PROJECT MANUAL

Improvements to Exterior and Replace VCT Flooring

Shady Grove State School

Poplar Bluff, Missouri

Designed By: Dille Pollard Architecture
4061 Highway PP, Suite 2
Poplar Bluff, MO 63901

Date Issued: August 21, 2024

Project No.: E2405-01

STATE *of* MISSOURI

OFFICE *of* ADMINISTRATION
Facilities Management, Design & Construction

SECTION 000107.10 - PROFESSIONAL SEALS AND CERTIFICATIONS – ARCHITECTURAL DOCUMENTS

Project Number: E2405-01 "Improvements to Exterior and Replace VCT Flooring, Shady Grove State School, Poplar Bluff, Missouri"

The Following Design Professional Has Signed and Sealed the Original Plans and Specifications for this project, which are on file with the Division of Facilities Management, Design and Construction:

Project Architect:

KRISTEN RAE UHRHAN, MO A-2009027298

Dille Pollard Architecture
266 South Mount Auburn Road
Cape Girardeau, Missouri 63703

Drawing Sheets:
G-001; G-002, A-101, A-102, A-301, A-401, A-501.

Specifications:
Division 00 Sections 000107.10, 000115 and 002600; Division 01 Sections; Division 02 Sections; Division 3; Division 4; Division 05 Sections; Division 06 Sections; Division 07 Sections; Division 8; Division 09 Sections, Division 10, Division 12, and Division 13 Sections.

END OF SECTION 000107.10

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TECHNICAL SPECIFICATIONS INDEX:

END OF SECTION

SECTION 000115 – LIST OF DRAWINGS

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:

	TITLE	SHEET #	DATE
1.	Title Sheet	Sheet G-001	08/21/2024
2.	Drawing Index, Site Location Plans, Legends, and Abbreviations	Sheet G-002	08/21/2024
3.	Enlarged Floor Plan – West Section	Sheet A-101	08/21/2024
4.	Enlarged Floor Plan – East Section	Sheet A-102	08/21/2024
5.	Exterior Elevations	Sheet A-301	08/21/2024
6.	Sections and Details	Sheet A-401	08/21/2024
7.	Typical Siding Details	Sheet S-501	08/21/2024

END OF SECTION 000115

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. Improvements to Exterior and Replace VCT Flooring
Shady Grove State School
Poplar Bluff, Missouri
Project No.: E2405-01

3.0 BIDS WILL BE RECEIVED:

A. Until: 1:30 PM, November 19, 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 consists of improvements to exterior and replacement of VCT flooring for Shady Grove State School.

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.**

C. **NOTE: Bidders are provided new Good Faith Effort (GFE) forms on MissouriBUYS.

5.0 PRE-BID MEETING:

A. Place/Time**:** 10:00 AM, October 31, 2024, at Shady Grove State School, 2400 High Street, Poplar Bluff, MO 63901

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 **$30.00** 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: Dille Pollard Architecture, Kristen Urhran, 573-339-4536, email: uhrhan@dillepollard.com

B. Project Manager: Sandra Walther, 573-257-7322, email: sandra.walther@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."

D. Any time a bidder wants to modify the bid, he or she will have to submit a new one. 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 ; April Howser: 573-751-0053, April.Howser@oa.mo.gov ; or Mandy Roberson: 573-522-0074, 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 Cathy Holliday at 573-751-3491 or by email: cathy.holliday@oa.mo.gov.

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 signatory is other than the corporate president or vice president, the bidder must provide satisfactory evidence that the signatory 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 a 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://oeo.mo.gov/sdve-certification-program/) or the Department of Veterans Affairs' directory (https://veterans.certify.sba.gov/#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

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://oeo.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 Elementary/Secondary Education.

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:	**Improvements to Exterior and Replace VCT Flooring** **Shady Grove State School** **Poplar Bluff, Missouri**
Project Number:	**E2405-01**

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 **90 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 $700 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:	$
Alternate No. 3:	$
Alternate No. 4:	$

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

I, Corporate Secretary, certify that I am Secretary of the corporation named above and that (CONTRACTOR NAME), who signed said contract on behalf of the corporation, was then (TITLE) of said corporation and that said contract was duly signed for and in behalf of the corporation by authority of its governing body, and is within the scope of its corporate powers.

_____

Corporate Secretary

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

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)

Bond No._____

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	
LOCATION		DATE INSTALLED

SIGNIFICANT VARIATIONS FROM SPECIFIED PRODUCT

REASON FOR SUBSTITUTION

DOES PROPOSED SUBSTITUTION AFFECT OTHER PARTS OF WORK?

☐ YES ☐ NO

IF YES, EXPLAIN

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:

☐ 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

PAY APP NO.	PROJECT NUMBER
CHECK IF FINAL ☐**FINAL**	DATE

MBE/WBE/SDVE PROGRESS REPORT

Remit with **ALL** Progress and Final Payments

(Please check appropriate box) ☐CONSULTANT ☐CONSTRUCTION

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	TOTAL AMOUNT OF SUBCONTRACT	$ AMOUNT PAID-TO-DATE	CONSULTANT/SUBCONSULTANT OR CONTRACTOR/SUBCONTRACTOR/SUPPLIER COMPANY NAME
☐ MBE ☐ WBE ☐ SDVE	$	$	
☐ MBE ☐ WBE ☐ SDVE	$	$	
☐ MBE ☐ WBE ☐ SDVE	$	$	
☐ MBE ☐ WBE ☐ SDVE	$	$	
☐ MBE ☐ WBE ☐ SDVE	$	$	
☐ MBE ☐ WBE ☐ SDVE	$	$	

Revised 05/21

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)		

FILE: Closeout Documents

GENERAL CONDITIONS

INDEX

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 contact 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:
Kristen Urhran
Dille Pollard Architecture
266 S. Mount Auburn Rd.
Cape Girardeau, MO 63703
Telephone: 573-339-4536
Email: uhrhan@dillepollard.com

Construction Representative:
Randy Duncan
Division of Facilities Management, Design and Construction
301 West Hight Street, Room 730
Jefferson City, MO 65101
Telephone: 573-526-0582
Email: randy.duncan@on.mo.gov

Project Manager:
Sandra Walther
Division of Facilities Management, Design and Construction
301 West High Street, Room 730
Jefferson City, Missouri 65101
Telephone: 573-257-7322
Email: sandra.walther@oa.mo.gov

Contract Specialist:
April Howser
Division of Facilities Management, Design and Construction
301 West High Street, Room 730
Jefferson City, Missouri 65101
Telephone: 573-751-0053
Email: april.howser@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 LEAD AND ASBESTOS CERTIFICATION REQUIREMENTS:

From SECTION 007213 – GENERAL CONDITIONS, Article 5.4.H.2, ADD receipt of Certification from Contractor meeting the requirements set forth in SECTION 013513.13 – SITE SECURITY AND HEALTH REQUIREMENTS, 3.4., NO ASBESTOS AND NO LEAD CERTIFICATION.

Missouri
Division of Labor Standards
WAGE AND HOUR SECTION

MICHAEL L. PARSON, Governor

Annual Wage Order No. 31

Section 012
BUTLER 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

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Asbestos Worker	$25.51*
Boilermaker	$25.51*
Bricklayer-Stone Mason	$25.51*
Carpenter	$52.52
Lather	
Linoleum Layer	
Millwright	
Pile Driver	
Cement Mason	$50.66
Plasterer	
Communication Technician	$25.51*
Electrician (Inside Wireman)	$25.51*
Electrician Outside Lineman	$25.51*
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Elevator Constructor	$25.51*
Glazier	$25.51*
Ironworker	$69.33
Laborer	$42.63
General Laborer	
First Semi-Skilled	
Second Semi-Skilled	
Mason	$25.51*
Marble Mason	
Marble Finisher	
Terrazzo Worker	
Terrazzo Finisher	
Tile Setter	
Tile Finisher	
Operating Engineer	$25.51*
Group I	
Group II	
Group III	
Group III-A	
Group IV	
Group V	
Painter	$25.51*
Plumber	$70.96
Pipe Fitter	
Roofer	$46.21
Sheet Metal Worker	$74.88
Sprinkler Fitter	$25.51*
Truck Driver	$25.51*
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.

OCCUPATIONAL TITLE	**Prevailing Hourly Rate
Carpenter	$25.51*
Millwright	
Pile Driver	
Electrician (Outside Lineman)	$25.51*
Lineman Operator	
Lineman - Tree Trimmer	
Groundman	
Groundman - Tree Trimmer	
Laborer	$47.97
General Laborer	
Skilled Laborer	
Operating Engineer	$67.64
Group I	
Group II	
Group III	
Group IV	
Truck Driver	$25.51*
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 improvements to exterior and replacement of VCT flooring for Shady Grove State School.

1. Project Location: Shady Grove State School, 2400 High Street, Poplar Bluff, MO. 63901

2. Owner: State of Missouri, Office of Administration, Division of Facilities Management, Design and Construction, Harry S Truman State Office Building, Post Office Box 809, 301 West High Street, Jefferson City, Missouri 65102.

B. Contract Documents, dated 08/21/2024 were prepared for the Project by Dille Pollard Architecture, 266 S. Mount Auburn Rd., Cape Girardeau, MO 63703

C. The Work consists of removal and replacement of existing exterior siding system, soffits, and ceilings and abatement of existing floor tile and mastic and replacement of flooring systems with those specified.

1. The Work includes siding and soffit systems and flooring systems as specified.

D. The Work will be constructed under a single prime contract.

1.3 CONTRACTOR USE OF PREMISES

A. 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.

B. 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..

1.4 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.

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.

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 Contract Change.

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 Contract Changes for allowances.

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 Contract Change time extension will be executed for “bad weather” days, as defined above, encountered during the remainder of the Project.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 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 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:
   1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or 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: See 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 schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1 Replacing damaged or deteriorated ½" thick plywood sheathing under existing siding system.

1. Description: Remove damaged plywood sheathing and replace with new according to Sections 061000 Rough Carpentry. Apply weather barrier over new sheathing according to Section 072500 Weather Barriers
2. Unit of Measurement: Square feet.
3. Base Bid Quantity: One (1) 4'x 8' sheet.

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. Definition: 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. 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. No additional time will be allowed for alternate work unless the number of work days 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: *Provide LVT flooring as specified in lieu of VCT-1 flooring as specified at all areas shown on project documents as VCT-1 replacement.*

1. *In addition to notations on the Drawings, Specification Sections that include requirements for this Alternate include, but are not limited to, Sections 096850 Luxury Vinyl Tile.*

B. Alternate No. 2: *Prepare, prime, and paint structural steel framing at existing canopy at "front entry and drop off areas" as well as all steel handrails, railings, posts, and bollards.*

1. *In addition to notations on the Drawings, Specification Sections that include requirements for this Alternate include, but are not limited to, Sections 099123 Painting.*

C. Alternate No. 3: *Provide Resinous Flooring and Cove Base as specified in lieu of Heavy Duty Safety Sheet flooring at kitchen and dish wash areas shown on project documents.*

1. *In addition to notations on the Drawings, Specification Sections that include requirements for this Alternate include, but are not limited to, Sections 096200 Seamless Resinous Flooring.*

D. Alternate No. 4: *Provide Sport Flooring as specified in lieu of VCT-1 flooring at Multi-Purpose Room as shown on project documents as VCT-1 replacement.*

1. *In addition to notations on the Drawings, Specification Sections that include requirements for this Alternate include, but are not limited to, Sections 096560 Resilient Athletic Flooring.*

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 012100 "Allowances" for procedural requirements for handling and processing Allowances.

2. Division 1, Section 012300 "Alternates" for administrative requirements for using Alternates.

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 Contract Change 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 Contactor 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 Contract Change 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 Contract Change Detailed Breakdown form. Subcontractors may use the appropriate Contract Change 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 CONTRACT CHANGE PROCEDURES

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REFERENCED FORMS

A. The following forms can be found on our website at https://oa.mo.gov/facilities/vendor-links/architectengineering-forms or https://oa.mo.gov/facilities/vendor-links/contractor-forms:

1. Request for Information

2. Designer's Supplemental Instructions

3. Request for Proposal

4. Contract Change
5. Contract Change Detailed Breakdown – SAMPLES
6. Contract Change Detailed Breakdown – General Contractor (GC)
7. Contract Change Detailed Breakdown – Subcontractor (SUB)

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.

B. Coordination: Each Contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each Contractor shall coordinate its operations with operations included in different Sections that 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. Coordinate installation of different components with other Contractors to ensure maximum accessibility for required maintenance, service, and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.

4. 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.

C. 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.

D. 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.

E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

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.

1. Minutes: Designer will record and distribute meeting minutes.

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".

1. Minutes: Designer will record and distribute to Contractor the meeting minutes.

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 Contract Changes

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.

6. Revise paragraph below if Project requires holding progress meetings at different intervals. Insert special intervals such as "every third Tuesday" to suit special circumstances.

7. Project name

8. Name and address of Contractor

9. Name and address of Designer

10. RFI number including RFIs that were dropped and not submitted

11. RFI description

12. Date the RFI was submitted

13. Date Designer's response was received

14. Identification of related DSI or Proposal Request, as appropriate

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® 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® as provided by "e-Builder®" 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® 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® 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.
   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[1] 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[2] 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.)

PART 4 - END OF SECTION 013115

SECTION 013200 – SCHEDULE – 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 excavation, concrete foundation work, underground lines, superstructure, rough-ins, enclosure, hanging of fixtures, etc.) 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 specified in Section 012100 – Allowances.

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.

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. Refer to other Sections for samples to be returned to the Contractor for incorporation in the Work. Such samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of sample submittals.

d. 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	Shop Drawings
013100	Coordination	List of Subcontractors
013200	Schedules	Construction Schedule
013200	Schedules	Schedule of Values
013200	Schedules	List of Subcontractors
013200	Schedules	Major Material Suppliers
0131513.28	Site Security and Health Requirements	Certification
0131513.28	Site Security and Health Requirements	Construction Schedule
0131513.28	Site Security and Health Requirements	List of Subcontractors
024119	Selective Demolition	Construction Schedule
028211	Asbestos Abatement	Certification
028211	Asbestos Abatement	Test Report
061000	Rough Carpentry	Product Data
072500	Weather Barriers	Product Data
074293	Soffit Panels	Product Data
074293	Soffit Panels	Shop Drawings
074293	Soffit Panels	Sample
074646	Fiber Cement Siding	Product Data
074646	Fiber Cement Siding	Shop Drawings
074646	Fiber Cement Siding	Sample
079200	Joint Sealants	Product Data
079200	Joint Sealants	Sample
096200	Resinous Flooring and Wall Covering	Product Data
096200	Resinous Flooring and Wall Covering	Mock up
096200	Resinous Flooring and Wall Covering	Sample
096200	Resinous Flooring and Wall Covering	Warranty
096513	Resilient Wall Base and Accessories	Product Data
096513	Resilient Wall Base and Accessories	Sample
096519	Resilient Floor Tile	Product Data
096519	Resilient Floor Tile	Sample
098650	Luxury Vinyl Tile	Product Data
098650	Luxury Vinyl Tile	Sample
098650	Luxury Vinyl Tile	Operation / Maintenance Manual
099100	Painting	Product Data
099100	Painting	Sample

END OF SECTION 013300

SECTION 013513.13 - SITE SECURITY AND HEALTH REQUIREMENTS (DESE)

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.
4. "No Asbestos and No Lead" certification.
5. Drug testing program and certification.

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.

3.2 RULES OF THE FACILITY

A. No alcohol, drugs, guns, or other weapons are permitted anywhere at the Facility (i.e., inside or outside buildings, or anywhere on school grounds); violators will be referred to local law enforcement for prosecution.

B. No tobacco or smoking products may be used anywhere at the Facility.

C. Sexual harassment, offensive or fraternizing behavior, or foul language around or towards students or staff will not be tolerated. Violations by workers will result in one warning from the Facility Representative. Subsequent infractions will require permanent ejection of offending worker(s) from the jobsite, with no change to the contract schedule or additional cost to the State.

D. The Contractor shall consider the safety of the Facility's students at all times, and shall maintain excavations, scaffolding/ladders, equipment, tools, and materials in as safe a manner as possible during and after working hours.

E. Vehicles should be locked and parked in areas designated by the Facility Representative.

F. Neither the Owner nor DESE assumes responsibility for the Contractor's vehicles, equipment, tools, or materials.

G. The Contractor shall coordinate and communicate planned daily work activities with the Facility Representative at least two (2) working days in advance. This will allow time for the Facility Representative to consider temporarily relocating special education students whose health could be adversely affected by loud noises, chemical odors, temperature extremes, etc.

3.3 SECURITY CLEARANCES AND RESTRICTIONS

A. FMDC CONTRACTOR BACKGROUND AND ID BADGE PROCESS

1. All employees of an OA/FDMC contractor (or subcontractor performing work under an OA/FMDC contract) are required to submit a fingerprint check through the Missouri State Highway Patrol (MSHP) and the FBI enabling OA/FMDC to obtain state and national criminal background checks on the employees, unless stated otherwise in the Contractor's contract.
2. 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.
3. 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 a list of the names of the Contractor's employees who will be fingerprinted and a signed OA/FMDC Authorization for Release of Information Confidentiality Oath 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/facilities/facilities-operations/security-information/fmdc-contractor-background-and-id-badge
4. Fingerprints and Authorization for Release of Information Confidentiality Oath form are valid for one (1) year and must be renewed annually. Changing or adding locations may result in additional required documentation. Certain employees may be required to be fingerprinted more frequently. OA/FMDC reserves the right to request additional background checks at any time for any reason.
5. The Contractor shall notify FMDC via email to FMDCSecurity@oa.mo.gov within 48 hours of anyone severing employment with their company.

3.4 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. The Contractor's workers shall not be under the influence of any intoxicating substances while on the Facility premises.

3.5 NO ASBESTOS AND NO LEAD CERTIFICATION REQUIREMENTS

A. No asbestos containing material (1.0% asbestos by dry weight) or lead containing material (0.06% or 600ppm/10,000ppm lead by dry weight) shall be included in any project submittals or physically installed during construction work on this project.

B. USEPA regulations exclude local education agencies (i.e., DESE MSB, MSD, & SSSH) from the requirements of inspection, sampling, and analysis of homogenous areas that have been newly constructed or repaired/replaced in special education school buildings; where an Architect or Project Engineer responsible for the construction, or an Accredited Inspector,

provides a signed statement that no asbestos (or lead) was specified, or used, as a building material (or system component) in any project construction documents, or physically installed as part of the project work. It is recommended that the Contractor research each material/component used on the job to verify that it contains no asbestos or lead (i.e., look at manufacturer's cut-sheet specifications, Material Safety Data Sheets, DOT shipping classification, or even contact the manufacturer for their verification); then, the Contractor should write on each project submittal: "To the best of my knowledge, items covered by this submittal contain no asbestos or lead containing material".

C. Contractor Certification Requirement

1. Prior to final payment, the Contractor shall submit a signed letter on company letterhead certifying that, to the best of its knowledge, no asbestos or lead containing materials were used or installed during the work. The Contractor shall address the letter to the Service Level Manager/ Designated Person for FMDC, at P.O. Box 809, Jefferson City, MO 65102, and (if applicable) to the Architect or Project Engineer. The letter shall reference the Site/Facility Name, Project Number, Project Title, and shall include the following statement:
2. "The Contractor certifies, to the best of its knowledge, that no asbestos containing material (1.0% asbestos by dry weight) or lead containing material (0.06% or 600ppm/10,000ppm lead by dry weight) was included in any project submittals or physically installed during construction work on this project. Contractor agrees to pay all costs incurred by the Owner discovering, abating, and/or restoring any component or portion of the work that is later found to include an asbestos or lead containing material in excess of these limitations."

D. Architect or Project Engineer Certification

1. As part of the final as-built/close-out document submittal requirements, it is requested that the Project Architect or Engineer (or Accredited Inspector as a last resort) responsible for design and submittal approval, submit a signed letter on company letterhead that references the Site/Facility Name, Project Number, Project Title, and includes the following statement:
2. "As the Designer, or Accredited Inspector, I certify, to the best of my knowledge, that no asbestos containing material (1.0% asbestos by dry weight) or lead containing material (0.06%, or, 600ppm/10,000ppm lead by dry weight) was specified in the construction documents, or approved for installation by the Contractor during construction work, on this project."

3.6 DRUG & ALCOHOL TESTING PROGRAM CONTRACTUAL REQUIREMENT (1 CSR 30-7.010)

A. BASIS AND LEGAL REQUIREMENTS

1. In an effort to create safe and healthy schools and workplaces, the State of Missouri requires that Contractors and Subcontractors shall maintain and enforce a written substance abuse testing program for public works construction projects on public and charter elementary and secondary education construction projects that are subject to the control of the State of Missouri. This policy is not intended to be a substitute for the Contractor's or Subcontractor's complete written substance abuse policy. These

requirements shall be the minimum requirements for complying with Section 161.371, RSMo, and may be supplemented at the discretion of the Contractor or Subcontractor.

2. The State of Missouri has a vital interest in protecting the safety of students and maintaining safe, healthful, and efficient working conditions for both the state and its' Contractors' and Subcontractors' employees; and has determined that the educational and work environment is safer and more productive without the presence of illegal or inappropriate drugs, alcohol, or other substances in the body or on state property on which any state elementary or secondary school is located or being constructed or improved.
3. The use of illegal drugs, on or off duty, is inconsistent with law-abiding behavior expected of all persons. The use of illegal drugs, or abuse of alcohol or prescription drugs, may impair the ability of employees to perform tasks that are critical to proper work performance. The result is an increase in accidents and failures that pose a serious threat to the safety of all students, employees, visitors and the general public. Impaired employees also tend to be less productive, less reliable and prone to greater absenteeism, resulting in the potential for increased cost and delays in the timely completion of contracts.

B. CONTRACTUAL REQUIREMENTS

1. Each contract entered into for the performance of work on any public and charter elementary or secondary project subject to the control of the State of Missouri shall require that each Contractor and each Subcontractor have in place a drug and alcohol testing program consistent with this rule. These contractual requirements shall apply to Contractor and Subcontractor employees on public and charter elementary and secondary education construction projects that are subject to the control of the State of Missouri, including workers, new hires, replacements, and supervisory personnel. The Contractor and all Subcontractors shall comply with this contractual requirement. The State of Missouri shall determine, in its sole discretion, when this contractual requirement shall be applicable; and in such instances, any bid submitted in response to a request for proposal shall comply with this contractual requirement.
2. In order to be eligible to perform work on public and charter elementary and secondary education construction projects that are subject to the control by the State of Missouri, a Contractor must have and enforce a written drug and alcohol testing program incorporating the following testing requirements, terms and conditions applicable to all its employees, prospective employees and Subcontractors. Neither employee nor prospective employee of a Contractor or Subcontractor shall be permitted to work on public and charter elementary and secondary education construction projects that are subject to this rule unless such employee submits to testing as required by the contractual requirement required by this rule.
3. Each Contractor and Subcontractor subject to this rule shall train its' supervisory employees in methods that will allow them to recognize the signs and symptoms of substance abuse and to take action provided by this contractual requirement in a manner consistent with generally accepted safety training procedures.
4. Each Contractor and Subcontractor subject to this rule is responsible for the cost of developing, implementing, and enforcing its drug and alcohol testing program, including the cost of drug and alcohol testing of its employees provided by the contractual requirement required by this rule.
5. Each Contractor shall furnish a copy of its drug and alcohol testing program and certify that it and its' Subcontractors are in compliance with the provisions of this rule to the State of Missouri at the time it submits a bid for any contract with the State of Missouri

for work on public and charter elementary and secondary education construction projects that are subject to the control of the State of Missouri. Additionally, each Subcontractor shall furnish a copy of its substance abuse testing program to the Contractor prior to commencement of work on public and charter elementary and secondary education construction projects that are subject to this contractual requirement. The Contractor may reject a Subcontractor's program as noncompliant with the contractual requirement required by this rule.

C. TESTING REQUIREMENTS

1. PRE-ENGAGEMENT TESTING: Testing for all substances other than alcohol as described in this rule shall be conducted by each Contractor and Subcontractor for its employees or prospective employees within 120 days prior to any employee's appearance on a public and charter elementary and secondary education construction project that is subject to this contractual requirement. Contractors' or Subcontractors' employees that can provide certification of a previous drug test occurring within 120 days or employees that have been subject during the preceding consecutive two (2) years to a random and periodic selection program that meets the standards as set forth in this rule and, if the employee actually has been tested, that indicates a negative result for each of the substances listed herein, may be exempted from pre-engagement testing provided by this rule. If the employee was not employed by the Contractor or Subcontractor that is his or her current employer at the time of the previous test, the employee may be exempted from pre-engagement testing only upon certification of the non-negative test directly from the administrator of the testing program that conducted the previous test.
2. RANDOM TESTING: All employees of the Contractor and Subcontractor shall be subject to random testing by the Contractor or Subcontractor. For employees holding a commercial driver license, the annualized drug and alcohol testing rate shall comply with 49 CFR Part 382, as may be amended from time to time and similar applicable regulations of the Federal Highway Administration. All other employees of the Contractor or Subcontractor shall be subject to testing for all substances other than alcohol at the random annualized selection rate of fifty (50) percent of the Contractor's or Subcontractor's employees. Employees selected for random testing shall report in a timely manner to the drug and alcohol testing laboratory or collection site where directed for drug and/or alcohol testing.
3. PERIODIC TESTING: All employees working on public and charter elementary and secondary education construction projects that are subject to this rule shall be subject to periodic and random testing for all substances other than alcohol on at least a biannual basis. Employees subject to periodic testing shall report in a timely manner as directed to the drug and alcohol testing laboratory or collection site for drug testing.
4. REASONABLE SUSPICION TESTING: All employees of the Contractor and Subcontractor on public and charter elementary and secondary education construction projects that are subject to this rule shall be subject to a drug and alcohol test when an employee is acting in an abnormal manner that leads a supervisory employee of the Contractor or Subcontractor to have reasonable suspicion that the employee is under the influence of alcohol or controlled substances. Reasonable suspicion means suspicion based on specific personal observations by the supervisory employee concerning the appearance, behavior, speech or breath odor of the employee.
5. POST-ACCIDENT/INCIDENT TESTING: All employees of Contractors and Subcontractors on public and charter elementary and secondary education construction projects who are subject to this rule shall be subject to a drug and alcohol test following an on-the-job injury requiring medical treatment or following a serious or potentially

serious incident, including near misses, during which safety precautions were violated, persons were or could have been injured, unsafe instructions or orders were given, vehicles, equipment, or property was damaged, careless acts were performed, or when prescribed personal protective or safety equipment was not worn. Employees involved or who may have contributed to the incident, shall be subject to a drug and alcohol test. If it is impossible or impractical, because of the physical condition of the person involved in the accident to be subjected to drug and alcohol testing; and if in subsequent medical treatment, that person's blood or other bodily fluid will be drawn, then that blood or other bodily fluids may be analyzed for drugs and alcohol.

