA), the United States Department of Housing and Urban Development (HUD), and the State of Missouri defines lead-based paint as any paint that contains 1.0 milligrams per square centimeter (mg/cm<sup>2</sup>) or greater of lead.

Based on the XRF results, the following components were found to be painted with lead-based paint:

- Food Prep Area North Wall Windowsill | Concrete – Grey paint
- A205 West Wall Windowsill | Concrete – Tan paint
- A205 North Wall Windowsill | Concrete – Tan paint
- 2<sup>nd</sup> Floor Corridor West Wall Windowsill | Concrete – Tan Paint
- A207 West Wall Windowsill | Concrete – Tan paint
- Assembly Hall South Wall Windowsill | Concrete – Grey paint

If renovation/renovation activities have a likelihood of disturbing these lead painted components, a State of Missouri-licensed lead abatement contractor may need to be contacted to properly abate the lead-based paint prior to renovations. This limited sampling scope of work is not intended to meet the strict requirements of the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), the U.S. Department of Housing and Urban Development (HUD), or State regulatory requirements, except for licensing (if applicable).



If additional materials are discovered during remediation/renovation activities that were not addressed in this report, they should be considered as asbestos-containing and/or lead-based paint until tested/sampled and verified.

Thank you for the opportunity to be of service to you. If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully submitted,  
**PROFESSIONAL SERVICE INDUSTRIES, INC.**

Meredith Teakert  
IH/Environmental Services

Matthew Basch  
MDNR Asbestos Inspector  
Cert. No.: 7136081522MOIR12911  
MDNR Lead Inspector  
Lic. No: 220330-300006255

Greg Chambliss, RPIH, LEED AP  
Department Manager

Attachments:      Report of Bulk Sample Analysis for Asbestos & Chain-of Custody Form  
                          Inspector and Laboratory Certificates  
                          XRF Data Table  
                          Photographs



# EMSL Analytical, Inc.

100 Green Park Industrial Court Saint Louis, MO 63123

Tel/Fax: (314) 577-0150 / (314) 776-3313

<http://www.EMSL.com> / [saintlouislab@emsl.com](mailto:saintlouislab@emsl.com)

EMSL Order: 392308013

Customer ID: PSI54

Customer PO: 0029-5966

Project ID:

**Attention:** Greg Chambliss  
PSI - Professional Service Industries  
11826 Borman Drive  
Saint Louis, MO 63146

**Phone:** (314) 565-1555

**Fax:** (314) 432-5119

**Received Date:** 07/28/2023 8:00 AM

**Analysis Date:** 07/28/2023

**Collected Date:**

**Project:** 0029-5966 Etegra - Nat'l Guard Readiness Cntr

## 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

| Sample   | Description | Appearance                              | Non-Asbestos                              |                          | Asbestos      |
|--|-------------|---|---|--------------------------|---------------|
|  |             |   | % Fibrous                                 | % Non-Fibrous            | % Type        |
| NGB-FT-A-01-Floor Tile<br><small>392308013-0001</small>        |             | Various<br>Non-Fibrous<br>Homogeneous   |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-A-01-Adhesive<br><small>392308013-0001A</small>         |             | Black<br>Non-Fibrous<br>Homogeneous     |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-A-02-Floor Tile<br><small>392308013-0002</small>        |             | Various<br>Non-Fibrous<br>Homogeneous   |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-A-02-Adhesive<br><small>392308013-0002A</small>         |             | Black<br>Non-Fibrous<br>Homogeneous     |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-A-03-Floor Tile<br><small>392308013-0003</small>        |             | Various<br>Non-Fibrous<br>Homogeneous   |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-A-03-Adhesive<br><small>392308013-0003A</small>         |             | Black<br>Non-Fibrous<br>Homogeneous     |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-B-01-Floor Tile<br><small>392308013-0004</small>        |             | Various<br>Non-Fibrous<br>Homogeneous   |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-B-01-Adhesive<br><small>392308013-0004A</small>         |             | Tan<br>Non-Fibrous<br>Homogeneous       |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-B-02-Floor Tile<br><small>392308013-0005</small>        |             | Blue<br>Non-Fibrous<br>Homogeneous      |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-B-02-Adhesive<br><small>392308013-0005A</small>         |             | Tan<br>Non-Fibrous<br>Homogeneous       |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-B-03-Floor Tile<br><small>392308013-0006</small>        |             | Various<br>Non-Fibrous<br>Homogeneous   |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FT-B-03-Adhesive<br><small>392308013-0006A</small>         |             | Tan<br>Non-Fibrous<br>Homogeneous       |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FS-C-01-Sheet<br>Flooring<br><small>392308013-0007</small> |             | Various<br>Non-Fibrous<br>Heterogeneous | 18% Cellulose<br>8% Synthetic<br>8% Glass | 66% Non-fibrous (Other)  | None Detected |
| NGB-FS-C-01-Adhesive<br><small>392308013-0007A</small>         |             | Tan<br>Non-Fibrous<br>Homogeneous       |   | 100% Non-fibrous (Other) | None Detected |
| NGB-FS-C-02-Sheet<br>Flooring<br><small>392308013-0008</small> |             | Various<br>Non-Fibrous<br>Heterogeneous | 19% Cellulose<br>9% Synthetic<br>9% Glass | 63% Non-fibrous (Other)  | None Detected |

Initial report from: 07/28/2023 16:16:15





# EMSL Analytical, Inc.

100 Green Park Industrial Court Saint Louis, MO 63123

Tel/Fax: (314) 577-0150 / (314) 776-3313

<http://www.EMSL.com> / [saintlouislab@emsl.com](mailto:saintlouislab@emsl.com)

**EMSL Order:** 392308013  
**Customer ID:** PSI54  
**Customer PO:** 0029-5966  
**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

| Sample                        | Description | Appearance                              | Non-Asbestos                              |                          | Asbestos      |
|-------------------------------|-------------|---|---|--------------------------|---------------|
|                               |             |   | % Fibrous                                 | % Non-Fibrous            | % Type        |
| NGB-FS-C-02-Adhesive          |             | Tan<br>Non-Fibrous<br>Homogeneous       |   | 100% Non-fibrous (Other) | None Detected |
| <i>392308013-0008A</i>        |             |   |   |                          |               |
| NGB-FS-C-03-Sheet<br>Flooring |             | Various<br>Non-Fibrous<br>Heterogeneous | 17% Cellulose<br>5% Synthetic<br>8% Glass | 70% Non-fibrous (Other)  | None Detected |
| <i>392308013-0009</i>         |             |   |   |                          |               |
| NGB-FS-C-03-Adhesive          |             | Tan<br>Non-Fibrous<br>Homogeneous       |   | 100% Non-fibrous (Other) | None Detected |
| <i>392308013-0009A</i>        |             |   |   |                          |               |

Analyst(s) \_\_\_\_\_

Clayton Summers (6)

Sue Ferrario (12)

Jeff Siria, 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. Saint Louis, MO NVLAP Lab Code 200742-0

Initial report from: 07/28/2023 16:16:15

# CHAIN OF CUSTODY RECORD

392308013



**REPORT TO:**  
 PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI)  
 ADDRESS:  
 11826 Borman Drive  
 CITY/STATE/ZIP  
 St. Louis, Missouri 63146

**PROJECT MANAGER:**  
 Greg Chambliss  
 ADDRESS:  
 11826 Borman Drive  
 Sikeston, Missouri 65301

**TURNAROUND TIME**  
 (MM/DD/YY) 24-Hour  
 CITY/STATE/ZIP  
 St. Louis, Missouri 63146  
 TELEPHONE: 314-432-8073  
 FAX: 314-432-5119

**REPORT DATA VIA:**  VERBAL  E-MAIL

LABORATORY SUBMITTED TO:  
 EMSL  
 100 GREEN PARK INDUSTRIAL COURT  
 ST. LOUIS, MO 63123

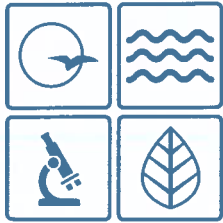
314-577-0150

| PROJECT NUMBER:       | REPORT TO:                                  | PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI) ADDRESS:        | PROJECT MANAGER:   | TURNAROUND TIME | CITY/STATE/ZIP            | TELEPHONE:   | FAX:         | REPORT DATA VIA:                |  | ACCEPTED BY AND DATE/TIME                        | LABORATORY USE ONLY           |                      | LABORATORY USE ONLY |                 | LABORATORY USE ONLY |             |                   |                |            |        |                    |                        |
|-----------------------|---|---|--|-----------------|---------------------------|--------------|--------------|---------------------------------|--|--|-------------------------------|----------------------|---------------------|-----------------|---------------------|-------------|-------------------|----------------|------------|--------|--------------------|------------------------|
|                       |   |   |  |                 |                           |              |              | <input type="checkbox"/> VERBAL | <input checked="" type="checkbox"/> E-MAIL |  | RELINQUISHED BY AND DATE/TIME | ANALYTICAL DUE DATE: | REPORT DUE DATE:    | PROJECT NAME:   | BATCH NUMBER:       |             |                   |                |            |        |                    |                        |
| 0029-5966             | PROFESSIONAL SERVICE INDUSTRIES, INC. (PSI) | ADDRESS:<br>11826 Borman Drive<br>St. Louis, Missouri 63146 | Greg Chambliss<br>ADDRESS:<br>11826 Borman Drive<br>Sikeston, Missouri 65301 | 24-Hour         | St. Louis, Missouri 63146 | 314-432-8073 | 314-432-5119 | <input type="checkbox"/> VERBAL | <input checked="" type="checkbox"/> E-MAIL | 7/27/23<br><i>Greg Chambliss</i><br>7:38-23 8:00 | FIELD SERVICES (Y / N) \$     | SHIPPING (Y / N) \$  | PARAMETER LIST      | # OF CONTAINERS | PLM - ASBESTOS      | TEM - AHERA | LBP - % by Weight | MOLD - Surface | MOLD - Air | Volume | SAMPLE INFORMATION | COMMENTS               |
| NGB-F1-A - 01, 02, 03 |   |   |  |                 |                           |              |              |                                 |  | 7/27/23  |                               |                      | 3                   | 3               | ✓                   |             |                   |                |            |        | Floor Tile         | Stop at First Positive |
| NGB-F1-B - 01, 02, 03 |   |   |  |                 |                           |              |              |                                 |  | ↓  |                               |                      | 3                   | 3               | ✓                   |             |                   |                |            |        | Floor Tile         |                        |
| NGB-F1-C - 01, 02, 03 |   |   |  |                 |                           |              |              |                                 |  | ↓  |                               |                      | 3                   | 3               | ✓                   |             |                   |                |            |        | Floor Sheeting     |                        |
|                       |   |   |  |                 |                           |              |              |                                 |  |  |                               |                      |                     |                 |                     |             |                   |                |            |        |                    |                        |
|                       |   |   |  |                 |                           |              |              |                                 |  |  |                               |                      |                     |                 |                     |             |                   |                |            |        |                    |                        |
|                       |   |   |  |                 |                           |              |              |                                 |  |  |                               |                      |                     |                 |                     |             |                   |                |            |        |                    |                        |
|                       |   |   |  |                 |                           |              |              |                                 |  |  |                               |                      |                     |                 |                     |             |                   |                |            |        |                    |                        |
|                       |   |   |  |                 |                           |              |              |                                 |  |  |                               |                      |                     |                 |                     |             |                   |                |            |        |                    |                        |
|                       |   |   |  |                 |                           |              |              |                                 |  |  |                               |                      |                     |                 |                     |             |                   |                |            |        |                    |                        |
|                       |   |   |  |                 |                           |              |              |                                 |  |  |                               |                      |                     |                 |                     |             |                   |                |            |        |                    |                        |
|                       |   |   |  |                 |                           |              |              |                                 |  |  |                               |                      |                     |                 |                     |             |                   |                |            |        |                    |                        |

ADDITIONAL REMARKS:

\*e-MAIL ADDRESS: greg.chambliss@intertek.com / kevin.roberts@intertek.com

SAMPLER'S SIGNATURE: *Matthew Baker*



**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES

Michael L. Parson  
Governor

Dru Buntin

August 17, 2022

Matthew E Basch  
11826 Borman Dr  
St Louis, MO 63146



RE: **Missouri Asbestos Occupation Certification Card**

Enclosed is your certification card for Asbestos Inspector, as issued by the Asbestos Unit of the Missouri Department of Natural Resources' Air Pollution Control Program.

Missouri Certification Number: 7136081522MOIR12911  
Course Training Date: August 15, 2022  
Missouri Certification Approval Date: August 17, 2022  
Missouri Certification Expiration Date: August 17, 2023

**Note:**

- All Missouri-certified asbestos personnel must comply with the following statutes and regulations:
  - Sections 643.225 to 643.250, RSMo;
  - 10 CSR 10-6.241 *Asbestos Projects-Registration, Abatement, Notification, Inspection, Demolition, and Performance Requirements; and*
  - 10 CSR 10-6.250 *Asbestos Projects-Certification, Accreditation and Business Exemption Requirements.*
- To keep your occupation certification up-to-date, you must complete an annual refresher course and submit a renewal application each year.
- In order to be eligible to renew your certification, you must successfully complete a refresher course with a Missouri-accredited training provider within 12 months of the expiration date of your current training certificate. If you exceed this grace period, you will be required to retake a Missouri-accredited initial course in order to be eligible for Missouri certification.

To obtain a copy of the certification renewal application, or review regulations and requirements, please visit our website at <http://dnr.mo.gov/env/apcp/asbestos/index.htm>.

If you have any questions please call the Air Pollution Control Program at 573-751-4817.