D. SUBSTANCE ABUSE TESTING PROTOCOLS

1. A Contractor or Subcontractor subject to the provisions of this rule shall perform pre-engagement, random, periodic, reasonable suspicion, and post-accident/incident testing in the following manner:

    a. Drug Testing

        1) All urine samples collected under this program shall be analyzed by a laboratory certified by the National Institute on Drug Abuse/Substance Abuse and Mental Health Service Administration of the U.S. Department of Health and Human Services and shall include an initial Enzyme Multiplied Immunoassay Screening Test (EMIT) and, when necessary, confirmed by a Gas Chromatography /Mass Spectrometry (GC/MS) confirmation test. All samples confirmed by the laboratory as non-negative shall be interpreted as positive or negative by a Medical Review Officer licensed by the American Association of Medical Review Officers, American College of Occupational and Environmental Medicine, Medical Review Officer Certification Council, or American Society of Addiction Medicine.

    b. Alcohol Testing

        1) The initial screening tests for alcohol shall be performed by using either a saliva test or a DOT approved breathalyzer.
        2) Alcohol confirmatory tests shall be performed by either a blood alcohol test or a DOT approved breathalyzer.

2. Testing for the presence of drugs or alcohol in an employee's system and the handling of test specimens shall be conducted in accordance with guidelines for laboratory testing procedures and chain-of-custody procedures established by the Substance Abuse and Mental Health Service Administration of the U.S. Department of Health and Human Services.
3. The program shall require notification to the employer and employee of the results of any non-negative drug and alcohol test and the Division of Facilities Management, Design and Construction shall be notified of the action taken to protect the safety of students as a result of such positive test, provided that no requirement of individual confidentiality of test results provided by federal law or regulation or state statute shall be violated in providing such notifications.

E. THRESHOLD LIMITS

1. All samples collected shall be analyzed by a laboratory certified by the Substance Abuse and Mental Health Service Administration of the U.S. Department of Health and Human Services, and shall include an initial Enzyme Multiplied Immunoassay Screening Test (EMIT) and, when necessary, confirmed by a Gas Chromatography/Mass Spectrometry (GC/MS) Confirmation Test. Said testing must screen, at a minimum, for the substances and levels of such substances provided by 49 CFR Part 40 and for alcohol as provided by 49 CFR Part 382, as may be amended from time to time. The levels that shall be deemed to result in a negative test result shall be defined by 49 CFR Part 40 and 49 CFR Part 382, as may be amended from time to time; provided that if such regulations shall no longer define substances and testing levels in the future, testing as required by this rule shall screen for the following substances that shall not exceed the following levels in order to be deemed a negative test result:

F. (EMIT) CONFIRMED/(GC/MS) CONFIRMATION TEST:

1. Drug tested/ Initial Level(ng/ml)/ Cut-Off Level(ng/ml)

    a. Amphetamines/500/250 - Includes Amphetamines, Methamphetamines and Ecstasy (MDMA)
    b. Barbiturates/300/200
    c. Benzodiazepines/300/200
    d. Cocaine Metabolite/150/100
    e. Cannabinoids (Marijuana THC)/50/15
    f. Methadone/300/200
    g. Opiates:

        1) Codeine/Morphine/2000/2000
        2) Heroine Metabolite/10/10
        3) Phencyclidine (PCP)/25/25
        4) Propoxyphene/300/200
        5) Breath/Blood Alcohol Content (BAC)/.04%/.04%
        6) Removal from jobsite (BAC)/.0200-.0399%/.0200%-.0399%

G. REFUSAL TO SUBMIT TO TESTING/CONFIRMED POSITIVE RESULTS

1. Any employee of a Contractor or Subcontractor performing any duties or work that are subject to this rule who refuses to submit to testing or receives a confirmed positive test result for any of the substances indicated in Section E shall be required to immediately leave the construction site and be prohibited from returning to any construction site subject to control of the State of Missouri until evidence is provided of the completion of the reinstatement procedures as set forth in section G.
2. Determination for Violation of Policy

    a. A confirmed positive drug or alcohol test.
    b. Failure to contact the Medical Review Officer as directed.
    c. Failure to report as directed for random testing.
    d. The use, possession, sale or distribution of alcohol or a controlled illegal or unauthorized substance, or the presence of any employee with such ingested substances for non-medical reasons on a public and charter elementary and secondary education construction project subject to the control of the State of Missouri.

e. Working, reporting to work, being on a public and charter elementary and secondary education construction project that is subject to the control of the State of Missouri, or in a state or employer owned, leased or rented vehicle, while under the influence of alcohol (0.04% BAC or greater).
f. Switching, adulterating or attempting to tamper with any sample submitted for drug or alcohol testing or otherwise interfering or attempting to interfere with the testing process.
g. Refusal to submit a specimen for testing shall be deemed to be a positive test result and shall be subject to the same consequences as specimens tested and confirmed as positive.
h. The use of a controlled substance by an individual other than the individual for whom the controlled substance was prescribed or the abuse of a controlled substance by the individual for whom it was prescribed.

H. REINSTATEMENT PROCEDURES

1. An employee receiving a confirmed positive test result for any of the substances indicated in Section 5 may return to work on a public and charter elementary and secondary education construction project that is subject to the control of the State of Missouri only after the following conditions have been satisfied:
2. Evidence is submitted to the Contractor or Subcontractor that the employee has completed or is actively participating in an approved drug/alcohol assessment, treatment, and/or counseling program. The costs of this assessment, treatment or program need not be borne by the Contractor or Subcontractor.
3. Evidence is submitted of the employee passing of a drug and alcohol test that meets the requirements of Sections E and F of this rule. The costs of this subsequent retesting need not be borne by the Contractor or Subcontractor.
4. The employee shall be subject to additional random drug and alcohol testing on a monthly basis while on any public and charter elementary and secondary education construction project that is subject to the control of the State of Missouri. The costs of this additional testing, treatment or program need not be borne by the Contractor or Subcontractor.
5. An employee known by the Contractor or Subcontractor to have previously had a positive test result who receives a second or subsequent confirmed positive test result in connection with subsequent testing required by this Section H of this rule shall be removed by the Contractor or Subcontractor from all public and charter elementary and secondary education construction projects that are subject to the control of the State of Missouri. The employee shall not return to work on any public and charter elementary and secondary education construction project subject to this rule until that the employee has completed an approved drug/alcohol assessment, treatment, and/or counseling program; and until after evidence is submitted of the employee passing of a drug and alcohol test that meets the requirements of sections E and F of this rule and that indicates a blood alcohol concentration of less than 0.02 percent.

I. COMPLIANCE DETERMINATION

1. The State of Missouri may audit any substance abuse testing program implemented pursuant to this contractual requirement to verify compliance, upon at least 24 hours notice by the State to the Contractor of its intent to audit. The State shall have free access to all relevant records of the Contractor and its Subcontractors for this purpose.
2. Any portion of this program that is in violation of applicable federal or state law or

regulation shall be deemed unenforceable.

3.7 DISRUPTION OF UTILITIES

A. The Contractor shall give a minimum of 72 hours written notice to the Construction Representative and Facility Representative before disconnecting electric, gas, water, fire protection, or sewer service to any building.

B. The contractor shall give a minimum of 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.

3.8 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 013513.13

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 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. Telephone service
6. Sanitary facilities, including drinking water
7. Storm and sanitary sewer

C. Support facilities include, but are not limited to, the following:

1. Field offices and storage sheds
2. Temporary roads and paving
3. Dewatering facilities and drains
4. Temporary enclosures
5. Hoists and temporary elevator use
6. Temporary project identification signs and bulletin boards
7. Waste disposal services
8. Rodent and pest control
9. Construction aids and miscellaneous services and facilities

D. Security and protection facilities include, but are not limited to, to following:

1. Temporary fire protection
2. Barricades, warning signs, and lights
3. Sidewalk bridge or enclosure fence for the site
4. Environmental protection

1.3 SUBMITTALS

A. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

B. 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 job-built temporary office, shops, and sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.

2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sized and thicknesses indicated.

3. For fences and vision barriers, provide minimum 3/9” (9.5mm) thick exterior plywood.

4. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8” (16mm) thick exterior plywood.

C. Gypsum Wallboard: Provide gypsum wallboard on interior walls of temporary offices.

D. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary office, shops, and shed.

E. 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.

F. 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.

G. Water: Provide potable water approved by local health authorities.

H. 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 or similar job-built construction 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. Provide the following:

1. Two (2) units for Contractor use.
2. Four (4) units for owner use only. One (1) of which shall be ADA accessible.
3. An additional Six (6) units (for a total of ten) shall be made available to owner on drill weekends during the project. (1 weekend per month).

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. Contractors using such services shall pay all costs of temporary services, circuits, outlet, extensions, etc.

D. Temporary Lighting: When overhead floor or roof deck has been installed, provide temporary lighting with local switching.

1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.

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 Telephones: The Contractor will provide cell phone service throughout the construction period for all personnel engaged in construction activities

1. Post a list of important telephone numbers.

G. 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.

H. 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.

I. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

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 onsite as designated by the Facility Representative or the Construction Representative. Areas for use by the Contractor for storage will be identified at the Pre-Bid Meeting. Install storage sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on site.

C. Construction Parking: Parking at the site will be provided in the areas designated at the Pre-Construction Meeting.

D. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations, and construction free of water.

E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.

1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and materials drying or curing requirements to avoid dangerous conditions and effects.

2. Install tarpaulins securely with incombustible wood framing and other materials. Close openings of 25SqFt (2.3SqM) or less with plywood or similar materials.

3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.

4. Where temporary wood or plywood enclosure exceeds 100SqFt (9.2SqM) in area, use UL-labeled, fire-retardant-treated material for framing and main sheathing.

F. 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.

G. Temporary Exterior Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.

H. 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. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Designer.

B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonable predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations".

1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one (1) extinguisher on each floor at or near each usable stairwell.
2. Store combustible materials in containers in fire-safe locations.
3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.

C. Permanent Fire Protection: At the earliest feasible date in each area of the Project complete installation of the permanent fire-protection facility including connected services and place into operation and use. Instruct key personnel on use of facilities.

D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting including flashing red or amber lights.

E. Enclosure Fence: Before excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that

will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.

1. Provide open-mesh, chainlink fencing with posts set in a compacted mixture of gravel and earth.

2. Provide plywood fence, 8’ (2.5m) high, framed with (4) 2”x4” (50mm x 100mm) rails, and preservative-treated wood posts spaced not more than 8’ (2.5m) apart.

F. 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.

G. 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. Materials and facilities that constitute temporary facilities are the Contractor’s property. The Owner reserves the right to take possession of project identification signs.

2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth

of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances as required by the governing authority.

3. 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 impending 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 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous **demolition and construction** waste.
2. Recycling nonhazardous **demolition and construction** waste.
3. Disposing of nonhazardous **demolition and construction** waste.

B. Related Sections include the following:

1. Division 01 Section "Multiple Contract Summary" for coordination of responsibilities for waste management.
2. Division 01 Section "Temporary Facilities and Controls" for environmental-protection measures during construction**, and location of waste containers at Project site**.
3. Division 02 Section "Structure Demolition" for disposition of waste resulting from demolition of buildings, structures, and site improvements**, and for disposition of hazardous waste**.
4. Division 02 Section "Selective Structure Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements**, and for disposition of hazardous waste**.
5. Division 04 Section "Unit Masonry" for disposal requirements for masonry waste.
6. Division 04 Section "Stone Masonry" for disposal requirements for excess stone and stone waste.
7. Division 31 Section "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.03 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.04 QUALITY ASSURANCE

A. Waste Management Coordinator Qualifications: LEED Accredited Professional by U.S. Green Building Council. Waste management coordinator may also serve as LEED coordinator.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with hauling and disposal regulations of federal, state, tribal and local authorities having jurisdiction.

D. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 DISPOSAL OF WASTE

A. General: Presidential Executive Order 13514 "Federal Leadership in Environmental, Energy, and Economic Performance", 8 October, 2009 requires the diversion of at least 50%, by weight of all construction and demolition materials and debris by the end of fiscal year 2015. Therefore, the contractor shall make all reasonable efforts to recycle and recover Construction and Demolition (C&D) waste from this project. Records shall be maintained to document the quantity of waste generated, the quantity of waste diverted through sale, reuse, or recycling, and the quantity of waste disposed of by landfill or incineration.

1. All records must be provided to the project manager upon project completion.

B. Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

C. Burning: Do not burn waste materials.

D. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01 74 19

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. Preinstruction 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. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
2. Owner will furnish an instructor to describe Owner's operational philosophy.
3. 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 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

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

B. Related Requirements:

1. Section 010100 "Summary of work" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
2. Section 013513.13 "Site Security and Health Requirements" for cutting and patching procedures.
3. Section 01500 "Construction Facilities and Temporary Controls" for general protection and work procedures for alteration projects.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.

B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse.

C. Remove and Reinstall: Detach items from existing construction, in a manner to prevent damage, prepare for reuse, and reinstall where indicated.

D. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

E. Dismantle: To remove by disassembling or detaching an item from a surface, using gentle methods and equipment to prevent damage to the item and surfaces; disposing of items unless indicated to be salvaged or reinstalled.

1.4 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.

1.5 PREINSTALLATION MEETINGS

A. Pre-demolition Conference: Conduct conference at project site.

1. Inspect and discuss condition of construction to be selectively demolished.
2. Review abatement procedures and coordination.
3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's building manager's and other tenants' on-site operations are uninterrupted.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.

B. Pre-demolition Photographs or Video: Where demolition adjoins existing construction not scheduled to be removed, show existing conditions of adjoining construction, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Submit to Architect before Work begins.

1.7 CLOSEOUT SUBMITTALS

A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 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. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

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

D. Hazardous Materials: Asbestos abatement is part of this project. Coordinate demolition activities with abatement contractor to mitigate any contamination. Once abatement of floor tile is complete, it is not expected that hazardous materials will be encountered in the remaining Work.
   1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. 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.

1.9 COORDINATION

A. Building is occupied. Coordinate securing of the building at the end of each work day with owner.

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 ASSE 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. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video. Submit to Architect.
   1. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations.
   2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. 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. Owner will arrange to shut off indicated services/systems when requested by Contractor. Otherwise it is the responsibility of the Contractor 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.
   4. Refer to Mechanical/Electrical/Plumbing divisions for additional information

3.3 PROTECTION

A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
2. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
3. Cover and protect furniture, furnishings, and equipment that have not been removed.
4. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."

B. Demolition shall be limited to the tenant built out spaces to include finishes, light gauge metal framing, electrical wiring, HVAC drops, plumbing fixtures, and other tenant finish components. No structural demolition is to be undertaken as part of this project.

C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION, GENERAL

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.
4. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
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 Salvaged Items:
1. Conduct salvage survey and provide quantities and counts of salvaged materials and components that can potentially be reutilized in new the new construction, including but not limited to the following:
2. Clean salvaged items.
3. Pack or crate items after cleaning. Identify contents of containers.
4. Store items in owner designated on-site secure area.

D. 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 as consistent with intended use. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

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

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and recycle, or dispose of them in an EPA-approved construction and demolition waste landfill.

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.

3.6 CLEANING

A. 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.

3.7 SELECTIVE DEMOLITION SCHEDULE

A. Remove: building materials and components as indicated on demolition drawings.

B. Remove and Reinstall, UNO:
1. Electrical lighting and power devices.
2. Electrical panels and disconnects.
3. Building Signage.

C. Existing to Remain, UNO:
1. Building structure.
2. Exterior envelope (exterior sheathing, stud framing, air barrier, insulation, storefront, windows, exterior doors, etc.)
3. All other components and materials not explicitly identified for demolition

END OF SECTION 024119

SECTION 028211 – ASBESTOS ABATEMENT

Part 1 – SUMMARY OF WORK

1001.01 Description of Work

Shady Grove State School Desires to remove non-asbestos floor tile with attached category 1 non-friable asbestos containing mastic from the entrance, offices, kitchen, dining room, workshop, gym, supply, and storage rooms of the school. Refer to **Appendix A** for Asbestos Management Plan, 2021 Reinspection Survey Report, prepared by Occu-Tec Energy, Environmental, and Safety Solutions, dated January 11, 2022.

The work consists of furnishing labor, equipment, employee training, permits, notifications, agreements, registration, personal air monitoring, supplies, and materials to perform abatement and disposal of ACM.

The Asbestos Abatement Contractor (AAC) shall perform all work in accordance with these work practices and applicable codes and regulations for clean-up, removal, and disposal of ACM. Whenever there is a conflict or overlap between the work practices, regulations, or codes, the most stringent provisions apply.

The AAC is responsible for providing notification to applicable Federal, State and Local Agencies.

The building owner May choose to retain a 3rd party to perform air monitoring and contractor oversight during the abatement activities. Air monitoring and oversight are not required by law on this project.

1001.02 Summary of Asbestos Materials to be Removed.

Proposed work will be separated by type and area of removal. Table 1.1 below identifies ACM removal.

TABLE 1.1 ACM Removal Pleasant View apartments Park Hills

Material Type	Approx. Quantity	Removal Method	Time Frame
Floor tile (non-asbestos)	6,000 ft2	gross	2 days

Asbestos mastic attached to floor tile	6,000 ft2	gross	2 days

1001.03 Asbestos Abatement Contractor's Scope of Work

The successful AAC's scope of work includes, but is not limited to, the following:

A. Submittals
   - Bid submittal
   - Qualification package
B. Insurance submittal and approval
C. Pre-commencement activities
   - Permits, notifications, and fees
   - Preplanning and project coordination
   - Contractor license
   - Worker certifications and training
D. Site mobilization
E. Site preparation and setup
   - Isolation of work area
   - Construction of decon systems
F. Abatement activities
   - Setup/Isolation
   - ACM Removal
   - Secondary and final cleaning
G. Waste disposal activities.
   - Waste packaging and labeling.
   - Loadout
   - Transportation
   - Disposal
H. Teardown
I. OSHA compliance monitoring
J. Site demobilization
K. Documentation and report

Strict fiber control strategies must be implemented at all times to protect the health and safety pf personnel working in and adjacent to the work area during asbestos removal operations.

1001.04 Applicable Standards and Guidelines

All work under this contract and any other trade work done in conjunction with the abatement shall be done in strict accordance with all applicable Federal, State, and Local regulations, standards and codes governing asbestos abatement, transportation, and disposal, heal and safety. The most recent edition of any relevant

regulation, standard, document, or code shall be in effect. Where conflict among the re requirements or with these specifications exists, the most stringent requirements shall be used. Asbestos abatement projects are regulated by several government agencies. Applicable regulations and standards are.

- USEPA 40 CFR 61
- USEPA 40 CFR 49
- OSHA 29 CFR 1910.134
- OSHA 29 CFR 1910.1001
- OSHA 29 CFR 1926.1101
- OSHA 29 CFR 1926.451
- Missouri DNR 10 CSR 10-6.241 and 10-6.250
- American National Standards Institute
    - ANSI Z41.11967 Safety Shoes
    - ANSI Z9.21979 Fundamentals Governing the Design and Operation of Local Exhaust System
    - ANSI Z87.11979 Protective Eye ware
    - ANSI Z88.280 Practices for Respiratory Protection

Part 2 – CONDUCT OF WORK

1002.01 Project Management

To be determined

1002.02 Premises

The AAC shall schedule and perform work to cause as little interference as possible on the premises. The AAC will be responsible for taking all precautions necessary to protect the facility throughout the duration of the project.

1002.03 Access

The project will be completed on weekdays. The AAC will have access to the work site as follows:

Monday-Friday 7:00 a.m. to 5:00 p.m.

Specific project schedules will be discussed and approved at a pre commencement meeting.

1002.04 Use of the Site

The AAC shall confine operations to the work areas designated by the Building Owner. Portions of the site beyond areas in which work is indicated are not to be disturbed. The AAC shall conform to site rules and regulations affecting the work while engaged in project activities including the following:

The AAC's employees utilizing personal protective equipment (PPA) shall do so in designated areas only. No personnel wearing PPE will be allowed outside the designated work area.

The site shall not be unreasonable encumbered with materials or equipment. Store all materials at the designated site. Keep the site free from accumulation of waste, rubbish, or construction debris.

All personnel shall sign in daily with the Owners on site representative upon mobilization and demobilization from work area.

Protect all property within the work site. Any and all damage is to be repaired at the AAC's expense.

1002.05 Authority to Stop Job Activities

The building owner's representative shall have the authority to stop any job activities not being performed satisfactorily or in accordance with applicable regulations or requirements of this specification without additional charges by the AAC to Building owner. This shall not relieve the AAC from liability for violating regulations or guidelines. The AAC shall be responsible to know these laws and regulations and shall, at all times comply with them.

1002.06 Weekly Coordination Meetings

The AAC shall hold a daily meeting. These meetings shall include health and safety reports, review of OSHA compliance monitoring, overall project status and work schedules, reporting of unusual events and accidents, space and access limitations, and performance requirements.

The AAC shall submit at each daily meeting, OSHA compliance air monitoring data and analytical results.

The cost for the above meetings is to be included in the base bid.

1002.07 Site Conditions

A. The AAC shall be responsible for supplying transformers, sub panels, and all temporary cabling and extension cords required to perform the duties specified in this document. The AAC shall retain a certified electrical subcontractor to install necessary electrical equipment and disconnect/isolate existing power servicing the work area.

B. Potable Water – The ACC shall supply potable water to be used on this project. The AAC is responsible for all materials and labor required for connecting to existing water lines in locations designated by the Building Owner's personnel.

C. Sanitary Sewer – The ACC shall be responsible for sanitary sewer discharge of AAC generated wastewater.

D. Toilet Facilities – Toilet facilities for AAC personnel shall be the portable chemical type. The ACC shall furnish toilet facilities in designated locations.

Part 3 – SUBMITTALS AND NOTIFICATIONS

1003.01 Bid Document

Bid form will be provided by The Building Owners Representative.

1003.02 Qualifications

The AAC shall submit one copy of the following as part of their bid:

- Environmental Health and Safety Program
- AAC License in Missouri
- Name of licensed waste hauler
- Name of landfill to be utilized.
- List of any citations levied against your organization, officers, or partners by any Federal, State, or Local government agency for violations pertaining to asbestos removal and disposal and give their resolution.

    - Time estimates for completion by work

Upon award of contract the AAC must submit the following to the pre-commencement meeting to be included as part of the contract documents:

- Site – specific work plans
- Missouri employee licenses, training certifications, physicians' statements of respiratory protection use, and fit tests

1003.03 Indemnification

A. The AAC shall defend and indemnify and save The building Owner, their agents, servants, and employees harmless form any and all liability on ay claims, suits, or causes of action made or brought against them, or any of them, by any person whomsoever (including claim by employees of the AAC, its subcontractors or suppliers) for personal injury, death or property damage, including loss of the use thereof, arising out of m connected with , or any way related to the work to be performed by the AAC, the presence of the AAC or its subcontractors or suppliers agents, servants, and employees on the premises of the Fredericktown Senior apartments, their agents, servants, or employees contributed thereto; provided however that this indemnification shall not apply to any such claims, suits or causes of action resulting for the sole negligence of The Building owner or there representatives

Further, The AAC shall defend and indemnify and save The building owner, their agents, servants, and employees harmless form any and all liability on any claims, suits, or causes of action made or brought against them, or any of them, by any person whomsoever (including claim by employees of the AAC, its subcontractors or suppliers) for personal injury, damage or death arising out of or attributable in any way to emergency first aid treatment and related services provided by Building owner, regardless of whether such injury, damage, or death is contributed to or cause by or alleged to have been contributed to by the negligence of the Building owner, their agents, servants, or employees.

1003.04 Change Orders

The building Owner may make changes by altering, adding to, or deducting from the work and negotiating a change in the contract sum. All change order work shall be executed in conformity with the terms and conditions of the contract documents. Any change in

the contract sum or time for completion shall be adjusted in the change order, which will be effective when signed by both parties.

No written or oral instructions shall be construed as directing a change in the work unless in the form of a change order approved by the consultant and signed by the building owner and the AAC. The change order shall describe or enumerate the work to be performed, state the price to be added to or deducted from the contract sum, and state the addition or deduction of time of completion.

1003.05 Notifications

The AAC shall maintain two copies of applicable Federal, State and/or Local notifications: one copy of each to be posted at the job site and one copy of each to be kept on file in the AAC's office.

The AAC shall submit the proper paperwork for post-notification requirements to MDNR. After Consultant has confirmed project completion and the AAC has completely demobilized from the site.

1003.06 Licenses

The AAC will maintain current licenses as required by applicable State or Local jurisdictions for removal of ACM or other regulated activity relative to the work of this contract and shall provide evidence thereof upon award of project.

SECTION 2000 – SCOPE OF WORK

Part 1 – ISOLATION/SETUP

2001.01 General Setup Requirements

A. The ACC shall remove all equipment, furniture, wall decorations, and supplies from the abatement areas prior to the start of asbestos Abatement activities.

B. The AAC and Consultant shall identify and record the extent of all existing damage to the structure and equipment in the work area prior to commencement of work.

C. All electrical equipment within the work area shall be isolated by the ACC or designated contractor prior to commencement of abatement activities.

D. The AAC shall supply equipment, labor, hookups, etc., for electrical sub panels to service all necessary loads for the abatement work and installation with a certified electrical subcontractor.