**AIR POLLUTION CONTROL PROGRAM**

Director of Air Pollution Control Program





**STATE OF MISSOURI**  
**DEPARTMENT OF HEALTH AND SENIOR SERVICES**

**LEAD OCCUPATION LICENSE REGISTRATION**

Issued to:

**Matthew E. Basch**

The person, firm or corporation whose name appears on this certificate has fulfilled the requirements for licensure as set forth in the Missouri Revised Statutes 701.300-701.338, as long as not suspended or revoked, and is hereby authorized to engage in the activity listed below.

**Lead Inspector**  
Category of License

Issuance Date: **3/30/2022**  
Expiration Date: **3/30/2024**  
License Number: **220330-300006255**



*Paula F. Nickelson*

Paula F. Nickelson  
Acting Director  
Department of Health and Senior Services



United States Department of Commerce  
National Institute of Standards and Technology



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# Certificate of Accreditation to ISO/IEC 17025:2017

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NVLAP LAB CODE: 200742-0

**EMSL Analytical, Inc.**

St. Louis, MO

is accredited by the *National Voluntary Laboratory Accreditation Program* for specific services,  
listed on the Scope of Accreditation, for:

**Asbestos Fiber Analysis**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

---

2023-04-01 through 2024-03-31

*Effective Dates*



A handwritten signature in blue ink, which appears to read 'Peter S. Lamm'.

For the National Voluntary Laboratory Accreditation Program

**SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017**

**EMSL Analytical, Inc.**  
100 Green Park Industrial Court  
St. Louis, MO 63123  
Dr. Jeff Siria Ph.D  
Phone: 314-577-0150 Fax: 314-776-3313  
Email: [jsiria@emsl.com](mailto:jsiria@emsl.com)  
<http://www.emsl.com>

**ASBESTOS FIBER ANALYSIS**

**NVLAP LAB CODE 200742-0**

**Bulk Asbestos Analysis**

**Code**

**Description**

18/A01

EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples

18/A03

EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

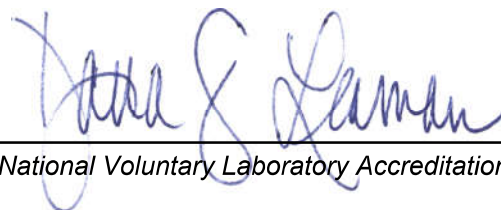
**Airborne Asbestos Analysis**

**Code**

**Description**

18/A02

U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.



*For the National Voluntary Laboratory Accreditation Program*

PSI Project #: 0029-5966

XRF Device #: 2303

Date of Survey: 07/27/23

Building: Etegra - Nat'l Guard Readiness  
Sikeston, Missouri

Type of XRF: Heuresis Pb 200i  
Operator's Name: Matthew Basch

# XRF Testing Data Table

| Shot No. | Interior / Exterior | Room #         | Wall  | Component   | Substrate   | Paint Color | Paint Condition | XRF Reading | Result   |
|----------|---------------------|----------------|-------|-------------|-------------|-------------|-----------------|-------------|----------|
| 1        | Calibration         |                |       |             |             |             |                 |             |          |
| 2        |                     |                |       |             |             |             |                 |             |          |
| 3        |                     |                |       |             |             |             |                 |             |          |
| 4        | Interior            | Orderly Room   | South | Window Sill | Wood        | Grey        | Good            | 0.10        | Negative |
| 5        | Interior            | Orderly Room   | West  | Window Sill | Wood        | Grey        | Good            | 0.00        | Negative |
| 6        | Interior            | NW Entry       | West  | Wall        | Cinderblock | Tan         | Good            | 0.00        | Negative |
| 7        | Interior            | NW Entry       | West  | Wall        | Cinderblock | Tan         | Good            | 0.00        | Negative |
| 8        | Interior            | Food Prep Area | North | Wall        | Cinderblock | Grey        | Good            | 0.00        | Negative |
| 9        | Interior            | Food Prep Area | North | Wall        | Cinderblock | Grey        | Good            | 0.10        | Negative |
| 10       | Interior            | Food Prep Area | North | Wall        | Cinderblock | Tan         | Good            | 0.20        | Negative |
| 11       | Interior            | Food Prep Area | North | Wall        | Cinderblock | Tan         | Good            | 0.10        | Negative |
| 12       | Interior            | Food Prep Area | North | Window Sill | Concrete    | Grey        | Poor            | 7.00        | Positive |
| 13       | Interior            | Food Prep Area | North | Window Sill | Concrete    | Grey        | Poor            | 7.50        | Positive |
| 14       | Interior            | Food Prep Area | North | Window Sill | Concrete    | Tan         | Good            | 0.30        | Negative |
| 15       | Interior            | SE Stairwell   | East  | Wall        | Cinderblock | White       | Good            | 0.00        | Negative |
| 16       | Interior            | Assembly Hall  | East  | Wall        | Cinderblock | Blue/Grey   | Fair            | 0.20        | Negative |
| 17       | Interior            | Assembly Hall  | East  | Wall        | Cinderblock | Blue/Grey   | Fair            | 0.10        | Negative |
| 18       | Interior            | Assembly Hall  | East  | Wall        | Cinderblock | White       | Fair            | 0.00        | Negative |
| 19       | Interior            | Assembly Hall  | East  | Wall        | Cinderblock | White       | Fair            | 0.10        | Negative |
| 20       | Interior            | SE Stairwell   | North | Wall        | Cinderblock | White       | Good            | 0.10        | Negative |
| 21       | Interior            | SE Stairwell   | South | Wall        | Cinderblock | White       | Good            | 0.00        | Negative |
| 22       | Interior            | A205           | West  | Wall        | Cinderblock | White       | Good            | 0.10        | Negative |

# XRF Testing Data Table

| Shot No. | Interior / Exterior | Room #                    | Wall         | Component          | Substrate       | Paint Color | Paint Condition | XRF Reading | Result          |
|----------|---------------------|---------------------------|--------------|--------------------|-----------------|-------------|-----------------|-------------|-----------------|
| 23       | Interior            | A205                      | North        | Wall               | Cinderblock     | White       | Good            | 0.00        | Negative        |
| 24       | <b>Interior</b>     | <b>A205</b>               | <b>West</b>  | <b>Window Sill</b> | <b>Concrete</b> | <b>Tan</b>  | <b>Poor</b>     | <b>3.20</b> | <b>Positive</b> |
| 25       | <b>Interior</b>     | <b>A205</b>               | <b>West</b>  | <b>Window Sill</b> | <b>Concrete</b> | <b>Tan</b>  | <b>Poor</b>     | <b>3.60</b> | <b>Positive</b> |
| 26       | <b>Interior</b>     | <b>A205</b>               | <b>North</b> | <b>Window Sill</b> | <b>Concrete</b> | <b>Tan</b>  | <b>Poor</b>     | <b>3.20</b> | <b>Positive</b> |
| 27       | <b>Interior</b>     | <b>2nd Floor Corridor</b> | <b>West</b>  | <b>Window Sill</b> | <b>Concrete</b> | <b>Tan</b>  | <b>Fair</b>     | <b>2.80</b> | <b>Positive</b> |
| 28       | Interior            | A207                      | West         | Wall               | Cinderblock     | White       | Good            | 0.00        | Negative        |
| 29       | Interior            | A207                      | West         | Wall               | Cinderblock     | White       | Good            | 0.00        | Negative        |
| 30       | <b>Interior</b>     | <b>A207</b>               | <b>West</b>  | <b>Window Sill</b> | <b>Concrete</b> | <b>Tan</b>  | <b>Poor</b>     | <b>8.70</b> | <b>Positive</b> |
| 31       | Interior            | A207                      | West         | Window Sill        | Concrete        | Tan         | Poor            | 0.70        | Negative        |
| 32       | Interior            | A209                      | South        | Window Sill        | Drywall         | White       | Good            | 0.10        | Negative        |
| 33       | Interior            | A209                      | West         | Window Sill        | Drywall         | White       | Good            | 0.20        | Negative        |
| 34       | <b>Interior</b>     | <b>Assembly Hall</b>      | <b>South</b> | <b>Window Sill</b> | <b>Concrete</b> | <b>Grey</b> | <b>Fair</b>     | <b>7.90</b> | <b>Positive</b> |
| 35       | <b>Interior</b>     | <b>Assembly Hall</b>      | <b>South</b> | <b>Window Sill</b> | <b>Concrete</b> | <b>Grey</b> | <b>Fair</b>     | <b>4.20</b> | <b>Positive</b> |
| 36       | Calibration         |                           |              |                    |                 |             |                 |             |                 |
| 37       |                     |                           |              |                    |                 |             |                 |             |                 |
| 38       |                     |                           |              |                    |                 |             |                 |             |                 |



PHOTO 1



General location of 12"x 12" blue floor tile (non-ACM).

PHOTO 2



View of non-ACM 12"x 12" floor tile with non-ACM mastic.

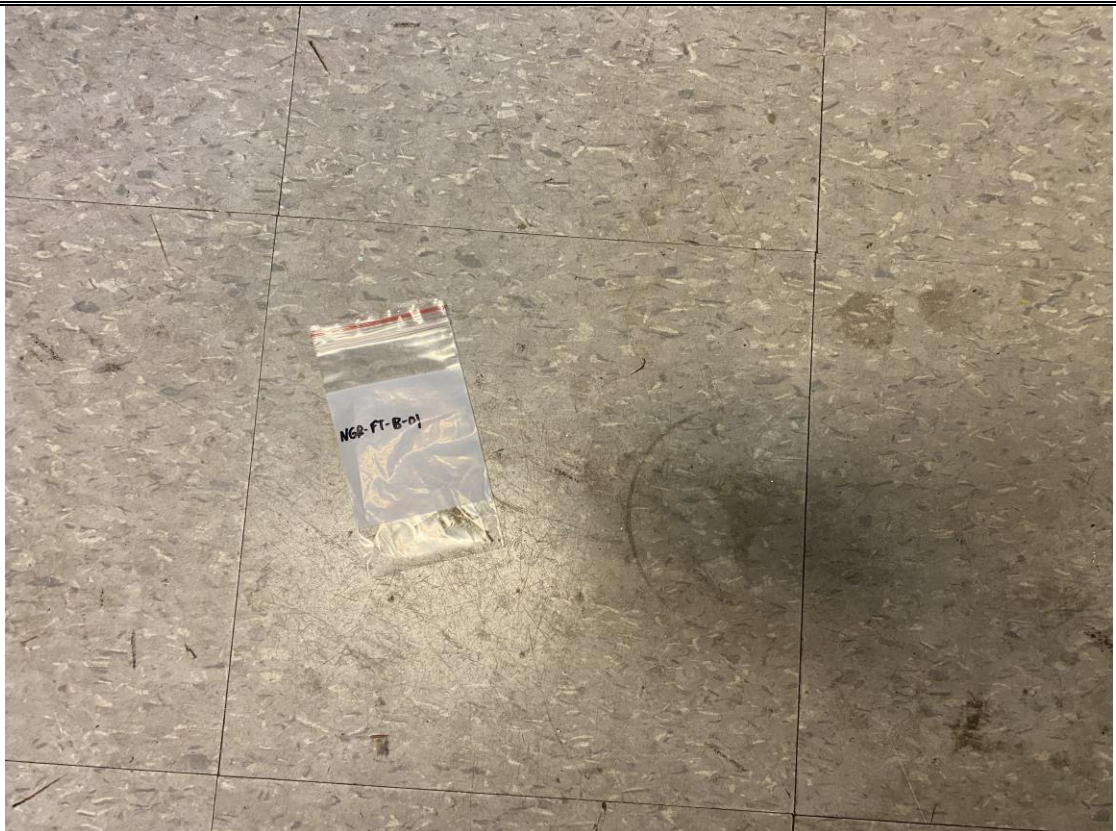


PHOTO 3



General location of 12"x 12" gray floor tile (non-ACM).

PHOTO 4



View of non-ACM 12"x 12" floor tile with non-ACM mastic.



PHOTO 5



View of floor sheeting under carpet (non-ACM).

PHOTO 6



View of non-ACM floor sheeting, pebble pattern.



PHOTO 7



View of windowsill with LBP.

PHOTO 8



View of windowsill with LBP.

# Limited Asbestos Survey



**GEOTECHNOLOGY**  
**INC**  
FROM THE GROUND UP

**LIMITED ASBESTOS SURVEY  
SIKESTON READINESS CENTER  
300 SOUTH MAIN STREET  
SIKESTON, MISSOURI**

Prepared for:  
**ETEGRA  
OLIVETTE, MISSOURI**

Prepared by:  
**GEOTECHNOLOGY, INC.  
ST. LOUIS, MISSOURI**

Date:  
**NOVEMBER 9, 2020**

Geotechnology Project No.:  
**J037236.01**

**SAFETY  
QUALITY  
INTEGRITY  
PARTNERSHIP  
OPPORTUNITY  
RESPONSIVENESS**



---

November 9, 2020

Mr. Boston Fodor, R.G., PMP  
Project Manager  
Etegra  
1121 Olivette Executive Parkway, Suite 100  
Olivette, Missouri 63132

Re: Limited Asbestos Survey  
Roof Repair/Replacement  
Sikeston Readiness Center  
300 South Main Street  
Sikeston, Missouri  
Project No. T20XX-01  
Geotechnology Project No. J037236.01

Dear Mr. Fodor:

In accordance with our proposal P037236.01, dated July 24, 2020, Geotechnology, Inc. (Geotechnology) is pleased to provide this limited asbestos survey report for the referenced project. Our scope of services included a limited site survey and material sampling of suspect asbestos containing materials (ACM), laboratory analysis of samples, and a letter report.