E. The AAC shall provide ground fault circuit interrupter (GFCI) protection for all connections to electric service.

F. Prior to commencement of setup activities, the work area and areas immediately adjacent shall be pre-cleaned of all visible ACM debris, if necessary.

G. The AAC shall utilize 6-mil polyethylene (poly) sheeting in ALL cases. All other references to specific thickness of poly in the following divisions and sections are hereby specified as 6-mil poly.

H. The AAC shall provide a hot water heater(s), if necessary, of adequate size for use during personnel decontamination by individuals exiting the work area.

I. The AAC shall provide all lighting necessary to perform work.

J. The AAC shall protect extension cords to prevent trip hazards.

K. Project manager shall perform daily inspections of AAC's progress to confirm compliance with project specifications.

2001.02 General Setup Requirements Critical Barriers/Negative Air Containments

A. Critical barriers consisting of poly sheeting shall be placed over all openings to the regulated area.
B. Provide and install a negative air system utilizing air filtration devices (AFDs) with HEPA filters with primary, secondary, and

pre-filters. AFDs shall be of sufficient quantity to provide 4 air changes per hour.

C. Negative air system shall be operational and work area smoke tested prior to commencement of cleanup and abatement activities.
D. All objects within the regulated area shall be moved or covered with poly sheeting and secured with duct tape.
E. Provide materials and construct a decontamination facility in or adjacent to the work area.

   Three chambers consisting of an equipment room, shower room and clean room shall be separated by control curtains. Control curtains shall consist of triple flap poly sheeting sealed on opposite sides. Two layers of poly sheeting shall cover floors, ceilings, and walls of the decontamination facility. Contaminated water generated from the shower room shall be filtered prior to discharge using a minimum 2 stage system including at least one 0.5 micron and one 50-micron filter. All water generated shall be filleted and discharged into a sanitary sewer.

F. In areas of floor tile removal, a poly splashguard (minimum 3 feet high) shall be installed on all walls within the work area.

A. Work will consist of removing ACM floor tile and associated mastic using wet manual methods.

B. Mechanical floor tile removal machines are not allowed to be used.

C. Immediately following removal, the wet floor tile shall be containerized in a 6 Mill poly disposal bag.

D. Floor tiles shall be removed utilizing tile removal hand tools and wet manual methods.

E. Utilize a low odor chemical mastic remover to abate the floor tile mastic in the project area.

F. After completion of the bulk removal phase, all surfaces from which asbestos shall be further cleaned using wet methods to remove any residual ACM. All cleaning equipment shall be thoroughly decontaminated or packaged for disposal.

Pre Clearance-Sampling Activities

G. All asbestos containing waste and equipment shall be removed from work zone prior to visual inspection.

H. Following visual inspection and successful clearance sampling, splashguards and protective poly sheeting shall be disposed as ACM.

2001.03 Linoleum and Duct paper Removal Full Containment

DOES NOT APPLY TO THIS PROJECT

A. Work will consist of removing all linoleum from kitchen, bath & closets from each unit and community building.

B. Critical barriers consisting of poly sheeting shall be placed over all openings to the regulated area.

C. Install 1 layer of 4 mil poly sheeting on all walls.

D. Provide and install a negative air system utilizing air filtration devices (AFDs) with HEPA filters with primary, secondary, and pre-filters. AFDs shall be of sufficient quantity to provide 4 air changes per hour.

E. Negative air system shall be operational and work area smoke tested prior to commencement of cleanup and abatement activities.

F. All objects within the regulated area shall be moved or covered with poly sheeting and secured with duct tape.

G. Provide materials and construct a decontamination facility in or adjacent to the work area.

Three stage chambers consisting of an equipment room, shower room, and clean room shall be separated by control curtains. Control curtains shall consist of triple flap poly sheeting sealed on opposite sides. Two layers of poly sheeting shall cover floors, ceilings, and walls of the decontamination facility. Contaminated water generated from the shower room shall be filtered prior to discharge using a minimum 2 stage system including at least one 0.5 micron and one 50-micron

filter. All water generated shall be filleted and discharged into a sanitary sewer.

2001.04 Teardown and Site Restoration

A. Following visual inspection and successful clearance sampling, carefully remove critical barriers, HEPA vacuum any and all debris accumulated behind the poly and dispose of as contaminated waste.

2001.05 Floor tile/ mastic – Work Practices

I. Work will consist of removing non asbestos floor tile with associated asbestos containing mastic.

J. No mechanical machines are allowed to be used onsite.

K. Immediately following removal, the material shall be containerized in a poly lined, labeled, rigid

L. material shall be removed utilizing tile removal hand tools and wet manual methods

M. After completion of the bulk removal phase, all surfaces from which asbestos shall be further cleaned using wet methods to remove any residual ACM. All cleaning equipment shall be thoroughly decontaminated or packaged for disposal.

Pre Clearance-Sampling Activities

L. All asbestos containing waste and equipment shall be removed from the work zone prior to visual inspection.

2001.06 Teardown and Site Restoration

B. Following visual inspection any and all debris accumulated behind the poly and disposed of as contaminated waste.

Part 2 – WASTE DISPOSAL

2002.01 General Waste Disposal Requirements

A. The AAC shall be responsible for coordination of all disposal activities and will supply at its own expense the necessary size and number of enclosed and padlocked containers required for the durations of this asbestos abatement project.
B. The AAC shall be responsible for removal, packaging, labeling, loading, and transportation of asbestos waste from the abatement area and ultimately off-site. It will be the responsibility of the AAC to inform the Consultant in advance when scheduling disposal activities.
C. All packaged and labeled ACM shall be removed from the work area and transported off-site during scheduled load-out activities.
D. During waste loadout activities, double bagging shall take place inside the first chamber (nearest the containment) and disposal bag shall be goose-necked and sealed with duct tape.

2002.02 Packing

A. The AAC shall double-bag wetted asbestos waste in 6-mil asbestos-labeled, poly bags and individually seal airtight with duct tape. Material likely to puncture 6-mil poly bags are to be packaged in 55-gallon fiber drums or by other approved means to prevent fiber release.
B. The AAC shall remove all containerized waste from the work area. Consultant shall verify work site is cleared of all waste.

2002.03 Labeling

A. The AAC shall provide labels in accordance with 29 CFR 1910.1200 (f) of the ESHA Hazard Communication Standard with the following information in accordance with 20 CFR 1926.1101(k)(8)(I,ii.iii.and v) and 49 CFR 172.101
B. ACM disposal containers transported to the disposal site shall be labeled with the following information: 1) Name of Waste Generator, 2) Name of Asbestos Contractor, 3) Waste generation location.

2002.04 Storage

A. No asbestos materials will be stored on site

2002.05 Loadout

A. Material containers removed under abatement shall be HEPA-vacuumed and/or wet wiped in the work area to remove gross contamination before transporting to the decontamination area.

B. Disposal bags, drums, and containers shall be decontaminated with a fine water spray and wet-wiped in the equipment decontamination area by use of decon setup water hose and water catch trough system.

C. All throughly cleaned containers will then be passed through the equipment decontamination area into the clean zone. The container will be placed in poly lined covered carts for transportation to the disposal container.

D. All containers will be loaded in a manner that minimizes puncture risk to the disposal containers, thereby avoiding fiber release outside the containment area. The AAC shall optimize loading the container to maximize volume and minimize number of containers required for disposal. At the conclusion of daily disposal activities, the container shall be locked, preventing access by unauthorized personnel. Absorbent material will be applied around the bottom, if necessary, to pick up any water leakage that may occur. The container shall be properly labeled during loading and unloading.

E. ACM containing waste material shall not be stored outside the designated staging area without prior approval by the consultant. Bags from the work area shall be taken directly to the disposal container. Damaged bags or bags containing sharp materials that will puncture must be contained in rigid containers.

F. At completion of each ACM loadout operation, the decon walls and flooring shall be wet wiped to removal any visual debris. The material decon floor may need to cleaned periodically throughout the project.

G. Consultant will conduct air monitoring of disposal activities to confirm proper waste handling procedures.

2002.06 Transportation

A. The AAC's responsibility for maintaining and monitoring asbestos waste material in the disposal container terminates when the final asbestos waste hauler signs the waste

shipment record and transports the ACM material to a permanent burial site.

B. The AAC shall coordinate disposal activities after the asbestos waste material leaves the storage site and shall comply with current USEPA Asbestos NESHAP Regulation for all asbestos containing waste materials transported off-site.

C. Consultant may accompany the vehicle to the temporary staging area and/or landfill to assure and document proper transport and disposal.

2002.07 Landfill Documentation

All ACM waste shall be disposed in a landfill licensed to accept such waste. Waste hauler and landfill shall be included in bid submittal and approved by consultant prior to project commencement. The landfill shall be contacted by the AAC prior to bid submittal to verify they can accept quantity and type of material.

All asbestos waste, clean -up materials will be disposed of at:

Lemmons landfill
15250 old Bloomfield Rd
Dexter MO 63841
Midwest Environmental Studies will be the waste transporter
Asbestos waste will be transported in poly lined enclosed trailer.

A copy of the waste manifest signed by the land fill will be
Given to the building owner

My landfill approval # is 731Y16900.

SECTION 061000 - ROUGH CARPENTRY

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 SUMMARY

A. This Section includes the following:
1. Framing with dimension lumber.
2. Wood blocking, cants, and nailers.
3. Wood furring and grounds.
4. Unit Price A: Exterior Sheathing

1.3 DEFINITIONS

A. Rough Carpentry: Carpentry work not specified in other Sections and not exposed, unless otherwise indicated.

B. Exposed Framing: Dimension lumber not concealed by other construction.

C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
1. NELMA - Northeastern Lumber Manufacturers Association.
2. NLGA - National Lumber Grades Authority.
3. RIS - Redwood Inspection Service.
4. SPIB - Southern Pine Inspection Bureau.
5. WCLIB - West Coast Lumber Inspection Bureau.
6. WWPA - Western Wood Products Association.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.

2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.

3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

B. Material Certificates: 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 American Lumber Standards Committee Board of Review.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.

B. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.

C. Source Limitations for Fire-Retardant-Treated Wood: Obtain each type of fire-retardant-treated wood product through one source from a single producer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work.

2.2 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. Delete option in subparagraph below if authorities having jurisdiction require grade stamps on all materials.
   3. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
   4. Dressed sizes of green lumber are larger than dry lumber in DOC PS 20.
   5. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
   6. Revise first subparagraph below if rough lumber is acceptable for all work.
   7. Provide dressed lumber, S4S, unless otherwise indicated.
   8. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.
   9. Retain subparagraph above or below, or delete both if green lumber is acceptable. Verify availability of below. Lumber more than 2 inches nominal (38 mm actual) in thickness is typically shipped green. See Evaluations.
   10. Provide dry lumber with 15 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

2.3 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2 (lumber), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
   1. Preservative Chemicals: Acceptable to authorities having jurisdiction and the following:
      a. Chromated copper arsenate (CCA).
      b. Treatment below is often used to treat Douglas fir because it penetrates the heartwood of this species better than CCA does.
      c. Ammoniacal copper zinc arsenate (ACZA).
      d. Treatment below is available from Chemical Specialties. It is often used to treat Douglas fir because it penetrates the heartwood of this species better than CCA does.
      e. Ammoniacal, or amine, copper quat (ACQ).
      f. Treatment below is available from Kodiak.
      g. Copper bis (dimethyldithiocarbamate) (CDDC).
      h. Treatment below is available from Osmose Wood Preserving.
      i. Ammoniacal copper citrate (CC).
      j. Treatment below is available from Hickson Corporation.
      k. Copper azole, Type A (CBA-A).
      l. Treatment below is available from Hoover Treated Wood Products, is oil-borne rather than waterborne, is also a water repellent, and can be used in contact with agricultural food products.
      m. Oxine copper (copper-8-quinolinolate) in a light petroleum solvent.
   2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
   1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.

D. Application: Treat items indicated on Drawings, and 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. Retain applicable items below. Insert other items that require treatment but are not likely to be indicated on Drawings.
   3. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
   4. Wood framing members less than 18 inches above grade.

2.4 DIMENSION LUMBER

A. General: Provide dimension lumber of grades indicated according to the American Lumber Standards Committee National Grading Rule provisions of the grading agency indicated.

B. General: Provide lumber for support or attachment of other construction, including the following:
   1. Rooftop equipment bases and support curbs.
   2. Blocking.
   3. Cants.
   4. Nailers.

5. Furring.
6. Grounds.

2.5 PLYWOOD BACKING PANELS

A. Telephone and Electrical Equipment Backing Panels: DOC PS 1, Exposure 1, A-C in thickness indicated or, if not indicated, not less than 1/2 inch thick.

2.6 WOOD PANEL PRODUCTS, GENERAL

A. Plywood: DOC PS 1.

B. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.

C. Factory mark panels to indicate compliance with applicable standard.

2.7 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fastener with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails and Brads: ASTM F 1667.

C. Power-Driven Fasteners: CABO NER-272.

D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1. .

G. Bolts: Steel bolts complying with ASTM A 307, Grade A ; with ASTM A 563 hex nuts and, where indicated, flat washers.

H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
2. Subparagraph above and below are examples only. Above protects against corrosion in an indoor atmosphere; revise to suit other service conditions after verifying availability of thicker coatings.
3. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2 .

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

C. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood.

D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
   1. CABO NER-272 for power-driven fasteners.
   2. Published requirements of metal framing anchor manufacturer.
   3. See Editing Instruction No. 4 in the Evaluations. Retain one of four subparagraphs below, with or without subparagraphs above, as required to comply with requirements of Project and local codes.
   4. Table 23-II-B-1, "Nailing Schedule," and Table 23-II-B-2, "Wood Structural Panel Roof Sheathing Nailing Schedule," in the Uniform Building Code.
   5. Table 2305.2, "Fastening Schedule," in the BOCA National Building Code.
   6. Table 2306.1, "Fastening Schedule," in the Standard Building Code.
   7. Table 602.3(1), "Fastener Schedule for Structural Members," and Table 602.3(2), "Alternate Attachments," in the International One- and Two-Family Dwelling Code.

E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

END OF SECTION 061000

SECTION 072500 - WEATHER BARRIERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Weather Barrier Membrane
   2. Seam Tape
   3. Self-Adhered Flashing
   4. Weather Barrier Accessories - Fasteners

B. Related Requirements:

   1. Section 074646 "Fiber Cement Siding" for installation of siding and flashing system installation.

1.3 REFERENCES

A. ASTM International
   1. ASTM C920; Standard Specification for Elastomeric Joint Sealants
   2. ASTM C1193; Standard Guide for Use of Joint Sealants
   3. ASTM D882; Test Method for Tensile Properties of Thin Plastic Sheeting
   4. ASTM D1117; Standard Guide for Evaluating Non-woven Fabrics
   5. ASTM E84; Test Method for Surface Burning Characteristics of Building Materials
   6. ASTM E96; Test Method for Water Vapor Transmission of Materials
   7. ASTM E1677; Specification for Air Barrier Material or System for Low-Rise Framed Building Walls
   8. ASTM E2178; Test Method for Air Permeance of Building Materials

B. AATCC – American Association of Textile Chemists and Colorists
   1. Test Method 127 Water Resistance: Hydrostatic Pressure Test

C. TAPPI
   1. Test Method T-410; Grams of Paper and Paperboard (Weight per Unit Area)
   2. Test Method T-460; Air Resistance (Gurley Hill Method)

1.4 ACTION SUBMITTALS

A. Refer to Section 013300 Submittal Procedures.

B. Product Data: Submit manufacturer current technical literature for each component.

1. For weather barrier, include data on air and water-vapor permeance based on testing in accordance with referenced standards.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified firm that is certified by weather barrier system manufacturer to install manufacturer's product in accordance with manufacturer's installation guidelines and recommendations.

B. .Source Limitations: Provide weather barrier and accessory materials produced by single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver weather barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.

B. Store weather barrier materials as recommended by system manufacturer. Do not store near heat source or open flame.

1.7 WARRANTY

A. Manufacturer's Product Warranty: To repair or replace weather barrier product that fails in materials within specified warranty period when all terms of Warranty are met.

1. Warranty Period: 10 years from date of purchase.

B. Manufacturer's Product and Labor Warranty: Manufacturer agrees to repair or replace weather barrier that fails in materials within specified warranty period, including removal and replacement of affected construction up to manufacturer's limits when all terms of Warranty are met.

1. Warranty Period: 10 years from date of purchase.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:
   a. DuPont Performance Building Solutions; 200 Powder Mill Road, DuPont Experimental Station 356 Wilmington, Delaware 19803; 1-800-448-9835; building.dupont.com
   b. Henry Company, 336 Cold Stream Rd., Kimberton, PA 19460; 1-800-486-1278; www.henry.com
   c. W.R. Meadows; 5231 Front Street, Kansas City, MO 64120; 1-800-342-5976; www.wrmeadows.com

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Installed weather barrier and accessories shall withstand specified wind pressures, liquid water penetration, and water vapor pressures, without failure due to defective manufacture of products.

2.3 WEATHER BARRIER

A. Basis of Design: spunbonded polyolefin, non-woven, non-perforated, weather barrier and related assembly components.

B. Performance Characteristics:
1. Air Penetration Resistance: <0.004 cfm/ft^2 at 1.57 psf, when tested in accordance with ASTM E2178.
2. Type I Air Barrier Material when tested in accordance with ASTM E1677.
3. Type II Water Resistive Barrier when tested in accordance with ASTM E2556
4. Water Vapor Transmission: 56 perms, when tested in accordance with ASTM E96-05, Method A.
5. Water Penetration Resistance: 250 cm when tested in accordance with AATCC Test Method 127.
6. Basis Weight: 1.8 oz/yd^2, when tested in accordance with TAPPI Test Method T-410.
7. Air Resistance: 1200 seconds, when tested in accordance with TAPPI Test Method T-460.
8. Breaking Strength: 30/30 lbs/in., when tested in accordance with ASTM D882.
9. Tear Resistance: 8/6 lbs, when tested in accordance with ASTM D1117.
10. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E84. Flame Spread: 15, Smoke Developed: 15.

2.4 WEATHER BARRIER FLASHING

A. Conformable Weather Barrier Flashing: Composite flashing material composed of micro-creped, polyethylene laminate with a 100 percent butyl-based adhesive layer; AAMA 711 Class A (no primer), Level 3 thermal exposure, 176 deg F for 7 days.
1. Conformability: Able to create a seamless sill pan extending up the jambs without cuts, patches, or fasteners.
2. ASTM E 331 applies to water penetration testing of exterior windows, skylights, doors, and curtain walls.
3. Water Penetration: No leakage at 15 psf per ASTM E 331.
4. Low Temperature Adhesion: Exceeds minimum value of 1.5 lb./in. at 25 degrees F as Class A (without primer use).
5. Adhesion After Water Immersion: Exceeds minimum value of 1.5 lb./in., after AAMA 800, Sections 2.4.1.3.1/2.4.1.4.3, Test B.

B. Conformable Weather Barrier Flashing for Sealing Penetrations: Composite flashing material composed of micro-creped, polyethylene laminate with a 100 percent butyl-based adhesive layer; AAMA 711 Class A (no primer), Level 3 thermal exposure, 176 deg F for 7 days.
1. Conformability: Able to create a continuous watertight seal around penetrations from weather barrier to penetration without cuts, patches, or fasteners.

2. ASTM E 331 applies to water penetration testing of exterior windows, skylights, doors, and curtain walls.
3. Water Penetration: No leakage at 15 psf per ASTM E 331.
4. Low Temperature Adhesion: Exceeds minimum value of 1.5 lb./in. at 25 degrees F as Class A (without primer use).
5. Adhesion After Water Immersion: Exceeds minimum value of 1.5 lb./in. after AAMA 800, Sections 2.4.1.3.1/2.4.1.4.3, Test B.

C. Strip Flashing: Composite flashing material composed of spunbonded polyethylene laminate with 100 percent butyl-based, adhesive layer; AAMA 711, Class A (no primer), Level 3 thermal exposure, 176 deg F (80 deg C) for 7 days.
1. ASTM E 331 applies to water penetration testing of exterior windows, skylights, doors, and curtain walls.
2. Water Penetration: No leakage at 15 psf) per ASTM E 331.
3. Low Temperature Adhesion: Exceeds minimum value of 1.5 lb./in. at 25 deg F as Class A without primer use.
4. Adhesion After Water Immersion: Exceeds minimum value of 1.5 lb./in., after AAMA 800, Sections 2.4.1.3.1/2.4.1.4.3, Test B.

D. Strip Flashing: Composite flashing material composed of spunbonded polyethylene laminate with 100 percent butyl-based, dual-sided, adhesive layer; AAMA 711, Class A (no primer), Level 3 thermal exposure, 176 deg F for 7 days.
1. Basis-of-Design Product: Subject to compliance with requirements, ASTM E 331 applies to water penetration testing of exterior windows, skylights, doors, and curtain walls.
2. Water Penetration: No leakage at 6.24 psf (300 Pa) per ASTM E 331.
3. Low Temperature Adhesion: Exceeds minimum value of 1.5 lb./in. (0.26N/mm) at 25 deg F (minus 4 deg C) as Class A without primer use.
4. Adhesion After Water Immersion: Exceeds minimum value of 1.5 lb./in. (0.26N/mm), after AAMA 800, Sections 2.4.1.3.1/2.4.1.4.3, Test B.

E. Strip Flashing: Composite flashing material composed of polypropylene laminate with 100 percent butyl-based, adhesive layer; AAMA 711, Class A (no primer), Level 3 thermal exposure, 176 deg F for 7 days.
1. ASTM E 331 applies to water penetration testing of exterior windows, skylights, doors, and curtain walls.
2. Water Penetration: No leakage at 6.24 psf per ASTM E 331.
3. Low Temperature Adhesion: Exceeds minimum value of 1.5 lb./in. at 25 deg F as Class A without primer use.

2.5 WEATHER BARRIER ACCESSORIES

A. Building Wrap Seam Tape: 3 inch wide, Pressure-sensitive plastic tape recommended by weather barrier manufacturer for sealing joints and penetrations in building wrap.

B. Fasteners with Self-Gasketing Washers: Building wrap manufacturer's recommended pneumatically or hand-applied fasteners with 1-inch- diameter, high-density polyethylene cap washers with UV inhibitors.

C. Sealants

1. Provide sealants that comply with ASTM C 920, elastomeric polymer sealant to maintain watertight conditions.
    a. Sealants recommended by the weather barrier manufacturer

D. Insulating Foam Sealant: one component, expanding, low pressure-build, flexible polyurethane foam.

E. Primer for Flashings: Synthetic rubber-based product; spray applied. Strengthen adhesive bond at low temperature applications between weather products such as self-adhered flashing products, commercial building wraps, and common building sheathing materials.
1. Peel Adhesion Test: Passes in accordance with ASTM D 3330, Test Method F, for the following.
    a. Peel Angles: 0, 25, 72, and 180 degrees.
    b. Substrates: Concrete masonry units (CMU), exterior gypsum sheathing, oriented strand board (OSB), aluminum, and vinyl.
2. Chemical Compatibility: Pass; AAMA 713.
3. Flame Spread Index: 5; ASTM E 84.
4. Smoke Development Index: 0; ASTM E 84.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements.

B. Verify that substrate and surface conditions are in accordance with commercial weather barrier manufacturer recommendations prior to installation.

1. Verify that rough sill framing for doors and windows is sloped downwards towards the exterior and is level across width of the opening.

C. Verify that surfaces to receive weather barrier flashing are clean, dry, and free of frost.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Direct water onto an acceptable weather barrier drainage plane with an unobstructed path to exterior of wall.

1. Provide a drainage path for water intrusion through window and door attachment system that collects at window and door sills and directs water to the exterior or weather barrier.

3.3 WEATHER BARRIER INSTALLATION

A. General: Comply with weather barrier manufacturer's written instructions and warranty requirements.

B. Cover exposed exterior surface of sheathing with weather barrier securely fastened to structure per manufacturer's written instructions immediately after sheathing is installed.

1. Maintain continuity of air and water barrier assemblies.
2. Start weather barrier installation at a building corner, leaving 12 inches of weather barrier extended beyond corner to overlap.
3. Install weather barrier horizontally starting at lower portion of wall surface. Extend bottom roll edge over sill plate 1" minimum. For air barrier installations, seal weather barrier along bottom edge with sealant or tape. Shingle weather barrier over back edge of through-wall flashings and seal weather barrier with building wrap tape. Ensure weeps are not blocked.
4. Provide minimum 6 inches overlap at horizontal- and vertical-wrap seams in a shingle manner to maintain continuous downward drainage plane and air and water barrier.

C. Seams: Seal seams with building wrap tape per manufacturer's recommended installation instructions.

1. Shiplap horizontal seams in weather barrier to facilitate proper drainage.

D. Fasteners: Use weather barrier manufacturer's recommended fasteners to secure weather barrier and install fasteners according weather barrier manufacturer's installation guidelines.
1. Do not place fasteners with gasketing washers where weather barrier flashing will be installed.
2. Install fasteners with gasketing washers through flashing where recommended by manufacturer.

E. Openings: Completely cover openings with weather barrier, and then cut weather barrier membrane at openings according to weather barrier manufacturer's installation guidelines.
1. Provide head and jamb flaps and seam overlaps to maintain continuous drainage.
2. Repair damage to weather barrier using method recommended by weather barrier manufacturer.
3. Install flashing according to weather barrier manufacturer's installation guidelines.

3.4 WEATHER BARRIER FLASHING

A. Installation: Remove wrinkles and bubbles, reposition weather barrier as necessary to produce a uniform, smooth surface.

1. Ensure that ambient and substrate surface temperatures are acceptable in accordance with manufacturer instructions and recommendations.
2. Wipe surfaces to remove moisture, dirt, grease and other debris that could interfere with adhesion.
3. Apply weather barrier manufacturer's recommended primer over concrete, masonry, and glass-mat gypsum wall sheathing substrates to receive weather barrier flashing.
4. Lap weather barrier flashing a minimum of 2 inches onto weather barrier.
5. Apply pressure over entire surface using roller or firm hand pressure

B. Rough Openings: Shiplap flashing with weather barrier in a shingle manner to maintain a continuous downward drainage plane and air and water barrier in accordance with manufacturer's written instructions.