#### **SITE AND PROJECT DESCRIPTION**

The subject property consists of the approximately 17,250-square-foot existing Readiness Center located southeast of the intersection of Matthews Avenue and South Main Street in Sikeston, Missouri. The asbestos survey was limited to the exterior roof to identify building materials or components that may require abatement prior to replacement activities.

#### **ASBESTOS SURVEY**

In general conformance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) and the Missouri Department of Natural Resources (MDNR) requirements, the survey was conducted on October 30, 2020, by Mr. Brad Lohrum, a Missouri-licensed asbestos inspector. Copies of Mr. Lohrum's training certificate and asbestos inspector license are included in Appendix A.

Samples were collected in general conformance with the NESHAP and MDNR requirements. The identified suspect ACM were subdivided into homogeneous areas (an area of surfacing material, thermal system insulation material or miscellaneous material that is uniform in color



and texture). Samples were collected from each identified homogeneous area, consistent with industry practice.

Using standard chain-of-custody procedures, the suspect ACM samples were submitted to EMSL Analytical of St. Louis, Missouri, a National Voluntary Laboratory Accreditation Program (NVLAP)-accredited laboratory, for identification by Polarized Light Microscopy (PLM) coupled with dispersion staining, according to the test method, “Method for Determination of Asbestos in Bulk Building Materials” (EPA/600/R-93/116). Separable layered samples were analyzed by layer. A copy of the asbestos survey summary is included in Appendix B.

## RESULTS

Laboratory analyses of the submitted samples detected the presence of asbestos greater than one percent in the following materials in the building.

**TABLE 1  
ASBESTOS-CONTAINING MATERIALS SUMMARY**

| <b>300 South Main Street</b>                               | <b>Estimated Quantity</b> |
|--|---------------------------|
| Upper (Main) Roof – Flat Roofing (Bottom Asphaltic Layer)  | 20,550 SF                 |
| Black Flashing Caulk                                       | 20 LF                     |
| Lower (North) Roof – Flat Roofing (Bottom Asphaltic Layer) | 1,700 SF                  |

SF = Square Feet    LF = Linear Feet

Geotechnology will not be able to represent that the site contains no asbestos beyond that detected or observed by Geotechnology during the survey. Furthermore, the quantities listed in the asbestos survey summary sheets in Appendix B should be considered approximate only. For bidding purposes, we strongly recommend that contractors prepare abatement bids only after conducting site reconnaissance. Copies of the asbestos laboratory analytical results are included in Appendix C. An aerial photograph depicting approximate asbestos locations is included as Figure 1.

## RECOMMENDATIONS

Our recommendations are summarized below:

- The exterior flat roofing was observed to be comprised of a rubber membrane over rigid foam over asphaltic roofing. The identified black flashing caulk was observed to be present at the northeast chimney and at the north central window, as accessed by the north lower roof. The bottom layer of asphaltic roofing and the black flashing caulk appear to be Category I Non-Friable ACM. MDNR does not regulate Category I asphaltic roofing materials, as long as the materials are in good condition and are not rendered Friable during removal. The use of mechanical devices, such as a rotating blade roof





cutter, will render these materials Friable. The US Environmental Protection Agency (EPA) has determined that use of this type of equipment on more than 5,580 square feet of roofing will make the project subject to regulation. If this equipment is to be used, the roofing materials should be removed by a licensed abatement contractor. Removed asphaltic roofing materials still must be disposed of at a permitted landfill. We recommend contacting your disposal facility to determine how they will require asbestos roofing materials to be packaged and delivered.

- For demolition and renovation projects which require the removal of Friable and/or Category I Non-Friable and/or Category II Non-Friable ACM, NESHAP and MDNR notifications are required.
- Third party clearance sampling and testing may be required.

Geotechnology has generated environmental demolition project specifications and performed third-party monitoring on similar projects and would be pleased to submit a proposal to conduct those services at your request.

\* \* \* \* \*

The following attachments are included in and complete this report:

- Figure 1 - Approximate Asbestos Locations
- Appendix A - Certificate and License of Environmental Professional
- Appendix B - Asbestos Survey Summary
- Appendix C - Asbestos Laboratory Data Sheets
- Appendix D - Limitations of Report

\* \* \* \* \*

We appreciate the opportunity to provide our professional environmental consulting services to Etegra on this project. If you have any questions or comments, please contact me at (314) 997-7440.

Very truly yours,

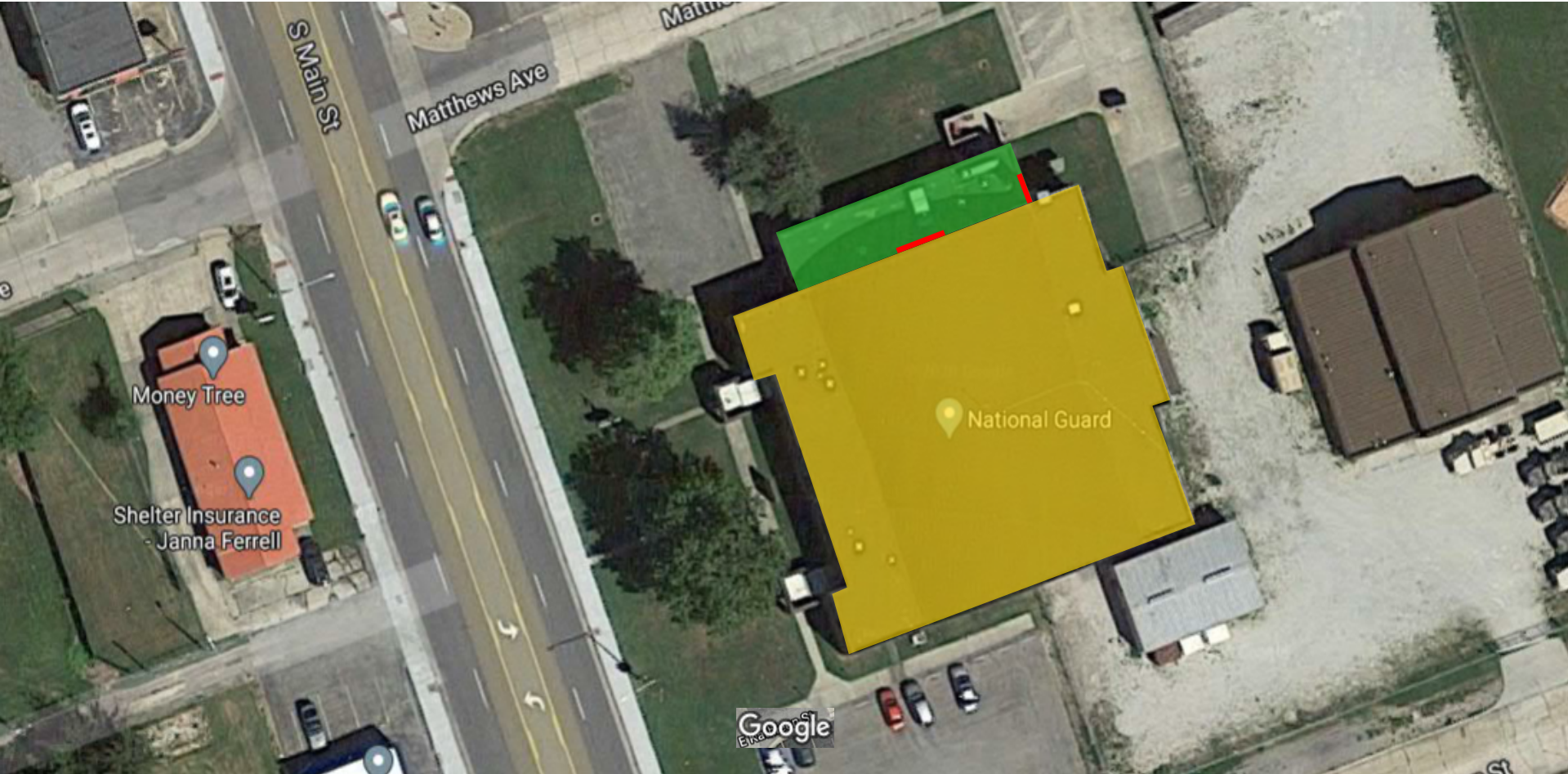
**GEOTECHNOLOGY, INC.**

A handwritten signature in blue ink that reads "Bradley J. Lohrum".

Bradley J. Lohrum  
Senior Scientist

BJL/DTK:bjl/jsj

Figure 1 - Approximate Asbestos Locations



Imagery ©2020 Google, Imagery ©2020 Maxar Technologies, Map data ©2020 50 ft

- #1 - Upper Flat Roofing (Bottom Layer)
- #2 - Flashing Caulk
- #3 - Lower Flat Roofing (Bottom Layer)



**APPENDIX A**

**CERTIFICATE AND LICENSE OF ENVIRONMENTAL PROFESSIONAL**



2539 Vandalia Street, Collinsville, IL 62234 \* Phone: 618-855-8764

Environmental and Occupational Safety & Health Training

*Does hereby certify*

**Bradley Lohrum**

11816 Lackland Road Suite 150, St. Louis, MO 63146

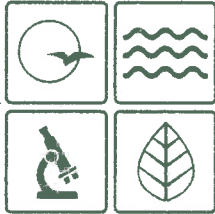
*Has successfully completed and passed the course examination with at least  
70% for re-accreditation under AHERA (Title II)*

**Asbestos Building Inspector Refresher**

**Class Date:** 01/03/2020  
**Examination Date:** 01/03/2020  
**STC Certificate Number:** STC-20200103-002633ABIR  
**Certification Expiration:** 01/03/2021

David M. Mendoza – President/Training Director  
Certified Environmental Specialist  
OSHA Authorized Instructor





Missouri Department of dnr.mo.gov  
**NATURAL RESOURCES**

Michael L. Parson, Governor

Carol S. Comer, Director

January 16, 2020

Bradley J Lohrum  
817 S Sappington Rd  
Crestwood, MO 63126

CERTIFICATION NUMBER:  
**7118010320MOIR15873**

THIS CERTIFIES  
**Bradley J Lohrum**  
HAS COMPLETED THE CERTIFICATION  
REQUIREMENTS FOR  
**Inspector**



APPROVED: **01/17/2020**  
EXPIRES: **01/17/2021**

TRAINING DATE: **01/03/2020**

  
Director of Air Pollution Control Program

**RE: Missouri Asbestos Occupation Certification Card**

Enclosed is your certification card for Asbestos Inspector, as issued by the Asbestos Unit of the Missouri Department of Natural Resources' Air Pollution Control Program.

Missouri Certification Number: 7118010320MOIR15873  
Course Training Date: January 03, 2020  
Missouri Certification Approval Date: January 17, 2020  
Missouri Certification Expiration Date: January 17, 2021

**Note:**

- All Missouri-certified asbestos personnel must comply with the following statutes and regulations:
  - Sections 643.225 to 643.250, RSMo;
  - 10 CSR 10-6.241 *Asbestos Projects-Registration, Abatement, Notification, Inspection, Demolition, and Performance Requirements; and*
  - 10 CSR 10-6.250 *Asbestos Projects-Certification, Accreditation and Business Exemption Requirements.*
- To keep your occupation certification up-to-date, you must complete an annual refresher course and submit a renewal application each year.
- In order to be eligible to renew your certification, you must successfully complete a refresher course with a Missouri-accredited training provider within 12 months of the expiration date of your current training certificate. If you exceed this grace period, you will be required to retake a Missouri-accredited initial course in order to be eligible for Missouri certification.

To obtain a copy of the certification renewal application, or review regulations and requirements, please visit our website at <http://dnr.mo.gov/env/apcp/asbestos/index.htm>.

If you have any questions please call the Air Pollution Control Program at 573-751-4817.

**AIR POLLUTION CONTROL PROGRAM**



Director of Air Pollution Control Program



**APPENDIX B**  
**ASBESTOS SURVEY SUMMARY**

# ASBESTOS SURVEY SUMMARY

Inspection Date: October 30, 2020  
 Inspector: Brad Lohrum  
 Site Address: 300 South Main Street  
Sikeston, Missouri

Geotechnology, Inc. Project No.: J037236.01  
 Project Name: Sikeston Readiness Center  
 Type of Structure: Single-Story Brick Building

| Homogeneous Area Number/Location | Material Description        | Quantity/Condition <sup>1</sup> | Sample I.D. | Location of Sampled Material/Substrate | Friability Category | Asbestos |    |
|----------------------------------|-----------------------------|---------------------------------|-------------|--|---------------------|----------|----|
|                                  |                             |                                 |             |  |                     | Type     | %  |
| #1 / Exterior Upper (Main) Roof  | Flat Roofing (Bottom Layer) | 20,550 SF                       | 1A          | Upper Roof - West / Wood               | NF I                | CH       | 46 |
|                                  |                             |                                 | 1B          | Upper Roof - West / Wood               | NF I                | NA       |    |
|                                  |                             |                                 | 1C          | Upper Roof - West / Wood               | NF I                | NA       |    |
| #2 / Exterior Roof               | Roofing Tar                 | NQ                              | 2A          | Roof Penetration / Rubber              | NF I                | ND       |    |
|                                  |                             |                                 | 2B          | Roof Patch / Rubber                    | NF I                | ND       |    |
|                                  |                             |                                 | 2C          | Upper Roof Flashing / Metal            | NF I                | ND       |    |
| #3 / Exterior Lower (North) Roof | Black Flashing Caulk        | 20 LF                           | 3A          | Northeast Chimney / Brick              | NF I                | CH       | 16 |
|                                  |                             |                                 | 3B          | Northeast Chimney / Brick              | NF I                | NA       |    |
|                                  |                             |                                 | 3C          | Lower Roof Center Window / Brick       | NF I                | NA       |    |
| #4 / Exterior Lower (North) Roof | Flat Roofing (Bottom Layer) | 1,700 SF                        | 4A          | Lower Roof / Wood                      | NF I                | CH       | 47 |
|                                  |                             |                                 | 4B          | Lower Roof / Wood                      | NF I                | NA       |    |
|                                  |                             |                                 | 4C          | Lower Roof / Wood                      | NF I                | NA       |    |

Highlighted items were found to contain asbestos.