1. Apply 9-inch- wide conformable weather barrier flashing at door and window sills.
2. Ensure that sill flashing does not slope to the interior.
3. Install backer rod in joint between frame of opening product and flashed rough opening on the interior.
4. Apply sealant or closed-cell polyurethane foam insulation around entire opening/fenestration product to create air seal around interior perimeter of window openings in accordance with weather barrier manufacturer's instructions.
5. Around door and window openings, apply butyl-based flashing to flaps of weather barrier per manufacturer's instructions.
6. Seal building wrap head flap of the windows.

C. Penetrations: Seal weather barrier around each penetration with weather barrier manufacturer's recommended self-adhered flashing product. Integrate products with flanges into the weather barrier.

D. Terminations: Provide minimum 2 inches overlap using strip flashing on adjoining roof and base of wall systems to maintain continuous downward drainage plane.

1. Secure weather barrier with fasteners and weather-barrier flashing.

E. Flashing Patches: Apply weather barrier manufacturer's recommended weather barrier flashing patches behind fastening plates, such as brick-tie base plates, metal-flashing clips, and metal channels.

3.5 CLEANING

A. Immediately remove release paper and scrap from work area and dispose of material in accordance with requirements of Section 017300 Execution.

3.6 PROTECTION

A. Protect installed weather barrier from the following:
1. Damage from cladding, structure, or a component of the structure (e.g., window, door, or wall system).
2. Contamination from building site chemicals, premature deterioration of building materials, or nonstandard use or application of products.
3. Foreign objects or agents, including the use of materials incompatible with weather barrier products.
4. UV exposure in excess of products' stated limits.

END OF SECTION 072500

SECTION 074293 - SOFFIT PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes metal soffit panels.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.

B. Shop Drawings:

1. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
2. Accessories: Include details of flashing, trim, and anchorage systems, at a scale of not less than 1-1/2 inches per 12 inches (1:10).

C. Samples for Initial Selection: For each type of metal panel indicated with factory-applied color finishes.

1. Include similar Samples of trim and accessories involving color selection.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:

1. Metal Panels: 12 inches long by actual panel width. Include fasteners, closures, and other metal panel accessories.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

D. Retain strippable protective covering on metal panels during installation.

1.5 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal panels to be performed according to manufacturers' written instructions and warranty requirements.

1.6 COORDINATION

A. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of walls, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.7 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

    a. Structural failures including rupturing, cracking, or puncturing.
    b. Deterioration of metals and other materials beyond normal weathering.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Warranty on Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

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

    a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
    b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
    c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing according to ASTM E 1592:

1. Wind Loads: As indicated on Drawings.

2.2 METAL SOFFIT PANELS

A. General: Provide metal soffit panels designed to be installed by lapping and interconnecting side edges of adjacent panels and mechanically attaching through panel to supports using concealed fasteners in side laps.

B. Metal Soffit Panels:

C. V-Groove-Profile Metal Soffit Panels: vented and non-vented panels formed with vertical panel edges and intermediate stiffening ribs symmetrically spaced between panel edges; with a V-groove joint between panels.

1. Aluminum Sheet: Coil-coated sheet, ASTM B 209 alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.

a. Thickness: 0.032 inch
b. Surface: Smooth finish.
c. Color: To be selected from manufacturer’s selection.

2. Panel Coverage: 16 inches
3. Panel Height: 0.50 inch.

2.3 MISCELLANEOUS MATERIALS

A. Panel Accessories: Provide components required for a complete, weathertight panel system including trim, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.

B. Flashing and Trim: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Finish flashing and trim with same finish system as adjacent metal panels.

C. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.

D. Panel Sealants: Provide sealant types recommended by manufacturer that are compatible with panel materials, are nonstaining, and do not damage panel finish.

2.4 FABRICATION

A. General: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.

D. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

2.5 FINISHES

A. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

C. Aluminum Panels and Accessories:

1. PVC coated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel supports, and other conditions affecting performance of the Work.

1. Examine framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal panel manufacturer.

2. Examine sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal panel manufacturer.

    a. Verify that air- or water-resistive barriers been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Examine roughing-in for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C 754 and metal panel manufacturer's written recommendations.

3.3 METAL PANEL INSTALLATION

A. General: Install metal panels according to manufacturer's written instructions in orientation, sizes, and locations indicated. Install panels perpendicular to supports unless otherwise indicated. Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Shim or otherwise plumb substrates receiving metal panels.
2. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not begin installation until air- or water-resistive barriers and flashings that will be concealed by metal panels are installed.
3. Install screw fasteners in predrilled holes.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Install flashing and trim as metal panel work proceeds.
6. Locate panel splices over, but not attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
7. Provide weathertight escutcheons for pipe- and conduit-penetrating panels.

B. Fasteners:
1. Aluminum Panels: Use aluminum or stainless-steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized-steel fasteners for surfaces exposed to the interior.
2. .Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal panel manufacturer.

C. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.

1. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.

2. Install exposed flashing and trim that is without buckling, and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to achieve waterproof performance.
3. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection.

3.4 CLEANING AND PROTECTION

A. Remove temporary protective coverings and strippable films, if any, as metal panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

B. After metal panel installation, clear weep holes and drainage channels of obstructions, dirt, and sealant.

C. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 074293

SECTION 074646 – FIBER CEMENT SIDING

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Fiber cement lap siding, panels, shingle, trim, fascia, moulding and accessories;

B. Factory-finished fiber cement lap siding, panels, shingle, trim, fascia, moulding and accessories.

1.2 RELATED SECTIONS

A. Section 06100 - Rough Carpentry: Wood framing and bracing.

1.3 REFERENCES

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

B. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.

C. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.4 SUBMITTALS

A. Submit under provisions of Section 013000.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

A. Installer Qualifications:Minimum of 2 years experience with installation of similar products.

B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish areas designated by Architect.
   2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
   3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.

C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

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

1.8 WARRANTY

A. Product Warranty: Limited, non-pro-rated product warranty.
   1. 30 years.

B. Product Warranty: Limited, product warranty.
   1. 15 years.

C. Finish Warranty: Limited product warranty against manufacturing finish defects.
   1. 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.

D. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:

1. James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: request info (info@jameshardie.com); Web: www.jameshardiecommercial.com

2. Allura; 396 W. Greens Road, Suite 300, Houston Texas, 77067; 844-525-5872; Web: www.allurausa.com

3. Nichiha; 6465 E. Johns Crossing, Suite 250, Johns Creek, GA, 30097; Tel: 800-424-4421; Web: www.nichiha.com

2.2 SIDING

A. Lap Siding: Lap siding with a sloped top, beveled drip edge and nailing line.
   1. Type: Smooth 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
   2. Type: Select Cedarmill 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.

2.3 FASTENERS

A. Wood Framing Fasteners:
   1. Wood Framing: 8d box ring common corrosion resistant nails.

2.4 FINISHES

A. Factory Primer: Provide factory applied universal primer.
   1. Primer: Factory finished

B. Factory Finish: A/E select siding colors 1 and 2 from Manufacturers' available color palette.
   1. Definition: Factory applied finish; defined as a finish applied in the same facility and company that manufactures the siding substrate.
   2. Process:
      a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.
      b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photospectrometer and verified by third party.
   3. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed
   4. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.

C. Factory Finish Color for Trim, Soffit and Siding Colors:

   Select siding colors 1 and 2 as well as trim and soffits from Manufacturers' available color palette.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Nominal 2 inch by 4 inch (51 m by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
   1. Install water-resistive barriers and claddings to dry surfaces.
   2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
   3. Protect siding from other trades.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Install a water-resistive barrier is required in accordance with local building code requirements.

D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.

E. Install Engineered weather barrier in accordance with local building code requirements.

F. Use Seam Tape and joint and laps.

G. Install Flex Flashing as recommended by manufacturer.

3.3 INSTALLATION -

A. Install materials in strict accordance with manufacturer's installation instructions.

B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.

C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.

D. Align vertical joints of the planks over framing members.

E. Maintain clearance between siding and adjacent finished grade.

F. Locate splices at least one stud cavity away from window and door openings.

G. Wind Resistance: Where a specified level of wind resistance is required, lap siding is installed to framing members and secured with fasteners described in Table No. 2 in National Evaluation Service Report No. NER-405.

H. Locate splices at least 12 inches (305 mm) away from window and door openings.

3.4 INSTALLATION

A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.

B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.

C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.

D. Maintain clearance between trim and adjacent finished grade.

E. Trim inside corner with a single board trim both side of corner.

F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.

G. Allow 1/8 inch gap between trim and siding.

H. Seal gap with high quality, paint-able caulk.

I. Shim frieze board as required to align with corner trim..

J. Fasten through overlapping boards. Do not nail between lap joints.

K. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board.

L. Shim frieze board as required to align with corner trim.

M. Install Fascia boards to rafter tails or to sub fascia.

3.5 FINISHING

A. Finish unprimed siding with a minimum one coat high quality, alkali resistant primer and one coat of either, 100 percent acrylic or latex or oil based, exterior grade topcoats or two coats high quality alkali resistant 100 percent acrylic or latex, exterior grade topcoat within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

B. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

3.6 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

END OF SECTION 074646

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes sheet metal flashing and trim in the following categories:
   1. Wall and Roof Flashing systems.

1.2 PERFORMANCE REQUIREMENTS

A. Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experience Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

1.4 PROJECT CONDITIONS

A. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation. Ensure best possible weather resistance, durability of Work, and protection of materials and finishes.

PART 2 - PRODUCTS

2.1 METALS

A. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, not less than 0.032 inch thick; and finished as follows:

   1. Finish: Manufacturer's standard epoxy primer and silicone-modified, polyester-enamel topcoat.

   2. Concealed Finish: Manufacturer's standard white or light-colored acrylic or polyester backer finish.

B. Metallic-Coated Steel Sheet: Galvanized structural-steel sheet, ASTM A 653/A 653M, G90 , or aluminum-zinc alloy-coated structural-steel sheet, ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40, 24 gauge.

   1. Finish: Manufacturer's standard epoxy primer and silicone-modified, polyester-enamel topcoat.

   2. Concealed Finish: Manufacturer's standard white or light-colored acrylic or polyester backer finish.

2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.

B. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coat.

C. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.

D. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for elastomeric joint sealants as specified in ASTM C 920.

E. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.

F. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.

G. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based.

H. Splash Blocks: Commercially available precast concrete blocks having configuration appropriate to control drainage.

2.3 FABRICATION, GENERAL

A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

C. Form exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.

D. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

E. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

F. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

G. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.

H. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.

1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

2.4 SHEET METAL FABRICATIONS

A. Base Flashing: Fabricate from the following material:

1. Galvanized Steel: 0.0276 inch thick.

B. Counterflashing: Fabricate from the following material:

1. Galvanized Steel: 0.0217 inch thick.

C. Flashing Receivers: Fabricate from the following material:

1. Galvanized Steel: 0.0217 inch thick.

D. Drip Edges: Fabricate from the following material:

1. Galvanized Steel: 0.0217 inch thick.

E. Equipment Support Flashing: Fabricate from the following material:

1. Galvanized Steel: 0.0276 inch thick.

F. Roof-Penetration Flashing: Fabricate from the following material:

1. Lead: 4.0 lb/sq. ft., hard tempered.

2. Galvanized Steel: 0.0276 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and

set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.

B. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

C. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

D. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches, except where pretinned surface would show in finished Work.

1. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

E. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.

1. Use joint adhesive for nonmoving joints specified not to be soldered.

F. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Counterflashing: Coordinate installation of counterflashing with installation of assemblies to be protected by counterflashing. Install counterflashing in reglets or receivers. Secure in a waterproof manner by means of snap-in installation and sealant, lead wedges and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflashing joints a minimum of 2 inches and bed with sealant.

H. Roof-Drainage System: Install drainage items fabricated from sheet metal, with straps, adhesives, and anchors recommended by SMACNA's Manual or the item manufacturer, to drain roof in the most efficient manner. Coordinate roof-drain flashing installation with roof-drainage system installation. Coordinate flashing and sheet metal items with roofing installation.

I. Equipment Support Flashing: Coordinate equipment support flashing installation with roofing and equipment installation. Weld or seal flashing to equipment support member.

J. Roof-Penetration Flashing: Coordinate roof-penetration flashing installation with roofing and installation of items penetrating roof. Install flashing as follows:

1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.

2. Seal and clamp flashing to pipes penetrating roof, other than lead flashing on vent piping.

K. Splash Blocks: Install where downspouts discharge at location indicated. Where placed on roofing, set in roof cement compatible with roofing membrane.

3.3 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals:

1. Product Data

2. Color Samples.

B. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40 deg F

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.

B. Sealant for Use in Building Expansion Joints:

1. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses T, M, and O, with the additional capability to withstand 50 percent movement in both extension and compression for a total of 100 percent movement.

C. Sealant for General Exterior Use Where Another Type Is Not Specified[, One of the Following:
1. Single-component, nonsag polysulfide sealant, ASTM C 920, Type S; Grade NS; Class 12-1/2; Uses NT, M, G, A, and O.
2. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses T, NT, M, G, A, and O.
3. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and Uses NT, M, A, and O.

D. Sealant for Exterior Traffic-Bearing Joints, Where Slope Precludes Use of Pourable Sealant:
1. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses T, NT, M, G, A, and O.

E. Sealant for Exterior Traffic-Bearing Joints, Where Slope Allows Use of Pourable Sealant:
1. Single-component, pourable urethane sealant, ASTM C 920, Type S; Grade P; Class 25; Uses T, M, G, A, and O.

F. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and Around Plumbing Fixtures:

1. Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; Uses NT, G, A, and O; formulated with fungicide.

G. Sealant for Interior Use at Perimeters of Door and Window Frames:
1. Latex sealant, single-component, nonsag, mildew-resistant, paintable, acrylic-emulsion sealant complying with ASTM C 834.

H. Acoustical Sealant for Exposed Interior Joints:
1. Nonsag, paintable, nonstaining, latex sealant complying with ASTM C 834.

2.2 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer.

B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 1193.

B. Comply with ASTM C 919 for use of joint sealants in acoustical applications.

END OF SECTION 079200

SECTION 096200 SEAMLESS RESINOUS FLOORING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Furnish necessary material, labor, and equipment required to prepare designated areas and install a 3/16" Colored Quartz Decorative Troweled Mortar System.

1.2 RELATED WORK

1. Drawings and general provisions of contract including General and Special Conditions and Division I, excepting special Submittal and Quality Assurance provisions in this section.

1.3 QUALITY ASSURANCE

A. Manufacturer's Qualifications
1. Obtain 3/16" Colored Quartz Decorative Troweled Mortar System materials from a single manufacturer with a minimum of 12 years verifiable experience providing materials of the type specified in this section.

B. B. Contractor's Qualifications
1. Installation must be performed by a manufacturer certified contractor with skilled mechanics having not less than three (3) years satisfactory experience in the installation of the type of system as specified in this section, and must be certified in writing by the manufacturer of the 3/16" Colored Quartz Decorative Troweled Mortar System.

C. C. Floor System Thickness Verification
1. At the owner's discretion and under his supervision the contractor shall take 1" random cores per 1,000 sq. ft. through the system into the substrate to verify proper system thickness. Cored areas less than specified thickness shall be removed and replaced or increased in thickness by the installing contractor, in a manner that does not affect the performance or integrity of the system. Cored areas which comply with the recommended system thickness shall be built-up to match the surrounding surface elevation prior to applying the seal coat(s). Cores taken and patched will be noticeable; therefore, cores should be taken from areas where aesthetics are less critical. Cost associate with repair of cored areas that comply with specification thickness are the responsibility of the owner.

1.4 WARRANTY

A. The contractor and the manufacturer shall furnish a standard guarantee of the 3/16" Colored Quartz Decorative Troweled Mortar System for a period of one year after installation. The labor

and material guarantee shall include loss of bond and wear-through to the concrete substrate from normal use.

B. Not included in the warranty are damage due to structural design deficiencies including but not limited to slab cracking from lateral, vertical or rotational movement, and gouging or other damage due to fork lifts, other equipment, delamination caused by vapor transmission, Acts of God, or other elements beyond the scope of protection of this system nor causes not related to the system materials. In case of a warranty claim, the owner will notify the manufacturer and contractor in writing within 30 days of the first appearance of problems covered under this warranty. The owner will provide free and unencumbered access to the area during normal working hours for warranty rework. Property protection is also the owner's responsibility. Remedy is limited to direct repair of the 3/16" Colored Quartz Decorative Troweled Mortar System.

1.5 SUBMITTAL

A. System Data
   1. Submit manufacturer's specifications on cured system and individual components of the the 3/16" Colored Quartz Decorative Troweled Mortar System, including physical properties and performance properties and tests described in part 2.01 B .

B. The contractor shall submit a 6" x 6" cured system sample which the contractor has made for verification purposes and finish texture approval.

1.6 MATERIAL DELIVERY, HANDLING AND STORAGE

A. Primary system materials shall be delivered in the manufacturer's undamaged, unopened containers. Each container shall be clearly marked with the following:
   1. Product name(s) and/or Number(s)
   2. Manufacturer's name
   3. Component designation (A, B, etc.)
   4. Product Mix Ratio
   5. Health and Safety Information
   6. CHEMTREC Emergency Response Information

B. Provide equipment and personnel to handle the materials by methods which prevent damage.

C. The contractor shall promptly inspect direct jobsite material deliveries to assure that quantities are correct, comply with requirements and are not damaged.

D. The contractor shall be responsible for materials furnished by him, and he shall replace, at his own expense, such materials that are found to be defective in manufacture or that have become damaged in transit, handling or storage.

E. Store material(s) in accordance with manufacturer's instructions, with seals and labels intact and legible. Maintain temperatures within the required range. Do not use materials which exceed the manufacturer's maximum recommended shelf life.

1.7 JOB CONDITIONS

A. The contractor shall visit the jobsite prior to the installation of the 3/16" Colored Quartz Decorative Troweled Mortar System to evaluate substrate condition, including substrate moisture transmission, quantity and severity of cracking, and the extent of repairs needed. Substrate imperfections should be repaired only after mechanical preparation of the substrate. Surface preparation reveals most imperfections requiring repair. Concrete substrates shall be tested to verify that the moisture vapor transmission of the substrate does not exceed the 3/16" Colored Quartz Decorative Troweled Mortar System manufacturers' recommendations. Cost associated with repair, leveling and remediation of the substrate are the responsibility of the provider of the substrate.

B. The contractor should exercise care during surface preparation and system installation to protect surrounding substrates and surfaces, as well as in-place equipment. The contractor shall prepare the substrate to remove laitance and open the surface. This shall be achieved by light brush grit blasting. Surface profile achieved shall be similar to medium grit sandpaper and free from bond-inhibiting contaminants. Costs incurred that are associated with damage from negligence or inadequate protection shall be the sole responsibility of the contractor.

C. Sub floor tolerances are specified in accordance with ACI 302. Each drain in the installation area must be working and raised or lowered to the actual finished elevation of the 3/16" Colored Quartz Decorative Troweled Mortar System.

D. System must be protected by the General Contractor or, as a separate bid item, by the installing contractor until it is inspected and turned over to the owner.

E. The minimum slab temperature must be conditioned to 60 degrees F before commencing installation, during installation, and for at least 72 hours after installation is complete. The substrate temperature must be at least 5 degrees F above the dew point during installation.

F. Maintain lighting at a minimum uniform level of 50 or more foot candles in areas where the 3/16" Colored Quartz Decorative Troweled Mortar System is being installed. It is the recommendation of the manufacturer that the permanent lighting be in place and working during the installation.

G. Leaks from pipes and other sources must be corrected prior to the installation of the 3/16" Colored Quartz Decorative Troweled Mortar System.

PART 2 - PRODUCTS

2.1 MATERIALS

A. System Overview
   1. The 3/16" Colored Quartz Decorative Troweled Mortar System consists of 3579 Standard Primer / Binder as primer, 3561 Epoxy Resin Glaze as the binder resin, 5900C (Coarse) ESTES Ceramic Granules, 3745 Self-Leveling Epoxy Grout as the grout and 4409 WB Polyurethane Satin as seal coat

B. Typical Physical Properties @ 73°F (unless otherwise noted).

1. Typical Physical Properties
2. Color Standard Pre-Blended Colors
3. Custom color matching available upon request
4. Hardness, @ 24 hours, Shore D
5. ASTM D 2240 85/65
6. Compressive strength
7. ASTM C 579 11,000 psi
8. Tensile Strength
9. ASTM C 307
10. ASTM D 638 2,500 psi
11. 6,000 psi
12. Flexural Strength
13. ASTM C 580 4,500 psi
14. Adhesion
15. ACI 503R 350 psi
16. 100% Concrete Failure
17. Abrasion Resistance
18. ASTM D 4060, CS-Wheel,
19. 1,000 cycles 100 mgs lost
20. Flammability
21. Self-extinguishing
22. over concrete
23. ASTM C = Mortar system
24. ASTM D = Resin only

PART 3 - EXECUTION

3.1 Surface Preparation

A. For thorough instructions regarding preparation of concrete substrates consult "Instruction for Concrete Surface Preparation" (Form G-1).

B. Installation

1. General: Apply each component of the 3/16" Colored Quartz Decorative Troweled Mortar System in compliance with manufacturer's written installation instructions and strictly adhere to
   mixing and installation methods, recoat windows, cure times and environmental restrictions. The 3/16" Colored Quartz Decorative Troweled Mortar System is to be installed directly over non-moving control joints and cracks which have been treated with EPO-FLEX epoxy, and the 3/16" Colored Quartz Decorative Troweled Mortar System will terminate at the edge of isolation and expansion joints as designated by the Architect, Engineer or Design Professional. Integral cove base shall be installed where specified in the drawings.
2. Cracks: After preparation, evaluation of quantity and severity of cracks in concrete will determine the needed repairs. Original bid assumes repair and treatment of 20 linear feet of cracks and control joints. Additional treatment is considered excessive and must be bid on a per linear foot basis. For information pertaining to the treatment of cracks in concrete substrates, consult Manufacturer’s publication, Concrete 102.

C. Control Joints
   1. Original bid assumes repair and treatment of 10 linear feet of cracks and control joints. Additional treatment is considered excessive and must be bid on a per linear foot basis. For information pertaining to the treatment of control joints in concrete substrates, consult Manufacturer's publication, Concrete 103.

D. Isolation/Expansion and Other Joints Subject to Movement
   1. All expansion joints must be honored through the flooring system. For information pertaining to the above, consult Manufacturer's publication, Concrete 105.

E. System Primer: 3579 Standard Primer / Binder

F. Decorative Mortar: 3561 Epoxy Resin Glaze, 5900C (Coarse) Estes Ceramic Granules

G. Grout Coat: 3745 Self-Leveling Epoxy Grout

H. Seal Coat, 4409 WB Polyurethane Satin as seal coat

3.2 Curing, Cleaning and Protection

A. Cure the 3/16" Colored Quartz Decorative Troweled Mortar System materials in compliance with manufacturer's directions, taking care to prevent contamination during stages of the installation and prior to completion of the curing process.

B. Protect the 3/16" Colored Quartz Decorative Troweled Mortar System from damage and wear during other phases of the construction operation, using temporary coverings as recommended by the manufacturer, if required. Remove temporary covering just prior to final inspection.

C. Clean the 3/16" Colored Quartz Decorative Troweled Mortar System just prior to final inspection, using materials and procedures suitable to the system manufacturer.

D. Some cleaners will affect the color, gloss or texture of your polymer floor surfaces. To determine how your cleaner will perform, first test each cleaner, in a small area, utilizing your cleaning technique. This precaution will demonstrate the effect of your cleaner and technique. If no deleterious effects are observed, continue with the procedure. If deleterious effects do occur, modify the cleaning material and/or procedure. For recommendations regarding types of cleaners, contact the 3/16" Colored Quartz

END OF SPECIFICATION

SECTION 096513 - RESILIENT WALL BASE AND ACCESSORIES

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 SUMMARY

A. This Section includes the following:
   1. Wall base.
   2. Molding accessories.

1.3 SUBMITTALS

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

B. Samples for Verification: For each type of product indicated, in manufacturer's standard-size Samples but not less than 12 inches long, of each resilient product color, texture, and pattern required.

1.4 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Furnish not less than 10 linear feet for every 500 linear feet or fraction thereof, of each type, color, pattern, and size of resilient product installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 RESILIENT WALL BASE

A. Wall Base: ASTM F 1861.
   1. Armstrong World Industries, Inc.;
   2. Azrock Commercial Flooring, DOMCO;
   3. Burke Mercer Flooring Products;
   4. Endura;
   5. Mondo Rubber International, Inc.;
   6. Roppe Corporation;

B. Type (Material Requirement): TS (rubber, vulcanized thermoset) or TP (rubber, thermoplastic).

C. Style: Cove.

D. Height: 4 inches.

E. Lengths: Coils in manufacturer's standard length.

F. Outside Corners: Job formed or pre-molded.

G. Inside Corners: Job formed or pre-molded.

H. Surface: Smooth.

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic cement based formulation provided or approved by resilient product manufacturers for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products.

B. Concrete Substrates for Stair Accessories: Prepare according to ASTM F 710.
   1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.

C. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

D. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.

3.2 RESILIENT WALL BASE INSTALLATION

A. Apply wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

B. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

C. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

D. Do not stretch wall base during installation.

E. On masonry surfaces or other similar irregular substrates, fill voids along top edge of wall base with manufacturer's recommended adhesive filler material.

F. Job-Formed Corners:
   1. Outside Corners: Use straight pieces of maximum lengths possible. Form without producing discoloration (whitening) at bends. Shave back of base at points where bends occur and remove strips perpendicular to length of base that are only deep enough to produce a snug fit without removing more than half the wall base thickness.
   2. Inside Corners: Use straight pieces of maximum lengths possible. Form by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce a snug fit to substrate.

END OF SECTION 096513

SECTION 096519 - RESILIENT FLOOR TILE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Vinyl composition tile (VCT-1).
   2. Rubber flooring tile (Sport Mat Flooring)

1.2 SUBMITTALS

A. Product Data: For each product indicated.

1.3 PROJECT CONDITIONS

A. Maintain temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F , in spaces to receive floor tile during the following time periods:

   1. 48 hours before installation.
   2. During installation.
   3. 48 hours after installation.

B. After post-installation period, maintain temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.

C. Close spaces to traffic during floor covering installation.

D. Close spaces to traffic for 48 hours after floor covering installation.

E. Install resilient products after other finishing operations, including painting, have been completed.

1.4 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

   1. Floor Tile: Furnish 1 box for every 50 boxes or fraction thereof, of each type, color, and pattern of floor tile installed.

PART 2 - PRODUCTS

2.1 VINYL COMPOSITION TILE

A. Vinyl Composition Tile (VCT-1): ASTM F 1066.

B. Color and Pattern: One color, (match existing building).

C. Class: 3 (surface-pattern tile).

D. Wearing Surface: Smooth.

E. Thickness: 0.125 inch.

F. Size: 12 by 12 inches.

G. Fire-Test-Response Characteristics:

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm per ASTM E 648.

2.2 RESILIENT/RECYCLED RUBBER FLOORING TILES

A. Material shall be a non-vulcanized, non-laminated tile product with homogeneous color, composed of post-consumer recycled SBR (styrene butadiene rubber) combined with low odor EPDM (ethylene propylene diene monomer) rubber granules, bound with a proprietary slow-cured MDI water-based polymer. (Essential for superior elasticity and long term durability.)

B. All tiles shall be produced in block form (not cut from rolled material) sliced and precision cut using computerized numerically controlled (CNC) water-based equipment. Thickness tolerance is a maximum of +/- 0.5mm. (Interlocking tiles must be fully reversible.)

C. All Recycled Rubber Tiles shall be FloorScore(R) certified under the criteria developed by the Resilient Floor Covering Institute (RFCI) and certified by Scientific Certification Systems (SCS), Inc. Registration # SCS-FS-02144. (Dinoflex Group LP)

D. Edge finish and product size shall be Square (38” x 38”)

E. Thickness shall be 8mm

F. Color(s) of speckle shall be chosen from manufacturers list of colors.

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic cement based formulation provided or approved by resilient product manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

C. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of tiles, and in maximum available lengths to minimize running joints.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products.

B. Concrete Substrates: Prepare according to ASTM F 710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
3. Moisture Testing:

    a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
    b. Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.

C. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

D. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.

E. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

1. Do not install resilient products until they are same temperature as space where they are to be installed.

F. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FLOOR TILE INSTALLATION

A. Lay out 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.

B. Match 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.

1. Lay tiles with grain direction alternating in adjacent tiles (basket-weave pattern.

C. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.

D. Extend tiles into toe spaces, door reveals, closets, and similar openings.

E. 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, nonstaining marking device.

F. Install tiles on covers for telephone and electrical ducts and similar items in finished floor areas. Maintain overall continuity of color and pattern with pieces of tile installed on covers. Tightly adhere tile edges to substrates that abut covers and to cover perimeters.

G. Adhere tiles to flooring 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.

H. Perform the following operations immediately after completing resilient product installation:

1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum surfaces thoroughly.
3. Damp-mop surfaces to remove marks and soil.

a. Do not wash surfaces until after time period recommended by manufacturer.

I. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

END OF SECTION 096519

SECTION 096560 Resilient Athletic Flooring

Part 1-GENERAL

1.01 DESCRIPTION

A. Scope

1. The complete installation of polyurethane surfacing over high-performance resilient base mat, including adhesives, resilient base mat, polyurethane sealer, polyurethane structure layer, surface topcoat, and court markings.

1.02 QUALITY ASSURANCE

A. Floor System Supplier Qualifications

1. Supplier shall be an established firm experienced in field and have been in business for a minimum of ten (10) years.
2. Formulator shall be ISO-9001 certified for quality control and provide copy of Certification document upon request.

B. Floor Contractor/Installer Qualifications and Certifications

1. Floor Contracting Company and field personnel shall be trained by supplier on proper installation and finishing process.

C. System Technical Data:

Technical Data			
Character	Point-elastic		
Classification	P1		EN 14904
Nominal thickness	11 mm	(0.4331 inches)	
Shock Absorption	28%		EN 14808
Shock Absorption (DIN)	(35%)		(DIN 18032-91)
Vertical Deformation	1.4 mm		EN 14809
Linear Friction (dry)	98		EN 13036-4
Linear Friction (damp)	0.3		Leroux
Ball Bounce	98 %		EN 12235
Gloss	3%		EN 2813
Resistance to rolling load	≥1500 N		EN 1569
Resistance to impact	≥800 gr @ 10°C		EN 1517
	≥1200 gr @ 17°C		EN 1517
Resistance to indentation	0.35 mm @ 5 min		EN 1516
	0.15 mm @ 24 hrs		EN 1516
Resistance to wear	150 mg		EN ISO 2813
Flammability	Bfl-S1		EN 13501-1
V.O.C. content - Adhesive	Solvent free		
V.O.C. content - Topcoat	0.01 gr/lit (EU)		2004/42/EG
	45 gr/lit (US)		ASTM D 3960
Adhesive composition	Free of solvents and heavy metals		
Resin composition	Free of solvents and heavy metals		
Elongation at break - Structure	150%		DIN 53455
Tensile Strength - Structure	8 N/mm2	(1,160 psi)	DIN 53455
Tear Strength - Structure	25 N/mm	(142 pli)	DIN 53455
Color fastness	8 (excellent)		DIN 54004

1.03 SUBMITTALS

A. Manufacturer's Product Data
   1. Submit three (3) Floor System specification sheets.
B. Concrete Guidelines
   1. Submit three (3) copies of Recommendations for correct preparation, finishing and testing of concrete subfloor surfaces to receive granulated base mat and polyurethane floor system.
C. Samples
   1. Submit one (1) sample material
   2. Submit one (1) Topcoat Standard Color Chart
   3. Submit one (1) Linepaint Color Chart
D. Maintenance Literature
   1. Submit copy of Maintenance Instructions.

1.04 DELIVERY, STORAGE AND HANDLING

A. Delivery of Materials
   1. Material shall not be delivered or installed until all masonry, painting, plastering, tile work, marble and terrazzo work are completed and all overhead mechanical work, lighting, backstops, scoreboards are installed. Room temperature shall be at least 55 degrees Fahrenheit, and ambient relative humidity shall be 80% or less. Moisture content of concrete substrate must be <5% by mass as measured with a Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate is >5% by mass as measured with Tramex® CME/CMExpert type are exceeded, optional moisture mitigation systems or moisture tolerant primer can be applied.
   2. Area where materials are to be stored should be maintained at least 55 degrees Fahrenheit and under 75% relative humidity by the General Contractor.

1.05 JOB CONDITIONS-SEQUENCY

A. Do not install floor system until concrete has been tested for moisture vapor emissions and PH testing.
B. General Contractor is responsible to ensure slab is clean and free of all dirt and debris prior to floor installation beginning.
C. Permanent heat, light and ventilation shall be installed and operating during and after installation. Environmental temperatures must average a minimum of 65 degrees Fahrenheit for one full week proceeding, throughout, and 72 hours following application.
D. After floors are finished, area to be kept locked by general contractor to allow curing time for the paint and finish system(s). No other trades are to be allowed on floor until it is accepted in writing by owner or owner's authorized agent.

1.06 GUARANTEE

A. Guarantee shall not cover damage caused in whole or in part by casualty, ordinary wear and tear, abuse, use for which material is not designed, faulty construction of the building, settlement of the building walls, failure of the other contractors to adhere to specifications, separation of the concrete slab and excessive dryness or excessive moisture from humidity, spillage, migration through the slab or wall, or any other source.
B. Free from manufacturing defects for a period of 25 years. This warranty is in lieu of all other warranties, expressed or implied including but not limited to any warranty of merchantability or fitness for a particular purpose, and of any other obligations on the part of the manufacturer.

Part 2-PRODUCTS

2.01 MATERIALS

NOTE: USE OF ANY NON-APPROVED COMPONENT SUBSTITUTIONS SHALL VOID WARRANTY.

A. Acceptable Manufacturers:
   a. Robbins Sports Surfaces, Pulastic Classic 110, 4777 Eastern Ave. Cincinnati, OH 45226, 800-543-1913
   b. Champion Flooring, Monoflex 9+2, 1820 E. 27th Terrace, PO Box 1174, Pittsburg, KS 66762, 651-437-8813.
   c. Connor Sports, Elastiplus, 750 Veterans Parkway, Bolingbrook, IL 60440, 800-283-9522

2. BASIS OF DESIGN: Pulastic Classic 110; ALL SUBSTITUTIONS OTHER THAN ACCEPTABLE MANUFACTURERS LISTED REQUIRE PRE-BID APPROVAL.

3. Adhesive
   a. Pulastic Tacly Adhesive: a two-component polyurethane adhesive
4. Shock Pad
   a. Shock Pad, a granulated rubber/polyurethane mat 9mm thick.
5. Pad Sealer
   a. Pulastic EG Sealer: a two-component polyurethane sealer
6. Polyurethane Resin
   a. Pulastic GM1500 Compound: a pigmented two-component polyurethane resin
7. Coating
   a. Pulastic Coating 221W: a pigmented, two-component, water-dispersed polyurethane surface coating.
      1) Color Options: **Topcoat to be selected by owner.**
8. Game line Paint
   a. Pulastic Linepaint: a pigmented, two-component polyurethane paint.
      1) Color Options: **Court Marking to be selected by owner.**
   b. **Option:** Pulastic Linepaint-W: a pigmented, two-component, water-dispersed polyurethane paint.
   c. **Note:** All court markings to be included in Base Bid, not with this Alternate.

Part 3-EXECUTION

3.01 INSPECTION

A. Inspect concrete slab for proper levelness tolerance, dryness, and possible contamination and report any discrepancies to the general contractor and architect in writing.
B. All work required to put the concrete subfloors in acceptable condition shall be the responsibility of the general contractor.
C. Subfloor shall be broom cleaned by general contractor.
D. General Contractor will notify the flooring installation company to proceed with the installation after concrete slab specifications are met.
E. Installer shall perform tests for moisture and adhesion prior to application and report adverse conditions to the general contractor in writing.
F. Installer shall document all working conditions provided in General Specifications prior to commencement of installation.

3.02 INSTALLATION

A. Robbins Pulastic
   1. Shock Pad
      a. Mix two-component Tacly Adhesive according to supplier's instructions and spread adhesive using ROBBINS PULASTIC notched trowel.

   b. Unroll polyurethane/rubber granulated base mat into freshly applied adhesive. Seams shall be in virtual contact with absence of compression fit. Roll surface of base mat with a medium-size roller.
2. Sealer
   a. Mix two-component EG Sealer according to supplier's instructions and spread sealer over base mat using a straight trowel. Allow to cure minimum 12 hours before proceeding.
3. Structure Layer
   a. Mix two-component ROBBINS PULASTIC GM1500 pigmented polyurethane resin and spread over EG Sealer according to supplier's instructions. Allow to cure minimum 12 hours before proceeding.
   b. Mix two-component ROBBINS PULASTIC GM1500 pigmented polyurethane resin and apply at proper thickness according to supplier's instructions. Allow to cure minimum 12 hours before proceeding.
4. TopCoat
   a. Mix two-component ROBBINS PULASTIC Coating 221W and apply using ROBBINS PULASTIC lambswool roller(s) according to suppliers instructions. Allow 24 to 48 hours curing time before proceeding.
5. Gamelines
   a. Mix two-component ROBBINS PULASTIC PU-Linepaint according to supplier's instructions.
   b. Line painting should be in accordance with supplier's directions.
   c. Color of court markings shall be chosen from ROBBINS PULASTIC PU-Linepaint standard colors.
   d. Consult architectural drawings for game line locations and chosen colors.

B. Perimeter Molding (Optional):
1. Install a rubber base, anchored to the walls with standard base cement.

3.03 CLEANING

1. Clean up all unused materials and debris and remove from the premises. Dispose of empty containers in accordance with federal and local regulations.

3.04 PROTECTION

1. Cure Time
   a. No traffic or other trades shall be allowed on the surface for a period of one week following completion to allow for complete and proper cure of the finish.
2. Other Trades
   a. It shall be the responsibility of the general contractor to protect the surface from damage by other trades before acceptance by the owner or the owner's authorized agent.
3. Safety
   a. No smoking, open flames or sparks from electrical equipment or any other source shall be permitted during the installation process, or in areas where materials are stored

END OF SECTION

SECTION 096570 HEAVY DUTY SAFETY SHEET FLOORING

PART 1 GENERAL

1.1 SUMMARY

.1 Section Includes: This section includes labor, materials and other services necessary to complete resilient sheet flooring, safety and slip resistant sheet vinyl flooring systems and accessories work. Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section, including but not limited to the following:
- .1 Coordination of start date and timeframe.
- .2 Coordination of substrate preparation.
- .3 Coordination of moisture and pH testing.
- .4 Coordination of proper plumbing fixtures for connections with flooring.
- .5 Floor installation and heat welding of all seams, horizontal and vertical.

.2 Related Sections:
- .1 Section 024100 - Selective Demolition
- .2 Section 028211 – Asbestos Abatement
- .3 Section 061000 - Rough Carpentry.

1.2 REFERENCES

.1 ASTM D 2047, Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.
.2 ASTM E 648/NFPA 253, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
.3 ASTM E662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
.4 ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
.5 ASTM F 970, Standard Test Method for Static Load Limit.
.6 ASTM F1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring.
.7 ASTM F1303, Standard Specification for Sheet Vinyl Floor Covering with Backing.
.8 ASTM F2170, Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
.9 (RFCI) Resilient Floor Covering Institute
- .1 RFCI Standard Slab Moisture Test Method (Calcium Chloride Method) as a supplementary test method to ASTM F2170.

.10 ASTM F 3010 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings
.11 DIN 51130 Slip Resistance Test
.12 ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
.13 RFCI Recommended Work Practices for Removal of Resilient Floor Covering
.14 ANSI/ICPA SS-1 2001 Performance standard for Solid Surface Materials
.15 2018 International Plumbing Code (IPC)

1.3 SUBMITTALS

.1 Product Data: Submit manufacturer's current printed product literature, specifications, installation instructions, and field reports in accordance with Section 01330 - Submittal Procedures.

.2 Samples: Submit duplicate 8" x 10" (203 mm x 254 mm) sample pieces of sheet material, 6" (152 mm) long cap strip in accordance with Section 013300 - Submittal Procedures.

.3 Closeout Submittals: Submit the following:
.1 Operation and Maintenance Data: Submit manufacturer's operation and maintenance data for incorporation into manual specified in accordance with Section 01780 – Closeout Submittals. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.4 QUALITY ASSURANCE

.1 Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
.1 Training: Installer who has attended an Altro flooring installation training clinic or who has successfully installed Altro in three previous kitchens.
.2 Awarded flooring contractor must use in-house installers.
.3 Awarded flooring contractor must be able to provide recent Altro references with contacts.

.2 Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, manufacturer's warranty requirements, and installer qualifications.

.3 Bond Test: Install multiple bond tests using 3' x 3' pieces of material adhered with the appropriate adhesive to verify quality of adhesion. Remove half of each piece after 24 hours, then the other half after 48 hours. To help assess resistance to indentation, place end user equipment onto a sample for 72 hours. Document all results.

.4 Regulatory Requirements: Provide slip resistant sheet vinyl safety flooring in compliance with the following:
.1 Americans with Disabilities Act Architectural Guidelines (ADAAG)
.2 Occupational Safety and Health Administration (OSHA)

1.5 SITE CONDITIONS

.1 Temperature Requirements: If storage temperature is below 68F (20C) or the floor temperature is below 65F (18C), the Altro Classic 25 flooring product must be moved to a warmer place and allowed to reach this temperature before unrolling or installation. For further information, refer to current Altro Installation Practices and Quick Facts.

.2 Maintain air temperature and structural base temperature at flooring installation area between 68F (20C) and 80F (26C) for 72 hours before, during and 24 hours after installation.

.3 Maintain the ambient relative humidity between 40 percent and 60 percent during installation.

.4 Allow sufficient time for proper preparation, installation and curing.

.5 Close spaces to traffic during resilient flooring installation until the installer is satisfied the adhesive has set.

.6 Verify permanent HVAC is operational. If temporary heat is required, use electric or indirect heat sources. Do not use kerosene or propane in direct contact with the ambient air.

.7 Verify other finishing operations, including painting, have been completed.

.8 Where demountable partitions and other items are indicated for installation on top of sheet resilient flooring material, install flooring material before these items are to be installed.

.9 Coordinate with plumbing subcontractor that approved surface membrane clamping drainage connections will be used, including but not limited to, surface clamping round drains, surface clamping trench drains, surface clamping floor sinks, surface clamping grease traps, or use of Gulley Edge/Angle, or employment of Modified Surface Clamping Drain System if existing drains cannot be removed.

.10 Conform to all pertinent ASTM, ACI, plumbing listed in, but not limited to, this specification.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

.2 Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

.3 Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer.

.4 Store rolls in dry locations. Stand rolls on end. Protect and secure rolls from falling.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Deposit all packaging materials in an appropriate container on site for recycling or reuse.

.2 Avoid using landfill waste disposal procedures when recycling facilities are available.

.3 Keep all discarded packaging away from children.

1.8 WARRANTY

.1 Warranty period shall be 12 years commencing on date of substantial completion.

.2 A Labor Warranty period of 2 years to be supplied by the Sub-Contractor.

PART 2 PRODUCTS

2.1 HEAVY DUTY SAFETY SHEET FLOORING

1. Acceptable material: ASTM D2047 .9 Dry, 1.0 Wet;
2. Thickness: 2.5 mm (0.10")
3. Roll Width: 2 m (6' 7")
4. Roll Length: 20 m (66')
5. Roll Weight: 125 kg (275 lbs).

Minimum operating temperatures should not drop below -20ºC (-4ºF).

6. COLOR:
   a. Color to be selected from manufacturer's current range of colors.

2.2 ACCESSORIES

Including but not limited to:

.1 Vinyl welding rod: Acceptable material:
  .1 Manufacturer's standard Weld Rod.

.2 Cove former: Acceptable material, sized to suit application:
  .1 Manufacturer's standard Cove former 24 mm (1") radius

.3 Gulley edge: Acceptable material, vinyl, sized to suit application:
  .1 Manufacturer's standard Gulley Edge.

.4 Cap strip: Acceptable material, sized to suit application, stainless steel:
  .1 Manufacturer's standard Cap Strip

.5 Subfloor Filler and Leveler: Use only grey Portland cement-based "moisture tolerant" underlayments, and patching compounds. Use for filling cracks, holes or leveling. White gypsum materials are not acceptable.

.6 Metal edge strips:
  .1 Aluminum extruded, smooth, mill finish stainless steel with lip to extend over flooring.

.7 Adhesives
  .1 Leveling and Patching Compounds: Latex-modified, moisture resistant, silicate free, Portland cement based or blended hydraulic-cement-based formulation.
  .2 Adhesives
    .1 2-part polyurethane
    .2 2-part polyurethane fast set adhesive (for small areas/repairs only)
    .3 1-part hybrid urethane adhesive (for challenging wet environments).
    .4 Manufacturer's standard caulking adhesive for use with Gulley Edge

.8 Caulking: Manufacturer's standard 100 caulking compound (color match flooring) for use where floor abuts edges, skirtings, wall surfaces or where the flooring is cut around pipes and door frames.

.9 Flash Cove Corner Guard: 5" height

.10 Stainless Steel Deflector Plate: for use under stove equipment not fitted with such; 22"x22"

PART 3 EXECUTION

3.1 EXAMINATION

.1 Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog, and installation instructions.

.2 Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.2 PREPARATION

.1 Remove substrate paint, coatings and other substances that are incompatible with adhesives or contain soap, wax, oil, solvents, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

.2 Verify permanent HVAC is operational. If temporary heat is required, use electric or indirect heat sources. Do not use kerosene or propane in direct contact with the ambient air.

.3 Verify other finishing operations, including painting, have been completed.

.4 Permanent and non-permanent markers, pens, crayons, and paint shall not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.

.5 Safety flooring shall be installed over subfloors conforming to ASTM F710 for concrete and other monolithic floors or ASTM F1482 for wood subfloors.

.6 Always conduct moisture tests per ASTM F-2170 on all concrete slabs regardless of age or grade level. ASTM F-2170 Internal Relative Humidity (IRH) test results must not exceed 90%. Alkalinity Testing per ASTM F710 with an acceptable range of 7-9.9 pH.

.7 Do not proceed with work until results of moisture condition tests are acceptable.

.8 When patching, a *moisture tolerant* patching compound must always be used.

.9 Contingency for High Moisture Readings in Concrete:

.1 If at the time of installation the moisture readings are in excess of manufacturer's recommendations, the General Contractor shall employ a means of Moisture Mitigation. This includes, but is not limited to, the following methods:

.1 Application of a Moisture Reduction Barrier (MRB)

.2 Temporary use of dehumidification equipment.

.3 Postponing of the flooring installation start time.

.4 A budget should be provided to the general contractor for use of an MRB

3.3 INSTALLATION

.1 Installation: Install flooring in accordance with the current posted manufacturer's Installation Practices. All Seams shall be heat welded with Manufacturer's standard rod only.

.2 Drains: Fit Safety Flooring and mechanically fasten to drain outlets to ensure a permanent, watertight installation. The floor drain must have a surface membrane clamp and shall comply with ASME A112.18.2/CSA B125.2 as applicable.

.1 Existing Drains: When existing drains are to be used, provide mechanically fastened stainless steel drain rings over all-round drain outlets as per manufacturer's guidelines to drain modifications. Fit rings over slip resistant sheet vinyl and permit inside diameter that will allow clean-out plate to be removed after installation. Drill into concrete to accommodate lead or plastic anchors. Screw drain rings to create a tight seal with beveled head stainless steel screws.

.2 Square and Rectangular Drains and Floor Sinks: Install Gully Edge around perimeter of drain which has been set in concrete in accordance with Manufacturer's Installation Guide.. Provide stainless steel strips, mechanically fastened with stainless steel screws. Use stainless steel strips in other areas where it is not practical to use Gully Edge.

.3 Coved Installation: Where flooring is coved up wall surfaces and other abutments, installation shall be in accordance with Manufacturer's Installation Practices using the following accessories:

.1 At standard wall finishes: Use stainless steel cap strip to accommodate sheet vinyl to a height of 5" as indicated; adhere per manufacturer's instructions.

3.4 CLEANING

.1 Cleaning: Remove non-staining temporary coverings and protection (reusable textured plastic sheeting) of adjacent work areas. Never use tapes on the surface on the finish flooring, Sharpies, pens, crayons or construction markers on either the finish flooring or the substrate.

.2 Repair or replace damaged installed products.

.3 Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance.

.4 Sweep or vacuum all construction debris and dust first, then clean the flooring.

.5 Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system, such as reusable textured plastic sheeting.

.6 No traffic for 24 hours after installation, unless approved by Altro technical.

.7 No heavy traffic, rolling loads, or furniture placement for 72 hours after installation.

.8 Wait 72 hours after installation before performing initial cleaning. Start a regular maintenance program after the initial cleaning as recommended by manufacturer.

3.5 PROTECTION

.1 Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system, such as a reusable textured plastic sheeting.

.2 Cover and protect new flooring from all other trades during construction with a suitable non-staining protective covering without taping to the surface of the flooring.

END OF SECTION

SECTION 096850 – LUXURY VINYL TILE

PART 1 GENERAL

1.01 THIS SECTION INCLUDES

A. Luxury Vinyl Tile (LVT) flooring as shown on the drawings and schedules and as indicated by the requirements of this section.

1.02 QUALITY ASSURANCE AND REGULATORY REQUIREMENTS

A. Qualifications of Installers: All work shall be done by installation firms specializing in commercial LVT installation. It is required, that the firm or individual shall be a member of the Floor Covering Installation Contractors Association (FCICA) and/or certified by the Certified Floorcovering Installers Association (CFI). Flooring contractor to be specialty contractor normally engaged in this type of work and shall have three (3) years minimum documented experience in commercial installation of these materials and participation in manufacturer's environmental program including responsible carpet removal, recycling, and installation.

B. Flooring contractor will be responsible for the proper product installation, including floor preparation in all the areas indicated in the drawings to receive LVT.

C. Flooring contractor to provide owner a written warranty that guarantees the completed installation to be free from defects in materials and workmanship for a period of no less than two (2) years after job completion.

D. All warranties must be issued by the manufacturer as standard published warranties on all types of LVT within this document. Second source warranties that involve parties other than the LVT manufacturer are unacceptable. If the product fails to perform as warranted when installed according to the installation instructions and maintained according to maintenance instructions, the affected area will be repaired or replaced at the expense of the manufacturer. The LVT manufacturer will provide standard published written performance warranties for the following:

1. A Ten (10) Year warranty on manufacturing defects and a Ten (10) year wear warranty stating that product will not wear through (damage or affect) the printed film layer due to normal traffic. Manufacturer will pay all reasonable labor costs (these costs will be determined by manufacturer).

E. LVT manufacturer to provide field service experts to assist in project start-up as required by the job. Manufacturer will notify owner, architect, general contractor, or another designated contact if any installation instructions are not followed.

F. Provide flooring material to meet the following test performance criteria as tested by a recognized independent testing laboratory. Certified test reports shall be submitted by the carpet manufacturer for each test method. Requirements listed below must be met by all products being submitted for approval:

1. Materials: Phthalates Free
2. Indoor Air Quality: FloorScore® Certified
3. End of Life: 100% Recyclable
4. Class / ASTM F1700: Class III Printed Film Vinyl Plank - Type B (embossed)
5. Flooring Radiant Panel: Class 1
6. ADA Compliance: Compliant For Accessible Routes

7. ASTM F2055 (Size and Tolerance): Passes
8. ASTM F386 (Thickness): Passes
9. ASTM F1914 (Residual Indentation): Passes
10. ASTM F137 (Flexibility): Passes
11. ASTM F2199 (Dimensional Stability): Passes
12. ASTM F925 (Chemical Resistance): Passes
13. ASTM F1514 (Resistance to Heat): Passes
14. ASTM F1515 (Resistance to Light): Passes
15. ASTM E648 (Critical Radiant Flux): Passes
16. ASTM E662 (Optical Smoke Density): Passes
17. ASTM C1028 (Slip Resistance): Passes
18. ASTM F970 (Static Load): Passes

1.03 SUBMITTALS

A. Submit to architect and/or owner ten (10) days prior to bid, two (2) finished samples of the exact type of LVT proposed, including quality, pattern, and color.