LF=Linear Feet

NF=Non-Friable

CH=Chrysotile

PACM=Presumed Asbestos Containing Material

ND=Non-Detect

SF=Square Feet

F = Friable

AM=Amosite

PTC=Point Count

NA=Not Analyzed per stop 1st positive

1 = Note If Poor Condition (P)

NQ=Not Quantified



**APPENDIX C**  
**ASBESTOS LABORATORY DATA SHEETS**





# EMSL Analytical, Inc.

100 Green Park Industrial Court Saint Louis, MO 63123

Tel/Fax: (314) 577-0150 / (314) 776-3313

<http://www.EMSL.com> / [saintlouislabs@emsl.com](mailto:saintlouislabs@emsl.com)

EMSL Order: 392010188

Customer ID: GEOT56

Customer PO:

Project ID:

**Attention:** Brad Lohrum  
Geotechnology, Inc.  
11816 Lackland Road  
Suite 150  
Saint Louis, MO 63146

**Project:** J037236.01

**Phone:** (314) 625-9818

**Fax:** (314) 997-2067

**Received Date:** 10/30/2020 12:40 PM

**Analysis Date:** 11/04/2020 - 11/05/2020

**Collected Date:**

## Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

| Sample                                       | Description | Appearance                            | Non-Asbestos |                          | Asbestos                     |
|--|-------------|---------------------------------------|--------------|--------------------------|------------------------------|
|  |             |                                       | % Fibrous    | % Non-Fibrous            | % Type                       |
| 1A-Felt<br><small>392010188-0001</small>     |             | Brown<br>Fibrous<br>Homogeneous       | 6% Cellulose | 48% Non-fibrous (Other)  | 46% Chrysotile               |
| 1A-Roofing<br><small>392010188-0001A</small> |             | Black<br>Non-Fibrous<br>Homogeneous   |              | 100% Non-fibrous (Other) | None Detected                |
| 1B<br><small>392010188-0002</small>          |             |                                       |              |                          | Positive Stop (Not Analyzed) |
| 1C<br><small>392010188-0003</small>          |             |                                       |              |                          | Positive Stop (Not Analyzed) |
| 2A<br><small>392010188-0004</small>          |             | Gray<br>Non-Fibrous<br>Homogeneous    |              | 100% Non-fibrous (Other) | None Detected                |
| 2B<br><small>392010188-0005</small>          |             | Black<br>Non-Fibrous<br>Homogeneous   |              | 100% Non-fibrous (Other) | None Detected                |
| 2C<br><small>392010188-0006</small>          |             | Black<br>Non-Fibrous<br>Homogeneous   |              | 100% Non-fibrous (Other) | None Detected                |
| 3A<br><small>392010188-0007</small>          |             | Various<br>Non-Fibrous<br>Homogeneous |              | 84% Non-fibrous (Other)  | 16% Chrysotile               |
| 3B<br><small>392010188-0008</small>          |             |                                       |              |                          | Positive Stop (Not Analyzed) |
| 3C<br><small>392010188-0009</small>          |             |                                       |              |                          | Positive Stop (Not Analyzed) |
| 4A-Felt<br><small>392010188-0010</small>     |             | Brown<br>Fibrous<br>Homogeneous       | 7% Cellulose | 46% Non-fibrous (Other)  | 47% Chrysotile               |
| 4A-Roofing<br><small>392010188-0010A</small> |             | Black<br>Non-Fibrous<br>Homogeneous   |              | 100% Non-fibrous (Other) | None Detected                |
| 4B<br><small>392010188-0011</small>          |             |                                       |              |                          | Positive Stop (Not Analyzed) |
| 4C<br><small>392010188-0012</small>          |             |                                       |              |                          | Positive Stop (Not Analyzed) |

Initial report from: 11/05/2020 13:48:56



# EMSL Analytical, Inc.

100 Green Park Industrial Court Saint Louis, MO 63123

Tel/Fax: (314) 577-0150 / (314) 776-3313

<http://www.EMSL.com> / [saintlouislabs@emsl.com](mailto:saintlouislabs@emsl.com)

EMSL Order: 392010188

Customer ID: GEOT56

Customer PO:

Project ID:

Analyst(s)

Donald Schmidt (1)

Sue Ferrario (7)

Jeff Siria, 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. Saint Louis, MO NVLAP Lab Code 200742-0