B. Submit manufacturer's warranties, installation instructions, and maintenance instructions before bid date

C. Submit the manufacturer's certification that the flooring has been tested by an independent laboratory and complies with the required fire tests as well as the test listed under 1.04 F.

D. Submit to architect and/or owner ten (10) days prior to bid, the manufacturers plan for recycling the specified flooring and related items at the end of the useful life of the flooring.

1.04 ENVIRONMENTAL/FIELD CONDITIONS

A. Deliver all materials to the installation site in the manufacturer's original packaging and in good condition. Packaging to contain manufacturer's name and marks, identification number, shipping and handling instructions and related information

B. Delivered and stored materials must be available for inspection as required by the owner, architect, general contractor, and/or the manufacturer.

C. Sub-floor preparation is to include all required work to prepare the existing floor for installation of the product as specified in this document. Sub-floor preparation shall meet all conditions as specified in the Luxury Vinyl Tile installation instructions.

D. Sub-floor preparation will include, as required, the removal and repair of the existing floor surface. It is required that the floor of a renovation project be inspected before the bid date.

E. The building must be enclosed and the HVAC in continuous operation. The LVT and adhesive must be conditioned to room temperature for 3 days prior to installation, during the installation and continuous following completion of the installation. The ambient air relative humidity must be between 10%-65% with the floor and room temperature between 55- 85 degrees Fahrenheit. The indoor temperature should never fall below 55 degrees Fahrenheit or above 85 degrees Fahrenheit regardless of the age of the installation.

F. Store cartons of tile or plank products flat and squarely on top of one another. Preferably, locate

material in the “center” of the installation area (i.e. away from vents, direct sun- light, etc.) Storing cartons in direct sunlight may affect proper acclimation by inducing thermal expansion/contraction.

G. When palletizing on a jobsite, vinyl plank or tiles need to be stacked 2 rows high side by side with no airspace between. Then quarter turned for 2 rows side by side, not to exceed 12 boxes high. A 5/8” or thicker plywood must also be placed on the pallet first. Do not stack pallets 2 high unless utilizing a 3/4” thick plywood cap between pallets.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer:

1. A ten (10) year warranty on manufacturing defects and a ten (10) year wear warranty stating that product will not wear through (damage or affect) the printed film layer due to normal traffic. If a verified material failure occurs, the manufacturer will pay 100% of all reasonable labor costs for the warranty period (these costs will be determined by manufacturer).

    a. J+J Flooring Group, P.O. Box 1287, Dalton, GA, 30722. (800) 241-4586. JJFLOORINGGROUP.COM.
    b. Shaw Floors, P.O. Drawer 2128, 616 E. Walnut Ave, Dalton, GA 30722; 844-742-7429; Web: www.shawfloors.com
    c. Armstrong Flooring; P.O. Box 556, Mountville, PA 17554; 866-243-2726; Web: www.armstrongflooring.com

2.02 FLOORING MATERIALS

A. Luxury Vinyl Tile:

1. Color: As selected by Architect
2. Added Antimicrobial: ZPT (Zinc Protective Technology)
3. Thickness: 5mm
4. Finish / Coating: Enhanced UV Urethane w/ Ceramic Bead
5. Pattern Repeat: Random Wood Pattern
6. Dimensions: 9"x48"
7. Backing Class: Commercial Grade
8. Commercial Traffic: Heavy Commercial

2.03 ADHESIVES

A. As recommended by manufacturer.

2.04 ACCESSORIES

A. Provide extruded aluminum (mill finish) transition, edge and reducing strips tapered to meet abutting materials as required.

PART 3 EXECUTION

3.01 INSPECTION

A. Examine and verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive flooring.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive flooring.

C. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to sub-floor surfaces.

D. Verify that concrete sub-floor surfaces are dry enough and ready for flooring installation by testing for moisture emission rate and alkalinity in accordance with ASTM F 710; obtain instructions if test results are not within limits recommended by carpet manufacturer and adhesive materials manufacturer.

E. Verify that required floor-mounted utilities are in correct location.

F. Luxury Vinyl Tile shall be inspected by flooring manufacturer representative prior to installation for proper style, color and potential defects.

3.02 PREPARATION

A. Starting installation constitutes acceptance of sub-floor conditions.

B. SURFACE PREPARATION- Dust, dirt, debris and noncompatible adhesive must be removed before the installation begins. Surfaces must be smooth and level with all holes and cracks filled with Portland cement-based patch reinforced with polymers or primed with Premium Sealer.

C. LATEX OR OLD ADHESIVES - Must be mechanically scraped down to a bare residue flat with the concrete substrate or covered with a skim coat of Portland cement-based patch reinforced with polymers. Any old adhesive residue must also be covered with Premium Sealer. Note: Failure to remove or seal old latex or cut back adhesive may cause installation failure, plasticizer migration, shifting, buckling or edge curling; these conditions will not be covered under warranty.

D. CUT BACK ADHESIVES - Must be wet mechanically scraped to a minimum residue and encapsulated with Premium Sealer.

E. CONCRETE MOISTURE TESTING and pH Testing - Substrate surfaces must be tested for moisture emission. It is the responsibility of the Contractor to perform moisture testing prior to starting the installation. ASTM-F2170-2 relative humidity probe moisture testing or ASTM-F1869 calcium chloride testing can be performed on the concrete to determine the surface moisture emission rate. Acceptable relative humidity probe testing results are up to 90% RH. An acceptable result for calcium chloride moisture testing is up to 5 lbs per 1,000 SF per 24 hours. Alkalinity tests should also be performed per ASTM-F710. The maximum acceptable pH is 9.0. Provide relative humidity probe moisture testing over calcium chloride testing, as the results are more accurate and reliable. For test results that determine RH test readings of 90% - 95%, moisture emission rates of 5 lbs -8 lbs, or pH readings of 9.0 - 11.00.

SUBFLOORS

3.03 INSTALLATION OF FLOORING

A. Install LVT using conventional tile and plank installation techniques. Plank products should have a minimum of 6-8” seam stagger.

1. Carefully determine where to begin tile or plank installation; it is customary to center the rooms and hallways so borders are not less than half a tile or plank.
2. Working out of multiple boxes at a time is recommended.
3. Make sure cut edges are always against the wall. To properly cut LVT/LVP products score the top side of the material with a utility knife. Bend the product and finish the cut through the backside. This will ensure the cleanest cut. It may be necessary to

use a heat gun to cut around vertical obstructions. Allow the heated LVT/LVP to return to room temperature before installation.

4. Cutting the product into a fine point may lead to delamination. Use an ethyl cyanoacrylate based super glue to help fuse the LVT/LVP point together. Be sure to clean all glue from the decorative surface immediately. Alcohol based super glues may cause the vinyl to swell.
5. Roll the plank/tile with a 3 section 100 lb. roller. Re-roll the entire glued floor area with the 100 lb. roller within the working time of the adhesive. Continue to roll the floor throughout the working day to ensure proper bond.

3.04 INSTALLATION OF ACCESSORIES

A. Install accessories as required by drawings and per manufacturer's specifications.

3.05 CLEANING AND PROTECTION

A. Remove excess adhesive without damage, from floor, base, and wall surfaces.

B. Recommended to use floor protection after installation. DO NOT use plastic adhesive based protection system.

END OF SECTION

SECTION 099123 - PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.

1.2 SUBMITTALS

A. Product Data: For each paint system indicated.

B. Samples for Initial Selection: For each type of finish-coat material indicated.

1.3 QUALITY ASSURANCE

A. Benchmark Samples (Mockups): Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.

1. Wall Surfaces: Provide samples on at least 10 sq. ft.
2. Small Areas and Items: Architect will designate items or areas required.

3. Final approval of colors will be from benchmark samples.

1.4 PROJECT CONDITIONS

A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.

B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.

C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

C. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:

1. Benjamin Moore & Co. (Benjamin Moore).
2. M. A. Bruder & Sons, Inc. (M. A. B. Paint).
3. PPG Industries, Inc. (Pittsburgh Paints).
4. Sherwin-Williams Co. (Sherwin-Williams).
5. Others as approved.

2.2 PAINT MATERIALS, GENERAL

A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

C. Colors: As selected by Architect from manufacturer's full range.

2.3 PREPARATORY COATS

A. Exterior Primer: Exterior alkyd or latex-based primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.

1. Ferrous-Metal and Aluminum Substrates: Rust-inhibitive metal primer
2. Zinc-Coated Metal Substrates: Galvanized metal primer.
3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

B. Interior Primer: Interior latex-based or alkyd primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.

1. Ferrous-Metal Substrates: Quick drying, rust-inhibitive metal primer
2. Zinc-Coated Metal Substrates: Galvanized metal primer.
3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

C. Interior Gypsum Board Primer: Factory-formulated latex-based primer for interior application.
1. Benjamin Moore; Moorcraft Super Spec Latex Enamel Undercoater & Primer Sealer No. 253: Applied at a dry film thickness of not less than 1.2 mils .
2. M. A. B. Paint; Fresh Kote Vinyl Primer 037-100: Applied at a dry film thickness of not less than 1.5 mils.

3. Pittsburgh Paints; 6-2 SpeedHide Interior Quick-Drying Latex Sealer: Applied at a dry film thickness of not less than 1.0 mil.
4. Sherwin-Williams; PrepRite 200 Latex Wall Primer B28W200 Series: Applied at a dry film thickness of not less than 1.6 mils.
5. Others as approved by Architect.

D. Interior Glazed Block: XIM's 400W Quick Dry, Solvent base White Bonding Primer/Sealer

2.4 EXTERIOR FINISH COATS

A. Exterior Semigloss Acrylic Enamel: Factory-formulated semigloss waterborne acrylic-latex enamel for exterior application.
1. Benjamin Moore; Moorcraft Super Spec Latex House & Trim Paint No. 170: Applied at a dry film thickness of not less than 1.1 mils .
2. M. A. B. Paint; Sea Shore/Four Seasons Acrylic Latex Trim Enamel 024 Line: Applied at a dry film thickness of not less than 1.5 mils.
3. Pittsburgh Paints; 6-900 Series SpeedHide Exterior House & Trim Semi-Gloss Acrylic Latex Paint: Applied at a dry film thickness of not less than 1.5 mils.
4. Sherwin-Williams; A-100 Latex Gloss A8 Series.
5. Others as approved by Architect.

2.5 INTERIOR FINISH COATS

A. Interior Low-Luster Acrylic Enamel: Factory-formulated eggshell acrylic-latex interior enamel.
1. Benjamin Moore; Moorcraft Super Spec Latex Eggshell Enamel No. 274: Applied at a dry film thickness of not less than 1.3 mils.
2. M. A. B. Paint; Fresh Kote Latex Satin Eggshell Enamel 405 Line: Applied at a dry film thickness of not less than 1.5 mils.
3. Pittsburgh Paints; 6-400 Series SpeedHide Eggshell Acrylic Latex Enamel: Applied at a dry film thickness of not less than 1.25 mils.
4. Sherwin-Williams; ProMar 200 Interior Latex Egg-Shell Enamel B20W200 Series: Applied at a dry film thickness of not less than 1.6 mils.
5. Others as approved by Architect.

B. Interior Semigloss Acrylic Enamel: Factory-formulated semigloss acrylic-latex enamel for interior application.

1. Benjamin Moore; Moorcraft Super Spec Latex Semi-Gloss Enamel No. 276: Applied at a dry film thickness of not less than 1.2 mils.
2. M. A. B. Paint; Fresh Kote Latex Semi-Gloss 410 Line: Applied at a dry film thickness of not less than 1.5 mils.
3. Pittsburgh Paints; 6-500 Series SpeedHide Interior Semi-Gloss Latex: Applied at a dry film thickness of not less than 1.0 mil.
4. Sherwin-Williams; ProMar 200 Interior Latex Semi-Gloss Enamel B31W200 Series: Applied at a dry film thickness of not less than 1.3 mils.
5. Others as approved by Architect.

C. Interior Full-Gloss Acrylic Enamel: Factory-formulated full-gloss acrylic-latex interior enamel.

1. Benjamin Moore; Moore's IMC Acrylic Gloss Enamel No. M28: Applied at a dry film thickness of not less than 2.0 mils.
2. M. A. B. Paint; Rich Lux Architectural High Gloss Latex Enamel 022-127 Line: Applied at a dry film thickness of not less than 1.5 mils.
3. Pittsburgh Paints; 6-8534 SpeedHide Interior Latex 100 Percent Acrylic Gloss Enamels: Applied at a dry film thickness of not less than 1.0 mil.
4. Pittsburgh Paints; 90-374 Pitt-Tech One Pack Interior/Exterior High Performance Waterborne High Gloss DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils.
5. Sherwin-Williams; ProMar 200 Interior Latex Gloss Enamel B21W201: Applied at a dry film thickness of not less than 1.5 mils.
6. Others as approved by Architect.

2.6 INTERIOR WOOD STAINS AND VARNISHES

A. Open-Grain Wood Filler: Factory-formulated paste wood filler applied at spreading rate recommended by manufacturer.
1. Benjamin Moore; Benwood Paste Wood Filler No. 238.
2. M. A. B. Paint; Paste Wood Filler.
3. Pittsburgh Paints; none required.
4. Sherwin-Williams; Sher-Wood Fast-Dry Filler.
5. Others as approved by Architect.

B. Interior Wood Stain: Factory-formulated alkyd-based penetrating wood stain for interior application applied at spreading rate recommended by manufacturer.
1. Benjamin Moore; Benwood Penetrating Stain No. 234.
2. M. A. B. Paint; Wood Stain 062 Line.
3. Pittsburgh Paints; 77-560 Rez Interior Semi-Transparent Oil Stain.
4. Sherwin-Williams; Wood Classics Interior Oil Stain A-48 Series.
5. Others as approved by Architect.

C. Clear Sanding Sealer: Factory-formulated fast-drying alkyd-based clear wood sealer applied at spreading rate recommended by manufacturer.
1. Benjamin Moore; Moore's Interior Wood Finishes Quick-Dry Sanding Sealer No. 413.
2. M. A. B. Paint; Minit Dri Sanding Sealer 037-005 Line.
3. Pittsburgh Paints; 6-10 SpeedHide Quick-Drying Interior Sanding Wood Sealer and Finish.
4. Sherwin-Williams; Wood Classics Fast Dry Sanding Sealer B26V43.
5. Others as approved by Architect.

D. Interior Alkyd- or Polyurethane-Based Clear Satin Varnish: Factory-formulated alkyd- or polyurethane-based clear varnish.
1. Benjamin Moore; Benwood Interior Wood Finishes Polyurethane Finishes Low Lustre No. 435.
2. M. A. B. Paint; Rich Lux Water Based Satin Polyurethane.
3. Pittsburgh Paints; 77-7 Rez Varnish, Interior Satin Oil Clear.
4. Sherwin-Williams; Wood Classics Fast Dry Oil Varnish, Satin A66-300 Series.
5. Others as approved by Architect.

E. Interior Waterborne Clear Satin Varnish: Factory-formulated clear satin acrylic-based polyurethane varnish applied at spreading rate recommended by manufacturer.
   1. Benjamin Moore; Stays Clear Acrylic Polyurethane No. 423, Satin.
   2. M. A. B. Paint; Rich Lux Water Based Satin Polyurethane 088-900s.
   3. Pittsburgh Paints; 77-49 Rez Satin Acrylic Clear Polyurethane.
   4. Sherwin-Williams; Wood Classics Waterborne Polyurethane Satin, A68 Series.
   5. Others as approved by Architect.

F. Interior Waterborne Clear Gloss Varnish: Factory-formulated clear gloss acrylic-based polyurethane varnish applied at spreading rate recommended by manufacturer.
   1. Benjamin Moore; Benwood Interior Wood Finishes Polyurethane Finishes High Gloss No. 428.
   2. M. A. B. Paint; Rich Lux Water Based Gloss Polyurethane 088-899 Line.
   3. Pittsburgh Paints; 77-45 Rez Full-Gloss Acrylic Clear Polyurethane.
   4. Sherwin-Williams; Wood Classics Waterborne Polyurethane Gloss, A68 Series.
   5. Others as approved by Architect.

G. Paste Wax: As recommended by manufacturer.

PART 3 - EXECUTION

3.1 APPLICATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

C. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.

   1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

D. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

   1. Provide barrier coats over incompatible primers or remove and reprime.

   2. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.

      a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill

holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.

b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
c. If transparent finish is required, backprime with spar varnish.
d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.

3. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations. Prime areas where shop prime has been damaged on PEMB components.

4. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.

E. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.

1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

F. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

G. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
2. Paint Pre-Engineered Building (PEMB) components (columns, main frames, and interior face of wall girts and channels) exposed to view in apparatus bay.
3. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
4. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
5. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
6. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
7. Sand lightly between each succeeding enamel or varnish coat.

H. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Omit primer over metal surfaces that have been shop primed and touchup painted.
2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
3. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.

I. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

J. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.

K. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.

L. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.

M. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

N. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.

1. Provide satin finish for final coats.

O. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

3.2 CLEANING

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

B. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

C. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.

1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.3 EXTERIOR PAINT SCHEDULE

A. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.

1. Full-Gloss Alkyd-Enamel Finish: Two finish coats over a rust-inhibitive primer.

a. Primer: Exterior ferrous-metal primer.
b. Finish Coats: Exterior full-gloss alkyd enamel.

3.4 INTERIOR PAINT SCHEDULE

A. Concrete and Masonry (Other Than Concrete Unit Masonry): Provide the following paint systems over interior concrete and brick masonry substrates:

1. Semigloss Alkyd-Enamel Finish: Two finish coats over a primer.

a. Primer: Interior concrete and masonry primer.
b. Finish Coats: Interior semigloss alkyd enamel.

B. Concrete Unit Masonry: Provide the following finish systems over interior concrete masonry:

1. Flat Acrylic Finish: Two finish coats over a block filler.

a. Block Filler: Concrete unit masonry block filler.
b. Finish Coats: Interior flat acrylic paint.

C. Gypsum Board: Provide the following finish systems over interior gypsum board surfaces:

1. Flat Acrylic Finish: Two finish coats over a primer.

a. Primer: Interior gypsum board primer.
b. Finish Coats: Interior flat acrylic paint.

2. Semigloss Acrylic-Enamel Finish: Two finish coats over a primer.

a. Primer: Interior gypsum board primer.
b. Finish Coats: Interior semigloss acrylic enamel.

D. Wood and Hardboard: Provide the following paint finish systems over new interior wood surfaces:

1. Semigloss Acrylic-Enamel Finish: Two finish coats over a wood undercoater.

a. Primer: Interior wood primer for acrylic-enamel and semigloss alkyd-enamel finishes.
b. Finish Coats: Interior semigloss acrylic enamel.

E. Ferrous Metal: Provide the following finish systems over ferrous metal:

1. Semigloss Acrylic-Enamel Finish: Two finish coats over a primer.

a. Primer: Interior ferrous-metal primer.
b. Finish Coats: Interior semigloss acrylic enamel.

3.5 INTERIOR STAIN AND NATURAL-FINISH WOODWORK SCHEDULE

A. Stained Woodwork: Two finish coats of varnish over a sealer coat and interior wood stain.

1. Stain Coat: Interior wood stain.
2. Sealer Coat: Clear sanding sealer.
3. Finish Coats: Interior alkyd- or polyurethane-based clear satin varnish.

END OF SECTION 099123

APPENDIX A

ASBESTOS MANAGEMENT PLAN
2021 REINSPECTIONS SURVEY REPORT

Project Location:
SHADY GROVE STATE SCHOOL
2400 High Street
Poplar Bluff, MO 63901

Prepared for:
STATE OF MISSOURI
301 W. High Street
Jefferson City, MO 65102

Designated Person:
Mike May
(314) 452-3757

Project Number: 921197
Date: January 21, 2022

Prepared by:

OCCU-TEC
ENERGY, ENVIRONMENTAL AND SAFETY SOLUTIONS
2604 NE Industrial Drive, Suite 230, North Kansas City, MO 64117
816-231-5580 • www.occutec.com

Inspected by:
Justin Arnold
Missouri Asbestos Inspector (7020041421MOIR13670)
Date of Inspection: January 11, 2022

Section:

Appendices

Section 1 Introduction

OCCU-TEC, Inc. (OCCU-TEC) performed an Asbestos Hazard Emergency Response Act (AHERA) three-year reinspection of the facility to reassess known asbestos-containing building materials (ACBMs) that have been previously identified in the building. This reinspection report identifies all suspect ACBMs. Positive asbestos containing material samples are highlighted in red on the attached floor plan while negative materials are highlighted in black. Additionally, ACBMs are characterized as either friable or non-friable and were reassessed for present condition and hazard potential.

Friable ACBMs are materials that can be reduced to powder by hand pressure such as fireproofing, sprayed-on acoustic ceilings, ceiling tile, pipe insulation, and other miscellaneous materials. Because friable materials are more likely to release asbestos fibers into the air when disturbed than non-friable materials, friable materials are considered a greater health concern. Other materials such as floor tile, mastics, stucco and roofing are considered non-friable materials. Non-friable materials can become friable by crushing, sanding, sawing, shot-blasting, severe weathering or by other mechanically induced means.

Removal cost estimates are for budgeting purposes only and should not be used as a quote for removal of the materials. It is not our recommendation to remove these materials unless they are significantly damaged beyond repair, or if planned demolition or renovation activities could disturb the materials. These estimates are based on recent pricing from asbestos abatement firms performing similar work but may vary from actual competitive bidding.

REINSPECTION SUMMARY

No changes were noted during the 2021 reinspection with the exception of room number changes that were noted during this inspection and indicated section 3, 4 and 5 of this report. No additional materials were identified or sampled. Please refer to the 2004/2007/2013/2018 AHERA Management Plan for additional information.

DISCLAIMER

This report is prepared for the express use and benefit of State of Missouri, its agents and employees. The information in this report or portions thereof may be required to be included in notifications to employees, contractors or other visitors to the building(s). This report is not intended to be used as a specification or work plan for any of the work suggested or recommended in this report.

This report is based upon conditions and practices observed at the property and information made available to the surveyor. Because OCCU-TEC Inc. did not perform destructive sampling on structural elements, the possibility exists that some Asbestos Containing Materials (ACM) were not identified in this inspection which could be located in inaccessible areas (within walls, pipe chases, ducts, etc.). If materials are found that do not match materials sampled, they should be Presumed Asbestos Containing Materials (PACM), as defined in the OSHA Construction Standard for Asbestos 29 CFR 1926.1101, and treated as ACM until sampling and laboratory analysis meeting the OSHA requirements is conducted.

This report references only materials determined to be ACM. For a complete list of all homogeneous materials sampled at the subject property as part of ongoing asbestos management operations, the reader should refer to the Asbestos Management Plan and Reinspection Reports completed in 2004, 2007, 2013, 2015, and 2018.

Section 2 Description of Building Construction and Systems

Number of Floors: 1 **Year Built:** 1980 **Total Square Footage:** 17,265

Building Description/Comments:

Building is constructed of cinderblock supported by metal I-beams with composite roof shingles. The building is positioned on a concrete pad.

Section 3 Summary of Positive Homogeneous Materials

Each unique material within the building has been assigned a unique Homogenous Material/HM number by the surveyor at the time of the inspection. A homogenous material as defined by EPA AHERA is an area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture. This section is organized sequentially by homogenous material number.

Complete information on asbestos containing materials is included in Section 4 of this report.