Initial report from: 11/05/2020 13:48:56



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

**Asbestos Chain of Custody**  
**EMSL Order Number (lab use only):**

392010188

EMSL ANALYTICAL, INC.  
100 GREEN PARK INDUSTRIAL CT  
ST. LOUIS, MO 63123  
PHONE: (314) 577-0150  
FAX: (314) 776-3313

|   |  |   |  |
|---|--|---|--|
| Company Name: <u>Geotechnology, Inc</u>   |  | EMSL Customer ID: <u>GEO TSB</u>  |  |
| Street:   |  | City:   | State or Province:   |
| Zip/Postal Code:  |  | Country:  | Telephone #:   |
| Report To (Name): <u>Brad Lohrum</u>  |  | Fax #:  |  |
| email Address: <u>blohrum@geotechnology.com</u>   |  | Please Provide Results via: <input type="checkbox"/> Fax <input type="checkbox"/> Email             |  |
| Client Project ID: <u>1037236-01</u>  |  | Purchase Order Number:  |  |
| State or Province Collected: <u>MO</u>  |  | EMSL Project ID (internal use only):  |  |
| EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If bill to is different note instructions in comment. Third party billing requires written authorization from third party   |  | CT only <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt |  |
| <b>Turnaround Time (TAT) Options Please Check</b>   |  |   |  |
| <input type="checkbox"/> 3 Hr <sup>1</sup>  | <input type="checkbox"/> 4-4.5Hr <sup>1</sup> <small>ASHERA Only</small> | <input type="checkbox"/> 6 Hr <sup>1</sup>  | <input type="checkbox"/> 24 Hr   |
| <input type="checkbox"/> 32 Hr <sup>2</sup>   | <input type="checkbox"/> 48 Hr   | <input type="checkbox"/> 72 Hr  | <input type="checkbox"/> 96 Hr   |
|   |  |   | <input checked="" type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week |
| <small><sup>1</sup>Premium Service Charge applies for 3 Hour TEM ASHERA or EPA Level II TAT - you will be asked to sign an authorization form. TEM Air 3-6 Hour, please call ahead to schedule<br/><sup>2</sup> 32 Hour TAT available for select tests only; samples must be submitted by 11:30 am.</small> |  |   |  |
| <b>PCM - Air</b>  |  | <b>TEM - Air<sup>1</sup></b>  |  |
| <input type="checkbox"/> NIOSH 7400   |  | <input type="checkbox"/> ASHERA 40 CFR, Part 763  |  |
| <input type="checkbox"/> w/ OSHA 8hr. TWA   |  | <input type="checkbox"/> NIOSH 7402   |  |
| <b>PLM - Bulk (reporting limit)</b>   |  | <input type="checkbox"/> EPA Level II   |  |
| <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%)  |  | <input type="checkbox"/> ISO 10312  |  |
| <input type="checkbox"/> PLM EPA NOB (<1%)  |  | <b>TEM - Bulk</b>   |  |
| <b>Point Count</b>  |  | <input type="checkbox"/> TEM EPA NOB  |  |
| <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)   |  | <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY)   |  |
| <b>Point Count w/Gravimetric</b>  |  | <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <sup>*</sup>                |  |
| <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%)   |  | <b>TEM - Water: EPA 100.2</b>   |  |
| <input type="checkbox"/> NYS 198.1 (friable - NY)   |  | Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking                       |  |
| <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY)   |  | All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking                    |  |
| <input type="checkbox"/> NYS 198.8 SOF-V  |  |   |  |
| <input type="checkbox"/> NIOSH 9002 (<1%)   |  |   |  |
| <b>TEM - Settled Dust</b>   |  |   |  |
| <input type="checkbox"/> Microvac - ASTM D 5755   |  |   |  |
| <input type="checkbox"/> Wipe - ASTM D6480  |  |   |  |
| <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)   |  |   |  |
| <b>Soil - Rock - Vermiculite (reporting limit)</b>  |  |   |  |
| <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%)  |  |   |  |
| <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <sup>*</sup>  |  |   |  |
| <input type="checkbox"/> TEM Qualitative via Filtration Prep  |  |   |  |
| <input type="checkbox"/> TEM Qualitative via Drop Mount Prep  |  |   |  |
| <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM   |  |   |  |
|   |  | <small>*Lower reporting limits available on request</small>   |  |
| <b>Other test (please specify):</b>   |  |   |  |
|   |  |   |  |
| <input checked="" type="checkbox"/> Stop At First Positive (clearly identify homogenous areas below)  |  | Filter Pore Size (Air Samples): <input type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm      |  |
| Sampler's Name: <u>Brad Lohrum</u>  |  | Sampler's Signature: <u>Bradley Lohrum</u>  |  |
| <b>Sample #</b>   | <b>Sample Description/Location</b>                                       | <b>Volume, Area or Homogenous Area</b>  | <b>Date/Time Sampled</b>   |
| <u>1 ABC</u>  | <u>Flat Roofing - Upper Roof</u>   |   | <u>10/30/2020</u>  |
| <u>2 ABC</u>  | <u>Roofing Tar</u>   |   | <u>1</u>   |
| <u>3 ABC</u>  | <u>Flashing Caulk</u>  |   |  |
| <u>4 ABC</u>  | <u>Flat Roofing - Lower Roof</u>   |   |  |
|   |  |   |  |
| Client Sample # (s): <u>1A - 4C</u>   |  | Total # of Samples: <u>12</u>   |  |
| Relinquished by (Client): <u>Bradley Lohrum</u> Date: <u>10/30/2020</u>   |  | Time: <u>12:40</u>  |  |
| Received by (Lab): <u>Debby Eaton</u> Date: <u>10-30-20</u>   |  | Time: <u>12:40 a.m.</u>   |  |
| Comments/Special Instructions:  |  |   |  |



**APPENDIX D**  
**LIMITATIONS OF REPORT**

**ASBESTOS SURVEY**  
**LIMITATIONS OF REPORT**

1. This report has been prepared on behalf of and for the exclusive use of the addressee, solely for use as an asbestos survey of the site. If this report is provided to contractors, Client should make it clear that information is provided for data purposes only and not as a warranty of the asbestos conditions at the site. Unless other contractual agreements were made, the services described in this report were carried out in accordance with the Terms for Geotechnology's Services that accompanied the proposal.
2. The surveys were performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and Geotechnology endeavored to conduct the services identified herein in a manner consistent with that level of care and skill ordinarily exercised by other consultants under similar circumstances and conditions. The findings and conclusions stated herein must be considered not as scientific certainties, but rather as professional opinions concerning the significance of the limited data gathered during the course of the survey. Specifically, Geotechnology does not and cannot represent that the site contains no asbestos beyond that observed by Geotechnology during its survey.
3. The observations described in this Report were made under the conditions stated therein. The conclusions presented in the Report were based solely upon the services described therein, and not on scientific tasks or procedure beyond the scope of described services or the time and budgetary constraints imposed by Client. Furthermore, such conclusions are based solely on site condition, and rules and regulations, which were in effect at the time of the study.
4. In the event that information is developed relative to asbestos issues at the site and not contained in this report, such information shall be brought to Geotechnology's attention. Geotechnology will evaluate such information and, on the basis of this evaluation, may modify the conclusions stated in this Report.
5. Observations were made of the site as indicated within the Report. Where access to portions of the site was unavailable or limited, Geotechnology renders no opinion as to the presence of potentially hidden asbestos in that portion of the site. In addition, Geotechnology renders no opinion as to the presence of potentially hidden asbestos where direct observation of the interior walls, floor, roof, or ceiling of a site was obstructed by objects or coverings on or over these surfaces. These inaccessible and unobserved areas should be further investigated prior to any renovation/demolition activity that may disturb them.

6. Since it is not always possible to acquire a large enough sample of adhesively applied suspect asbestos-containing material to adequately analyze the underlying mastic without seriously defacing the surface, prior to renovation/demolition in those indeterminate areas additional sampling should be accomplished.
7. Except as noted within the text of the Report, no quantitative laboratory testing was performed as part of the survey. Where such analyses have been conducted by an outside laboratory, Geotechnology has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these data.
8. The purpose of the asbestos survey portion of this Report was to assess the physical characteristics of the subject site with respect to the presence on the building surfaces of asbestos as defined in 40 CFR Parts 761 and 763, and 29 CFR Part 1926. No specific attempt was made to check on the compliance of present or past owners or operators of the site with federal, state, or local laws and regulations, environmental or otherwise.
9. It is recommended that Geotechnology be retained to provide further asbestos consulting services during construction and/or implementation of any remedial measures recommended in this report. This is to allow Geotechnology to observe compliance with the concepts and recommendations contained herein, and to allow the development of design changes in the event that conditions differ from those anticipated.
10. This survey may address the identification requirements of the Communication of Hazards Duties of Building and Facility Owners – as described in OSHA 29 CFR 1296.1101(k) Asbestos (in construction) Standard, Practices and Procedures for removal, prior to demolition and disposal, should be in accordance with referenced regulations, the OSHA Asbestos in Construction Standard, and the EPA Interpretive Rule Governing Roof Removal (40 CFR Part 61, Appendix A to Subpart M).