Site Information	*Survey Performed By*	*Inspection Date*
Shady Grove State School	**OCCU-TEC, INC.**	**January 11, 2022**

Suspect Material	HM Number	Material Location(s)	Floor	Asbestos Present	Friable/ Non-Friable
12 x12 White with brown specks Floor Tile & Mastic Black	FTM-03	114 Conference Room	1	Yes	Non-Friable
		20-Health Services	1	Yes	Non-Friable
		21-Isolation Room	1	Yes	Non-Friable
		138-Kitchen	1	Yes	Non-Friable
		138-Kitchen Storage	1	Yes	Non-Friable
		124-Dining Room	1	Yes	Non-Friable
		109-Multipurpose Room	1	Yes	Non-Friable
		109-PE Office	1	Yes	Non-Friable
		PE Storage Room	1	Yes	Non-Friable
		S10-Storage Room	1	Yes	Non-Friable
		S101-Storage	1	Yes	Non-Friable
		S130-Storage	1	Yes	Non-Friable
		138-Toilet	1	Yes	Non-Friable
		V1-Vestibule	1	Yes	Non-Friable
Black Sink Undercoating	SK-14	127-Classroom	1	Yes	Non-Friable
		126-Classroom	1	Yes	Non-Friable
		112-Home Living	1	Yes	Non-Friable
		102-Classroom	1	Yes	Non-Friable
		103-Classroom	1	Yes	Non-Friable
		116-Staff Lounge	1	Yes	Non-Friable

Site Information

Shady Grove State School

Section 4 Material Information Tables

Site Information	***Client Information***
Shady Grove State School (Site ID: Shady Grove)	State of Missouri
Building: School	301 W. High Street
2400 High Street	Jefferson City, MO 65102
Poplar Bluff, Mo 63901	

Survey Performed By	***Inspector***	***Inspection Date***	***Job Number***
OCCU-TEC, Inc.	Justin Arnold	January 11, 2022	921197

Material Description	*Material Number*	*Asbestos Present*
12 x 12 White with brown specks Floor Tile & Black Mastic	FTM-03	Yes

Material Category	*Friable Classification*	*EPA Category*	*Total Quantity*	*Unit of Measurement*
Flooring	Non-Friable	Category II	5,724	Square Feet

General Condition	*Overall Material Assessment*	*Recommended Response*
Good	Potential For Damage/No Damage	Operations & Maintenance

General Material Comments

Material Location(s)	*Floor*	*Location Quantity*	*Location Condition*	*Material Comments (by location)*
60-Dining Room	1	1,400	Good	
50-Kitchen	1	735	Good	
T50-Toilet	1	20	Good	
51-Kitchen Storage	1	150	Good	
18-Conference Room	1	720	Good	Tile under carpet
S10-Storage Room	1	84	Good	
20-Health Services	1	108	Good	
21-Isolation Room	1	49	Good	
V1-Vestibule	1	64	Good	
70-Multipurpose Room	1	2,000	Good	
72-PE Office	1	120	Good	
PE Storage Room	1	216	Good	
S101-Storage	1	18	Good	
S130-Storage	1	40	Good	

Sample IDs/Location	*Floor*	*Analyzed*	*Overall Result*	*Layer(s) reported by lab*	*Results by Layer*
FTM-03-01 60-Dining Room-south wall by column	1	Yes	12%	1) Mastic 2) Floor Tile	12% Chrysotile None Detected
FTM-03-2 18-Conference Room-behind door	1	Yes	0%	1) Floor Tile	None Detected
FTM-03-3 S10-Storage Room-northeast corner	1	Yes	0%	1)Floor Tile	None Detected

Site Information

Shady Grove State School

Site Information	***Client Information***
Shady Grove State School (Site ID: Shady Grove)	State of Missouri
Building: School	301 W. High Street
2400 High Street	Jefferson City, MO 65102
Poplar Bluff, Mo 63901	

Survey Performed By	***Inspector***	***Inspection Date***	***Job Number***
OCCU-TEC, Inc.	Justin Arnold	January 11, 2022	921197

Material Description	*Material Number*	*Asbestos Present*
Black Sink Undercoating	SK-14	Yes

Material Category	*Friable Classification*	*EPA Category*	*Total Quantity*	*Unit of Measurement*
Miscellaneous	Non-Friable	Category II	8	Each

General Condition	*Overall Material Assessment*	*Recommended Response*
Good	Potential for Damage/No Damage	Operations & Maintenance

General Material Comments

Material Location(s)	*Floor*	*Location Quantity*	*Location Condition*	*Material Comments (by location)*
19-Staff Lounge	1	1	Good	
110-Classroom	1	1	Poor	Black coat peeling off
141-Classroom	1	1	Poor	Black coat peeling off
140-Classroom	1	1	Good	
111-Classroom	1	1	Poor	Black coat peeling off
120-Home Living	1	2	Good	

Sample IDs/Location	*Floor*	*Analyzed*	*Overall Result*	*Layer(s) reported by lab*	*Results by Layer*
SK-14-1 19-Staff Lounge-Sink	1	Yes	4%	1) Sink Undercoat	4% Chrysotile
SK-14-2 110-Classroom Sink	1	No	Not Available	1) Sink Undercoat	Not Analyzed
SK-14-3 111-Classroom-Sink	1	No	Not Available	1) Sink Undercoat	Not Analyzed

Site Information

Shady Grove State School

Section 5 Removal Cost Estimate Summary

These estimates are for budgeting purposes only and should not be used as a quote for removal of the materials. It is not our recommendation to remove these materials unless they are beyond repair, or planned demolition or renovation activities will disturb the materials. Estimates are based on recent pricing we have received from contractors performing similar work and may vary from actual prices obtained due to the actual scope of work, quantity of material removed, control measures specified and contractor work loads, etc.

Site Information	***Client Information***
Shady Grove State School (Site ID: Shady Grove)	State of Missouri
Building: School	301 W. High Street
2400 High Street	Jefferson City, MO 65102
Poplar Bluff, Mo 63901	

Location					
127-Classroom					
EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	Black Sink Undercoating	14	1	Each	$200
		Space Removal Costs			$200

Location					
126-Classroom					
EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	Black Sink Undercoating	14	1	Each	$200
		Space Removal Costs			$200

Location					
112-Home Living					
EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	Black Sink Undercoating	14	2	Each	$200 to $300
		Space Removal Costs			$200 to $300

Location					
102-Classroom					
EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	Black Sink Undercoating	14	1	Each	$200
		Space Removal Costs			$200

Location					
103-Classroom					
EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	Black Sink Undercoating	14	1	Each	$200
		Space Removal Costs			$200

Location					
114-Conference Room					
EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	350	Square Feet	$613 to $1138
		Space Removal Costs			$613 to $1138

Site Information

Shady Grove State School

Site Information	***Client Information***
Shady Grove State School (Site ID: Shady Grove)	State of Missouri
Building: School	301 W. High Street
2400 High Street	Jefferson City, MO 65102
Poplar Bluff, Mo 63901	

Location

19-Staff Lounge

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	Black Sink Undercoating	14	1	Each	$200
		Space Removal Costs			$200

Location

20-Health Services

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	108	Square Feet	$200 to $351
		Space Removal Costs			$200 to $351

Location

21-Isolation Room

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	49	Square Feet	$200
		Space Removal Costs			$200

Location

138-Kitchen

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	735	Square Feet	$1,286 to $2,389
		Space Removal Costs			$1,286 to $2,389

Location

138-Kitchen Storage

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	150	Square Feet	$263 to $488
		Space Removal Costs			$263 to $488

Location

124-Dining Room

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	1,100	Square Feet	$1,925 to $3,575
		Space Removal Costs			$1,925 to $3,575

Location

109-Multipurpose Room

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	1,890	Square Feet	$3,908 to $6,943
		Space Removal Costs			$3,908 to $6,943

Site Information

Shady Grove State School

Site Information	***Client Information***
Shady Grove State School (Site ID: Shady Grove)	State of Missouri
Building: School	301 W. High Street
2400 High Street	Jefferson City, MO 65102
Poplar Bluff, Mo 63901	

Location

109-PE Office

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	117	Square Feet	$205 to $380
		Space Removal Costs			$205 to $380

Location

PE Storage Room

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	192	Square Feet	$336 to $624
		Space Removal Costs			$336 to $624

Location

S10-Storage Room

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	84	Square Feet	$200 to $400
		Space Removal Costs			$200 to $400

Location

S101-Storage

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	18	Square Feet	$200
		Space Removal Costs			$200

Location

S130-Storage Room

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	40	Square Feet	$200
		Space Removal Costs			$200

Location

138-Toilet

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	20	Square Feet	$200
		Space Removal Costs			

Location

V1-Vestibule

EPA Category	*Suspect Material*	*HM*	*QTY.*	*Units*	*Removal Costs (low to High)*
Category II	12 x 12 White with brown specks Floor Tile & Black Mastic	3	64	Square Feet	$200 to $208
		Space Removal Costs			$200 to $208

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Phone: 816-231-5580
Fax: 816-231-5641
www. occutec.com

PHOTO LOG	
Client:	State of Missouri Office of Administration
Building:	Shady Grove

Homogeneous Material #	
Description:	Front of Building
Taken By:	Justin Arnold
Date Taken:	1/11/2022

Homogeneous Material #	SK-14
Description:	Black Sink Undercoating
Taken By:	Justin Arnold
Date Taken:	1/11/2022

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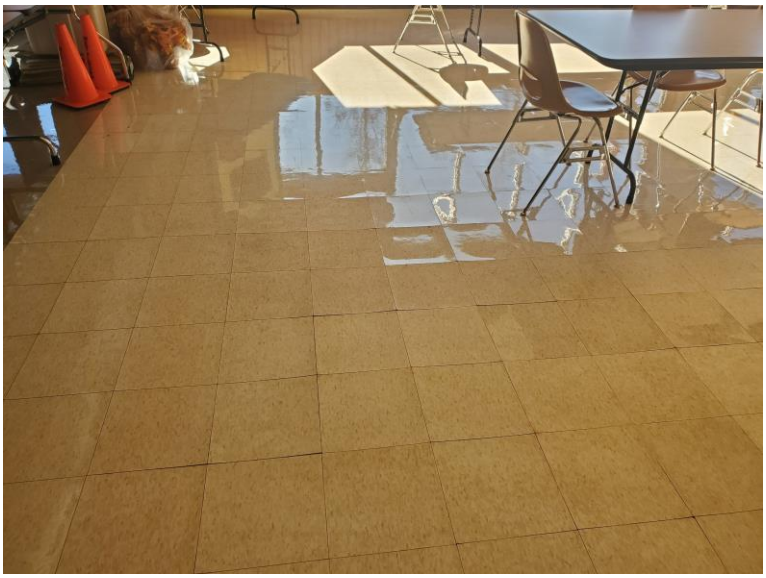
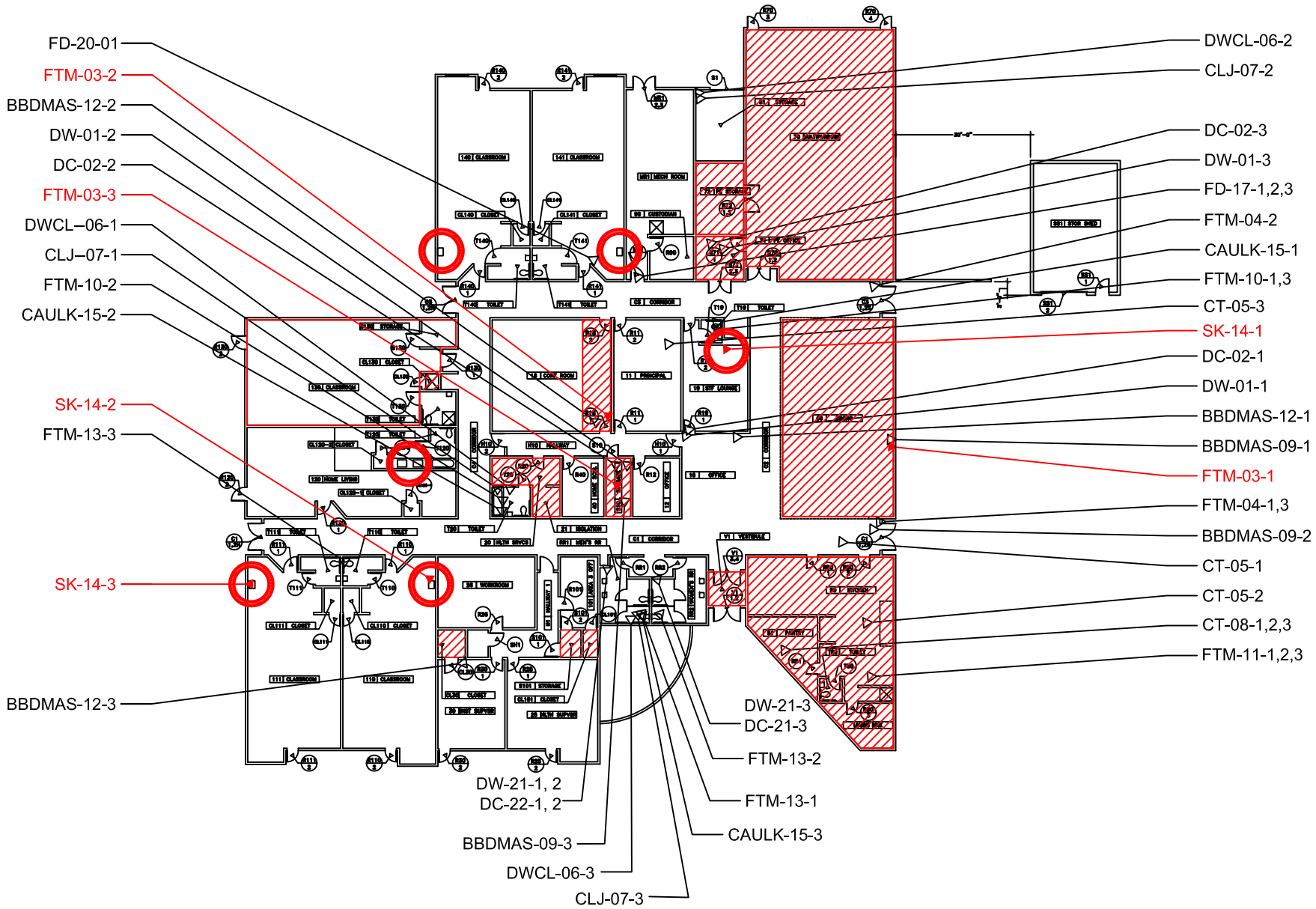
Fax: 816-231-5641
www. occutec.com

PHOTO LOG	
Client:	State of Missouri Office of Administration
Building:	Shady Grove



Homogeneous Material #	FTM-03
Description:	12 White with brown specks Floor Tile & Mastic Black
Taken By:	Justin Arnold
Date Taken:	1/11/2022



IDENTIFIED ACM LEGEND

- SINK UNDERCOATING
- BLACK FLOOR TILE MASTIC

ASBESTOS BULK SAMPLE LEGEND

▲ = SAMPLE CONTAINS ASBESTOS

△ = SAMPLE WAS NEGATIVE FOR ASBESTOS

ASBESTOS INSPECTION NOTES

1. ADDITIONAL ASBESTOS MATERIALS MAY BE PRESENT IN UNACCESSIBLE LOCATIONS.

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100 NW Business Park Lane • Riverside, MO 64150
816-231-5580 • www.occutec.com

TITLE: ASBESTOS PLAN

CLIENT NAME: STATE OF MISSOURI - DESE

SCHOOL NAME: SHADY GROVE (#4)

DRAWN by: JWH Update

SUB. DATE: 02/21/2019

REV. DATE:.

SCALE: 1/32" = 1'-0"

93055 | 1 of 1

Appendix A

Definitions of Terms and Assessment Criteria

Definitions of Terms and Assessment Criteria

This survey report organizes information on each suspect ACBM identified in tables located in Section 4. This section defines the terms used to describe materials listed in Section 4.

Material description contains the description of the suspect homogeneous asbestos containing building material.

Material Serial Number is used to reference the material for reinspections, etc.

Asbestos type and content describes the type of asbestos and its percentage in the material.

Asbestos Results for positive materials are shown as a percentage. Samples having less than 1% asbestos are reported as containing "Trace" amounts of asbestos and samples with no detected asbestos are reported as "BLD" or below limit if detection.

Sample number(s) identifies a particular material sample obtained from a specific sample location. Sample numbers are used primarily for laboratory identification.

Sample Location identifies where the samples of this material were obtained.

Material Category categorizes each material as surfacing, TSI or miscellaneous.
Surfacing Materials – Asbestos containing materials that are sprayed-on, troweled-on or otherwise applied to surfaces, such as acoustical plaster on ceilings and fireproofing on structural members, or other materials on surfaces for acoustical, fireproofing, or other purposes.

Thermal Systems Insulation (TSI) – Asbestos containing materials applied to pipes, fittings, boilers, breaching, tanks, ducts or other interior structural components to prevent heat loss or gain or water condensation.

Miscellaneous Materials – Asbestos containing materials applied to or a part of building components that are not classified as surfacing materials or thermal systems insulation.

Presumed Asbestos Containing Material (PACM) – presumed because sampling would permanently damage the integrity of the component or is physically practical.

Quantity & Units reports approximate total quantity per unit of measure for each material.

Building(s) & Floor(s) specifies where a material is located.

Material Location describes where the material is found throughout the building.

Material Condition identifies the material as Friable, Non-friable or Jacketed (for thermal systems insulation only) if asbestos is present.

Friable – An asbestos containing material that can be crumbled, pulverized or reduced to powder, when dry, by hand pressure, such as spray applied fireproofing on structural steel members, spray applied acoustical ceiling materials or damaged thermal systems insulation. Friable materials are of greatest concern due to their potential fiber release.

Non-Friable – An asbestos containing material where the asbestos is bound tightly in a matrix or sealed by a protective layer. Non-friable materials can become friable by being rendered to a crumbled, pulverized or powdered state, when dry, by crushing, sanding, sawing, shot-blasting, severe weathering or by other mechanically induced means. Common examples of non-friable materials are adhesives, floor tiles, transite and roofing materials.

Jacketed – An asbestos containing material applied to thermal systems insulation and "jacketed" with a protective outer layer such as canvas or metal to keep the material in good condition. Undamaged jacketed ACBM is considered non-friable. If the jacketing is damaged, the material is considered friable.

Damage Category describes the type of damage, if any, to the material. The following damage categories are used: None, Physical, Air, and Water.

Material Assessment identifies the condition of the material in relation to physical and water damage, delamination of the material from its substrate, the extent of the damage and the potential for damage from building conditions, such as, accessibility by building occupants, influence of vibration, etc. The six standard assessment charges ranked by hazard potential, with the first being the lowest hazard are as follows: 1) Potential for Damage, 2) Potential for Significant Damage, 3) Damaged 4) Damaged with Potential for Damage, 5) Damaged with Potential for Significant Damage, and 6) Significantly Damaged. Only friable materials are assessed under AHERA regulations. Non-friable materials, unless damaged, are not assessed and can be assumed to be in good condition.

Damaged – The damage or deterioration of the material results in inadequate cohesion or adhesion with crumbling, blistering, water stains, marring or otherwise abraded over less than one-tenth (1/10) of the surface if the damage is evenly distributed or one-fourth (1/4) if the damage is localized.

Significant Damage – The damage or deterioration of the material results in inadequate adhesion or cohesion and the damage is extensive and severe with one or more of the following characteristics: 1) Crumbling or blistering over at least one-tenth (1/10) of the surface if evenly distributed, one-fourth (1/4) if the damage is localized; 2) Areas of the material hanging from the surface, delaminated, or showing adhesive failure; 3) Water stains, gouges or marred.

Recommended Response suggests the appropriate options for controlling or maintaining ACBM in a safe manner. There are four options used:
Operations and Maintenance (O & M) – A program designed to "manage" asbestos in-place. As long as asbestos containing materials remain in a building, an O & M program should be instituted to alert maintenance personnel, custodial workers and outside vendors of the existence and location of these materials and to set a policy for the maintenance of these materials. The material is usually only required

to be removed if it is significantly damaged, prior to demolition of the building or if it will be disturbed by renovation activities.

Repair – The restoration of damages or deteriorated asbestos containing building materials to an intact condition. Once the intact condition is established, the material should be included in an O & M program. The material is usually only required to be removed if it is significantly damaged, prior to demolition of the building or if it will be disturbed by renovation activities.

Abate Due to Condition – This material is significantly damaged and is unsafe in its current condition. The access to the area should be restricted to personnel equipped with appropriate personal protection. This material should be properly removed by a licensed contractor using workers trained in the safe removal of asbestos.

Abate Prior to Renovation – This material should be properly removed prior to planned renovation activities by a licensed contractor using workers trained in the safe removal of asbestos. This recommendation is usually made only on survey reports prepared prior to planned renovation activities.

Comments & Damage Description contains any additional information and or specific details of material damage are noted here.

EPA Category provides the appropriate material category as outlined in the NESHAPS regulation. The four options are friable, Category 1, Category 2, and needs determination.

Friable – Materials containing greater than 1% asbestos are always considered Regulated Asbestos Containing Materials (RACM) that require removal prior to building renovation or demolition activities that impact the material.

Category 1 – Materials that are bituminous non-friable and contain more than 1% asbestos that become RACM and require removal only when will be subject to grinding, cutting, sanding or abrading.

Category 2 – Materials that are non-friable and contain more than 1% asbestos that will have a high probability of being crumbled, pulverized or reduced to a powder by the demolition or renovation activity. These materials usually become RACM and will require removal.

Needs Determination – Materials that the individual designing the abatement and demolition project needs to inspect and evaluate to determine the potential for the material to become RACM and/or evaluate the asbestos content for the composite and individual layers of the material. For sheet rock with mudding compounds only, the EPA allows using the composite sample result. If the composite result by Point Counting the sample is below 1% asbestos, the material is not RACM.

Appendix B

Bulk Sampling Protocol and Analytical Methods

Bulk Sampling Protocol and Analytical Methods

Bulk samples of suspect asbestos containing building materials were obtained using standard industrial hygiene techniques including wetting friable materials to minimize friable release. When necessary, our personnel wore half-face air purifying respirators equipped with high efficiency particulate (HEPA) filters while obtaining samples.

Our sampling strategy for suspect friable surfacing materials was based on the guidelines outlined in the EPA publication "Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials," the procedures outlined in 40 CFR 763, Subpart E (AHERA). For non-friable suspect materials, AHERA requires the building inspector to determine the appropriate number of samples to obtain and analyze.

Samples with no observable asbestiform minerals are designated as Non-Detect (NAD). Samples in which asbestiform minerals are observed, but exist in concentrations of less than one percent (<1%), are designated as present in Trace (TR) amounts; all other samples are designated as asbestos containing with the appropriate percent of asbestos noted.

Each inspection was conducted by an accredited inspector who:

1. Visually inspected the area to identify the locations of suspected asbestos-containing building material (ACBM).

2. Touched all suspected ACBM to determine friability.

3. Identified all homogeneous areas of suspected friable and nonfriable ACBM.

4. Sampled each identified homogeneous area in accordance with 29 CFR 1910.1001 pursuant to the requirements of 40 CFR 763.86, or assumed the material to be an ACBM.

5. Assessed each identified homogeneous area in each functional space in accordance with 29 CFR 1910.1001 pursuant to the requirements of 40 CFR 763.88.

6. Recorded the following information:

a. The date of the inspection, the name and signature of the person(s) performing the inspection, and the inspector accreditation number.

b. An inventory of the locations of the homogeneous areas where samples were collected, exact location where each bulk sample was collected, dates that samples were collected, and homogeneous areas where suspected ACBM was assumed to be asbestos-containing material (ACM).

c. The name and signature of each inspector who collected the samples, and an accreditation number.

d. A list of homogeneous areas identified as surfacing material, thermal system insulation, or miscellaneous material.

e. Assessments made of material, the name and signature of each inspector who made the assessments and accreditation number.

Appendix C

Laboratory Bulk Sampling Reports

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Appendix D

TEM Laboratory Baseline Air Sampling Reports

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Appendix E

Summary of Regulatory Requirements

Appendix E Summary of Regulatory Requirements
This appendix provides a summary of building owner and manager requirements under various asbestos regulations promulgated by the Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) to protect building occupants and employees from exposure to asbestos.

Survey Requirements
Prior to any renovation activity, OSHA and EPA regulations require that a complete asbestos survey be performed to determine if asbestos is present in any suspect asbestos containing material that will be present in the construction or work area. This survey report addresses accessible material. It is recommended that prior to renovation activities, inaccessible areas that could contain asbestos materials be inspected.

Notification and Posting Requirements
As required by the Occupational Safety and Health Act (OSHA) Asbestos Construction Standard, 29 CFR 1926.1101, all PACM and identified ACM must be included in your building notification statements for employees, tenants, and outside contractors, as well as any other affected parties to prevent exposure to asbestos.

All ACM should be properly labeled and easily identified as ACM. Warning signs should be posted at the entrance of mechanical rooms that contain asbestos.

Removal Requirements
Under EPA regulations, asbestos containing materials must be properly removed by licensed asbestos abatement contractors prior to renovation or demolition activities that would disturb friable materials or cause non-friable materials to become friable and a regulated material.

Repair of Damaged Materials and Cleanup of Debris
OSHA requires that asbestos containing debris be immediately cleaned up. It is recommended that damaged materials that may release fibers be repaired by properly trained personnel as soon as possible to prevent fiber release and potential exposures.

Training Requirements
OSHA requires employers whose employees are likely to or required to disturb asbestos to receive an asbestos training course. Refresher training is require to be provided annually.

Appendix F

Building Inspector Certifications

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

May 5, 2021

Justin E. Arnold
2604 NE Industrial Dr. Ste 230
North Kansas City, MO 64117

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: 7020041421MOIR13670
Course Training Date: April 14, 2021
Missouri Certification Approval Date: May 05, 2021
Missouri Certification Expiration Date: May 05, 2022

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

Missouri Department of NATURAL RESOURCES
dnr.mo.gov
Michael L. Parson, Governor
Carol S. Comer, Director

May 5, 2021

Justin E. Arnold
2604 NE Industrial Dr. Ste 230
North Kansas City, MO 64117

RE: **Missouri Asbestos Occupation Certification Card**

Enclosed is your certification card for Asbestos Management Planner, as issued by the Asbestos Unit of the Missouri Department of Natural Resources' Air Pollution Control Program.

Missouri Certification Number: 7020041421MOMPR13670
Course Training Date: April 14, 2021
Missouri Certification Approval Date: May 05, 2021
Missouri Certification Expiration Date: May 05, 2022

Note:

- All Missouri-certified asbestos personnel must comply with the following statutes and regulations:
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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 G

O & M Plan (same plan is used for all schools)

ASBESTOS OPERATIONS AND MAINTENANCE PROGRAM (O&M PLAN)

Prepared for:

Division of Special Education
State Schools for Severely Handicapped (SSSH)
Missouri School for the Blind (MSB)
Missouri School for the Deaf (MSB)

Missouri Department of
Elementary and Secondary Education

205 Jefferson Street
P.O. Box 480
Jefferson City, MO 65101

Prepared by:

OCCU-TEC
SAFETY AND ENVIRONMENTAL SOLUTIONS

2604 NE Industrial Drive, Suite 230
Kansas City, MO 64117

May 15, 2008 Revised 2022

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1.0 OBJECTIVES

In accordance with the requirements of the U.S. Environmental Protection Agency (EPA), the Occupational Safety and Health Administration (OSHA), and local authorities, The Department of Elementary and Secondary Education (DESE) has developed and implemented this Asbestos Operations and Maintenance (O&M) Plan for DESE school facilities located throughout the State of Missouri. The primary objective of the Asbestos Operations and Maintenance (O&M) Plan is to recognize, control, and mitigate potential asbestos hazards exposure to student, parent, staff, and contractors utilizing DESE school facilities. The secondary objectives of the O&M Plan include: 1) the in-place maintenance of asbestos containing material (ACM) until it is to be removed; 2) the minimization of potential release of asbestos fibers during cleaning, maintenance, renovation, and general school operation activities; and 3) the removal of deteriorated ACM that is beyond the scope of normal maintenance or repair activities.

2.0 INTRODUCTION

Asbestos Inspection data provided by OCCU-TEC Inc. and Jurgiel & Associates Inc. was used as a reference in the generation of this Operation and Maintenance (O&M) Plan. To help protect students and workers at 38 DESE school sites located throughout the State of Missouri, OCCU-TEC Inc. has produced this (O&M) plan for ACMs known to be present in the DESE school facilities. This O&M plan should only be used by properly trained state personnel and contract workers. Training requirements are summarized in Section 4.2.

3.0 SURVEY FINDINGS

Previous and recent inspections of DESE facilities have identified both friable and non-friable asbestos containing materials. Asbestos containing material (ACM), is defined by the EPA and OSHA as a material which contains a measurable asbestos content of greater than one percent (>1%.).

Friable asbestos containing materials are defined as a material that when dry may be crumbled, pulverized, or reduced to powder by hand pressure. Friable asbestos containing material can include previously non-friable material after such material has become damaged to the extent that when dry, it may be crumbled, pulverized, or reduced to powder by hand pressure.

4.0 PLAN COMPONENTS

The work practices described in this plan are applicable to repair, maintenance and cleaning operations where friable or nonfriable ACM or presumed asbestos-containing material (PACM), are involved. The work practices are intended to assist state personnel meet EPA worker protection rules and contract workers meet Occupational Safety and Health Administration (OSHA) regulations applicable to O&M work. DESE will maintain the O&M Plan for all school facilities and coordinate any cleaning, maintenance, renovation, and abatement of asbestos located inside the school facilities.

4.1 TRAINING

Proper worker training is a vital element in worker protection. The work practices described in this plan should be implemented in conjunction with proper worker training. EPA Asbestos Worker Protection Rules [40 CFR Part 763, Subpart G], EPA Asbestos Model Accreditation Plan [40 CFR 763], OSHA Construction Standard [Title 29, CFR 1926.1101], and OSHA General Industry Standard [Title 29, CFR 1910.1001] require various levels of training depending on the work practices involved; and cross-reference each other in specifying training requirements. In general, the requirements outlined in the EPA Asbestos Model Accreditation Plan provide the type, duration, and topics to be covered for various classes of training. The following is a list of pertinent training that state workers or contractors should receive prior to performing work that may disturb ACM.

- **Asbestos Contractor/Supervisor**: Personnel who supervise Class I and II asbestos work must complete 40 hours of asbestos contractor/supervisor training. Eight hour refresher course is required annually for certification to be maintained.

- **Asbestos Abatement Worker**: Thirty-two hours of training must be completed by personnel who perform Class I, and in some circumstances, Class II asbestos work. Class I and II asbestos work includes removal or encapsulation of ACM where the sole intent of a project being performed is to abate asbestos. Eight hour refresher course is required annually to maintain certification.

- **Operations and Maintenance**: Sixteen hours of training shall be completed by personnel who perform Class III asbestos work. Annual refresher training is required, but no minimum number of hours is specified. The "competent person" determines the level of training required for personnel performing O&M work. A competent person is defined by OSHA as “one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f): in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2).”
- **General Awareness**: Two hours of training must be completed by personnel who perform Class IV asbestos work and maintenance and custodial staff who work in buildings containing ACM.

The amount and content of worker training must meet OSHA and EPA minimum requirements. General subject areas that all O&M training should include… personal protective equipment and respirator training where applicable; health risks associated with asbestos exposures; and the importance of carefully adhering to building O&M programs.

The 16-hour Operations & Maintenance training should emphasize hands-on removal, maintenance, and repair methods. The workers should learn how to use the O&M plan, how to perform specific tasks including glovebag removal methods and constructing negative pressure mini-enclosures.

4.2 NOTIFICATION

As required by OSHA, DESE must make notification to the following personnel about the presence, location and quantity of ACM or PACM:

- Employees
- Prospective employees, vendors, and contractors applying for or bidding for work

This notification is required if employees or contractors will be performing work in or adjacent to areas where ACM or PACM is located. Asbestos warning labels should be visible in mechanical spaces such as boiler rooms and pipe chases. The building owner shall post signs that identify the material that is present, its location, and appropriate work practices which, if followed, will ensure that ACM will not be disturbed. The employer shall ensure, to the extent feasible, that employees who come in contact with these signs can comprehend them. Means to ensure employee comprehension may include the use of foreign languages, pictographs, and graphics. Missing or worn-out labels should be replaced, as needed. As the ACM is abated and new non-ACM material is installed, replacement material should be labeled as non-ACM. This assures that all workers are aware that the new material does not contain asbestos.

4.2.1 Employees

DESE must notify affected employees of the existence of ACM that they could potentially disturb during the course of their employment. Notification could be made to employees by utilizing notification forms as contained in Appendix A. The obligation to notify extends beyond those employed by the owner and includes anyone who may disturb or contact these materials. Maintenance workers (whether directly employed by the owner or by a maintenance contractor), building occupants, contractors, and those working for contractors are all included.

All maintenance workers must be advised and trained in the proper procedures to follow when their work involves possible contact with ACM. The information given to employees and occupants must contain the following:

- The location and condition of the ACM in their area.
- Do not disturb ACM(s).
- Report any change of condition, evidence of disturbance (such as dust or debris), or damage of ACM to supervisor or management.
- A statement that the mere presence of ACM does not present a health hazard; Asbestos is a potential health hazard when fibers become airborne and are inhaled.
- A statement that cleaning and maintenance personnel must take special precautions to guard against disturbing ACM.
- A statement indicating that ACM is inspected periodically and additional measures taken, if needed, to protect the health of building occupants/employees.

DESE limits its trained maintenance staff to small quantity, short-duration repair and O&M work. In general, in-house personnel are limited to those activities that can be performed without entering into an environment where there is an elevated level of airborne asbestos. If there has been an episode where ACM has been released into the building environment, employees must be instructed to notify the appropriate personnel immediately to insure the appropriate response can be implemented. Any air monitoring results must be shared with the occupants and employees.

4.2.2 Contractors

The asbestos O&M program includes control over contracted services as described below.

Custodial work: Contractors involved in cleaning and other custodial services which are in the vicinity, but do not disturb, asbestos-containing installations, debris, or dust must be notified of the location of ACM by DESE utilizing the Contractor's Acknowledgement Form or similar form found in Appendix B. This Acknowledgement Form should be signed by the contractor who employs the workers and then returned to DESE for documentation of the notification.

Repair and maintenance: Repair or maintenance in controlled areas or on controlled systems where asbestos may be disturbed require specific work procedures using trained workers. Specifications for ACM removal should be made a part of a set of contract documents.

DESE is responsible for notifying any contractor working onsite of asbestos hazards; the contractor is responsible for notifying his employees. This could be accomplished by utilizing the form in Appendix B. The contractor must be held responsible for performing his work without disturbing any remaining asbestos identified in surveys, drawings, or specifications.

4.3 RESPIRATORY PROTECTION

Respiratory protection is required under OSHA 1926.1101 anytime:

- Class I asbestos work is undertaken
- Class II asbestos work is undertaken where the ACM is not removed in a substantially intact state.
- Class II and III asbestos work which is not performed using wet methods. An example of this would be working around live electrical outlets.
- Class II and III asbestos work for which a "negative exposure assessment" hasn't been conducted.
- Class III asbestos work when TSI or surfacing ACM or PACM is being disturbed.
- Class IV asbestos work performed in regulated areas where employees performing asbestos work are required to use respirators.
- If respiratory protection is required, DESE must implement a respiratory protection program in accordance OSHA Construction Standard [29 CFR 1926.1101] and Asbestos Worker Protection Rules [40 CFR Part 763, Subpart G].

No employee shall be assigned to asbestos work that requires respirator use if, based on their most recent medical examination, the examining physician determines that the employee will be unable to function normally while using a respirator, or that the safety or health of the employee or other employees will be impaired by the employee's respirator use. Such employees must be assigned to another job or given the opportunity to transfer to a different position that they can perform. For a transfer to occur, it must be with the same employer, in the same geographic area, and with the same seniority, status, rate of pay, and other job benefits the employee had just prior to such transfer.

4.3.1 **Respirator Selection.**

1. The employer shall select the appropriate respirator as specified in the table below.

TABLE 1
RESPIRATORY PROTECTION FOR ASBESTOS FIBERS

AIRBORNE CONCENTRATION OF ASBESTOS OR CONDITION OF USE	REQUIRED RESPIRATOR
Not in excess of 1 f/cc (10 X PEL), or otherwise as required independent of exposure pursuant to (h)(2)(D)of this section.	Half-mask air purifying respirator other than a disposable respirator, equipped with high efficiency filters.
Not in excess of 5 f/cc (50 X PEL).	Full facepiece air-purifying respirator equipped with high efficiency filters.
Not in excess of 10 f/cc (100 X PEL).	Any powered air-purifying respirator equipped with high efficiency filters or any supplied air respirator operated in continuous flow mode.
Not in excess of 100 f/cc (1,000 X PEL).	Full facepiece supplied air respirator operated in pressure demand mode.
Greater than 100 f/cc (1,000 X PEL) concentration.	Full facepiece supplied air or unknown respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus.

Note: a. Respirators assigned for high environmental concentrations may be used at lower concentrations, or when required respirator use is independent of concentration.

Note: b. A high efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 micrometers in diameter or larger.

2. The employer shall provide a tight fitting powered, air- purifying respirator in lieu of any negative-pressure respirator specified in the table above whenever:
   a. An employee chooses to use this type of respirator; and
   b. This respirator will provide adequate protection to the employee.

4.4 MEDICAL EXAMINATIONS

DESE shall ensure that all medical examinations and procedures are performed by a licensed physician, and are provided at no cost to the employee and at a reasonable time and place.

The employer shall make available medical examinations and consultations to each employee covered under 29 CFR 1926.1101 on the following schedules:

Prior to assignment of the employee to an area where negative- pressure respirators are worn;

When the employee is assigned to an area where exposure to asbestos may be at or above the permissible exposure limit for 30 or more days per year, or for employees who engage in Class I, II or III work for a combined total of 30 or more days per year. For either situation, a medical examination must be given within 10 working days following the thirtieth day of exposure. A medical examination must be provided at least annually thereafter.

If the examining physician determines that any of the examinations should be provided more frequently than specified, the employer shall provide such examinations to affected employees at the frequencies specified by the physician. DESE shall provide a medical examination at the termination of employment for any employee who has been exposed to airborne concentrations of asbestos at or above the permissible exposure limit and/or excursion limit. The medical examination shall be given within 30 calendar days before or after the date of termination of employment.

4.5 PERSONAL PROTECTIVE EQUIPMENT

1. DESE shall provide or require the use of protective clothing, such as coveralls or similar whole-body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos that exceed the TWA and/or excursion limit prescribed in 29 CFR 1926.1101. The above statement also applies to all employees for whom a required negative exposure assessment has not been produced, and for any employee performing Class I operations which involve the removal of > 25 linear or 10 square feet of TSI or surfacing ACM or PACM.

2. DESE shall prohibit the removal of asbestos from protective clothing and equipment by blowing, shaking, or brushing.

3. Laundering.
   a. The employer shall ensure that laundering of contaminated clothing so as to prevent release of airborne asbestos in excess of the TWA or excursion limit prescribed in 29 CFR 1926.1101.
   b. Any employer who gives contaminated clothing to another person for laundering shall inform such person of the contamination to avoid the release of airborne asbestos in excess of the TWA and excursion limit prescribed in 29 CFR 1926.1101.
   c. Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and be labeled in accordance with 29 CFR 1926.1101.

4. Inspection of protective clothing.
   a. The competent person shall examine worksuits worn by employees at least once per workshift for rips or tears that may occur during performance of work.
   b. When rips or tears are detected while an employee is working, rips and tears shall be immediately mended, or the worksuit shall be immediately replaced.

4.6 WORK PRACTICES

This section briefly describes the OSHA classifications of asbestos work. In addition, a discussion is presented outlining the steps necessary to ensure that safe work practices are properly implemented.

The OSHA Construction Standard [Title 29, CFR Part 1926.1101] provides detailed work practice and engineering control requirements based on four classifications of asbestos work. In general, Class I work poses the greatest risk and Class IV poses the least. The classes are summarized below:

- **Class I**: Activities involving the removal of thermal system insulation (TSI) and sprayed-on, troweled-on, or otherwise applied surfacing ACM and PACM applied to pipes and boilers. Class I work is generally accomplished by licensed, professional asbestos abatement contractors.

- **Class II**: Activities involving the removal of asbestos-containing floor tile and associated mastics, wallboard, joint compounds, sheet flooring, roofing, transite, gaskets, and similar materials.

- **Class III**: Repair and maintenance operations where ACM (including TSI and surfacing ACM and PACM) are likely to be disturbed. Examples of Class III asbestos work include disturbance and repair of small amounts of pipe insulation in the course of repairing a leaking valve; removal of small amounts of an ACM wall to repair electrical wiring; and removal of floor tile and mastic loosened by water damage.

- **Class IV**: Custodial, maintenance, and construction activities during which employees contact, but do not disturb ACM or PACM; this also include activities to clean up waste and debris that may contain ACM or PACM. Examples include cleaning ACM floors, working around electrical and HVAC equipment; and dusting/vacuuming in areas where ACM pipe insulation is present.

Each ACM identified warrants a specific work practice to control exposure. These work practices include routine maintenance, patch and repair, encapsulation, enclosure, and removal. Any of these work practices may disturb or dislodge ACM or render the material friable and, therefore, safe work practices must be followed. The applicable regulations that outline such safe work practices and abatement strategies can be found in the following regulations:

Worker Protection Standards, Construction Industry	OSHA 29 CFR 1926.1101
Worker Protection Standards, General Industry	OSHA 29 CFR 1910.1001
Federal Asbestos Abatement Regulations	EPA NESHAP 40 CFR 61 Subpart M
Federal Asbestos Regulations	EPA AHERA 40 CFR Part 763
Asbestos Worker Protection Rule	EPA AHERA 40 CFR Part 763, Subpart G

These regulations combined with the OSHA and EPA mandated training, are designed to protect workers and control the disturbance/release of airborne asbestos, materials, and debris.

4.6.1 Class I Removal Work (Pipe Insulation, Pipe Fittings, Tank Insulation, Boiler Insulation, Fireproofing, etc.)

It is recommended that this type of asbestos removal work be contracted out to professional, licensed asbestos abatement contractors.

4.6.2 Class II Removal Work (Floor Tile and Mastics, Wallboard and Joint Compounds, Sheet Flooring, Roofing, Transite and Gaskets, etc.)

It is recommended that this type of work by conducted by 32-hour trained personnel overseen by a 40-hour trained supervisor.

The following are general requirements for the removal of these materials:
1. Supervision by a Competent Person as defined by OSHA.
2. Critical barriers covering all openings in the regulated area.
3. Polyethylene sheeting (6-mil) covering all surfaces beneath the removal area.
4. HEPA filtration with local exhaust to the building exterior.
5. Enclosure or isolation of the work area.
6. Wet removal methods wherever feasible.
7. Removal by non-aggressive (non-mechanical) means.
8. Waste double-bagged in 6-mil polyethylene sheeting and labeled with Generator and DOT labels.

4.6.3 Class III Removal Work - Small-Scale, Short-Duration Operations Maintenance and Repair (O&M) Activities.

This work must be conducted by personnel with a minimum of 16-hour O&M training. Small-scale, short-duration is generally defined as removal of a quantity of ACM equal to or less than that which can be removed with a single glovebag, or, 3 square feet, 3 lineal feet.

Small-scale, short-duration renovation and maintenance activities are tasks such as, but not limited to:
- Removal of small quantities of asbestos-containing insulation on pipes or tanks;
- Removal of small quantities of asbestos-containing fireproofing on beams or above ceilings;
- Replacement of an asbestos-containing gasket on a valve;
- Installation or removal of a small section of drywall;
- Installation of electrical conduits through or in close proximity to ACM.
- Installation or removal of a small section of floor tile and mastic.
- Maintenance on asbestos-containing or presumed asbestos-containing fire doors.

Refer to Section 4.7 for procedures for Class III O&M activities.

4.6.4 Class IV Removal Work - Maintenance and custodial construction activities during which employees contact, but do not disturb ACM or PACM.

1. This work shall be conducted by employees trained to the asbestos awareness level or greater.

2. Employees who clean up debris shall assume the debris contains asbestos if the debris is located in areas of accessible thermal system insulation and/or surfacing material. All clean up of debris containing or presumed as ACM, shall be done promptly using wet methods and HEPA vacuums.

3. Employees cleaning up debris and waste in a regulated area where respirators are required shall wear respirators which are selected based upon hazard level, used, and fitted in accordance with OSHA and NIOSH.

4.6.4.1 Procedures for the Maintenance of Asbestos Containing Floor Tile

1. All floor tiles, 9”x 9” and 12”x 12”, must be assumed to be asbestos containing unless proven otherwise. Only if testing has determined floor tiles to be non-asbestos containing may they be handled by non-certified persons.

2. Under no circumstances should broken or crumbled asbestos tiles be swept or cleaned up by non-certified maintenance or custodial persons. The Asbestos Program Manager should be contacted to arrange for the cleanup of any asbestos containing tile.

3. There is generally not a hazard associated with asbestos containing tile that is cracked as long as it is still properly adhered to the floor. However, the condition of cracked asbestos containing tile should be monitored closely.

4. If asbestos containing tiles are delaminating or are loose, they may be re-glued. Depending on the situation and condition of the tile, tiles needing to be removed/disposed of should be handled by asbestos certified personnel.

5. No buffing shall be performed on asbestos containing tiles that have not been sealed or finished in some manner. Dry buffing shall be performed only after sufficient coats of sealer or finish have been applied to protect the tile from being disturbed. Use the least abrasive pad possible to protect against breaking through the finish and disturbing the surface of the tile.

6. If during buffing, asbestos floor tile is dislodged or broken, stop work and contact the Asbestos Program Manager immediately to schedule the proper clean up of the tile.

7. Stripping of asbestos floor tile shall be done wet. At no time will dry stripping be allowed. If during the stripping procedure the asbestos containing tiles become dislodged, stop the procedure and notify the Asbestos Program Manager immediately.

8. During buffing or stripping of asbestos floor tiles, the least abrasive pad should be used at a speed of no greater than 300 rpm.

4.7 PROCEDURES FOR CLASS III O&M ACTIVITIES

1. The first step in preparing to perform a small-scale, short-duration O&M task, regardless of the method that will be used, is the removal of all movable objects from the work area to protect them from asbestos contamination. If objects have already been contaminated, they should be thoroughly cleaned with a HEPA filtered vacuum or be wet-wiped before they are removed from the work area. Objects that cannot be removed should be thoroughly cleaned with a HEPA filtered vacuum or be wet-wiped and covered completely with 6-mil-thick polyethylene plastic sheeting before the task begins.

2. Critical barriers covering all openings in the regulated area.

3. Polyethylene sheeting (6-mil) covering all surfaces beneath the removal area.

4. HEPA filtration with local exhaust to the building exterior if feasible. If using a mini-containment, a hepa-vacuum may be adequate to supply negative pressure.

5. Enclosure or isolation of the work area.

6. The work shall be performed using wet methods.

7. Where the disturbance involves drilling, cutting, abrading, sanding, chipping, breaking, or sawing of thermal system insulation or surfacing material, the employer shall use impermeable dropcloths, and shall isolate the operation using mini-enclosures or glove bag systems or another isolation method.

8. Employees performing Class III jobs shall wear respirators which are selected based upon hazard level, and used, fitted in accordance with OSHA and NIOSH, whenever there is disturbance of thermal system insulation or surfacing material, or where the employer does not produce a "negative exposure assessment" or where monitoring results show a PEL has been exceeded,

4.7.1 Wet methods

Whenever feasible, and regardless of the abatement method to be used (e.g., removal, enclosure, use of glove bags), wet methods must be used during small-scale, short-duration maintenance and renovation activities that involve disturbing ACM. Handling asbestos materials wet is one of the most reliable methods of minimizing the potential for asbestos fibers to become airborne. Wet methods can be used in the great majority of workplace situations. Only in cases where asbestos work must be performed on live electrical equipment, on live steam lines, or in other areas where water will seriously damage materials or equipment may dry removal be performed. Amended water or another wetting agent should be applied by means of an airless sprayer to minimize the extent to which the ACM is disturbed. ACM should be wetted at the initiation of the maintenance or renovation operation, and continually throughout the work period to ensure that any dry ACM exposed in the course of the work remains wet until final disposal.

4.7.2 Removal or repair of small quantities of ACM.

Several methods can be used to remove or repair small amounts of ACM during O&M tasks. These include the use of glove bags and the construction of mini-enclosures. The procedures that employers must use for each of these operations are described in the following sections.

4.7.3 Glove bags

Glove bags for O&M activities are approximately 40-inch-wide by 64-inch-long bags fitted with arms through which the work can be performed. When properly installed and used, they permit workers to remain completely isolated from the asbestos material being removed inside the bag. Glove bags can thus provide a flexible, easily installed, and quickly dismantled temporary small work area enclosure that is ideal for small-scale asbestos renovation or maintenance jobs. These bags are single-use control devices that are disposed of at the end of each task. The bags are made of transparent 6-mil polyethylene plastic with arms of spun-bonded polyolefin material (the same material used to make the disposable protective suits used in major asbestos removal operations and in protective gloves). Glove bags are readily available from safety supply stores or specialty asbestos removal supply houses. Glove bags come pre-labeled with the asbestos warning labels required by OSHA, Department of Transportation (DOT), and EPA for bags used to transport and dispose of asbestos waste.

Supplies and materials that are necessary for the use of glove bags include:

- Tape to seal glove bag to the area from which asbestos is to be removed.
- Amended water (water with an added surfactant) or other wetting materials.
- An airless sprayer for the application of amended water.
- Bridging encapsulant (a paste-like substance for coating asbestos) to seal the rough edges of any ACM that remains within the glove bag at the points of attachment after the rest of the asbestos has been removed.
- Tools such as razor knives, nips, and wire brushes (or other tools suitable for cutting wires, etc.).
- A HEPA filter-equipped vacuum for evacuating the glove bag (to minimize the release of asbestos fibers) during removal of the bag from the work area and for cleaning any material that may have escaped during the installation of the glove bag.
- HEPA filtered or more protective respirators for use by the employees involved in the removal of asbestos with the glove bag.

Glove bag work practices.

The proper use of glove bags requires the following steps:

1. Glove bags must be installed so that they completely cover the pipe or other structure where asbestos work is to be done. Glove bags are installed by cutting the sides of the glove bag to fit the size of the pipe from which asbestos is to be removed. The glove bag is attached to the pipe by folding the open edges together and securely sealing them with tape. All openings in the glove bag must be sealed with duct tape or equivalent material.

2. The employee performing the asbestos removal with the glove bag must don at least a half face HEPA-equipped respirator. Respirators must be worn by employees who are in close contact with the glove bag and who may thus be exposed as a result of small gaps in the seams of the bag or holes punched through the bag by a razor knife or a piece of wire mesh.

3. The removed asbestos material from the pipe or other surface must be adequately wetted with amended water applied with an airless sprayer through the precut port provided in most glovebags or applied through a small hole in the bag.

4. Once the asbestos material has been adequately wetted, it can be removed from the pipe, beam, or other surface. The tool used to remove the ACM depends on the type of material to be removed. ACM is generally covered with painted canvas and/or wire mesh. Painted canvas can be cut with a razor knife and peeled away from the ACM underneath. Once the canvas has been peeled away, the ACM underneath may be dry, in which case it should be re-sprayed with amended water to ensure that it generates as little dust as possible when removed. If the ACM is covered with wire mesh, the mesh should be cut with nips, tin snips, or other appropriate tool and removed. Amended water must then be used to spray any layer of dry material that is exposed beneath the mesh, the surface of the stripped underlying structure, and the inside of the glove bag.

5. After removing the layer of ACM, the pipe or surface from which asbestos has been removed must be thoroughly cleaned with a brush and wet-wiped with amended water until no traces of the ACM can be seen.

6. Any asbestos-containing insulation edges that have been exposed as a result of the removal or maintenance activity must be encapsulated with bridging encapsulant to ensure that the edges do not release asbestos fibers to the atmosphere after the glove bag has been removed.

7. When the asbestos removal and encapsulation have been completed, a vacuum hose from a HEPA-filtered vacuum must be inserted into the glove bag through the port to remove any air in the bag that may contain asbestos fibers. When the air has been removed from the bag, the bag should be squeezed tightly (as close to the top as possible), twisted, and sealed with tape, to keep the removed materials safely in the bottom of the bag. The HEPA vacuum can then be removed from the bag and the glove bag itself can be removed from the work area to be disposed of properly.

4.7.4 Mini-Enclosures

In some instances a glove bag may not be either large enough or the proper shape to enclose the work area. In such cases, a mini-enclosure can be built around the area where small-scale, short-duration asbestos maintenance or renovation work is to be performed. Such enclosures should be constructed of 6-mil polyethylene plastic sheeting and be small enough to restrict entry to the asbestos work area to one worker.

For example, a mini-enclosure can be built in a small utility closet when asbestos-containing drywall or drywall joint compound is to be removed. The enclosure is constructed by:

1. Affixing 6-mil polyethylene sheeting to the walls with spray adhesive and tape.

2. Covering the floor with 6-mil polyethylene sheeting and sealing the plastic covering the floor to the outside of the plastic on the walls.

3. Sealing any penetrations such as pipes or electrical conduits with tape; and using a HEPA vacuum to maintain negative pressure inside the work area.

4. Constructing a small change room (approximately 3 feet square) made of 6-mil polyethylene plastic supported by 2-inch by 4-inch lumber (the plastic should be attached to the lumber supports with staples or spray adhesive and tape). The change room should be contiguous to the mini-enclosure, and is necessary to allow the worker to vacuum off his protective coveralls and remove them before leaving the work area. While inside mini-enclosure, the worker should wear spun-bonded polyolefin disposable coveralls and use the appropriate HEPA-filtered or more protective respiratory protection.

The advantages of mini-enclosures are that they limit the spread of asbestos contamination, reduce the potential exposure of bystanders and other workers who may be working in adjacent areas, and are quick and easy to install. The disadvantage of mini-enclosures is that they may be too small to contain the equipment necessary to create a negative pressure within the enclosure; however, the double layer of plastic sheeting will serve to restrict the release of asbestos fibers to the area outside the enclosure.

4.7.5 Removal of small quantities of asbestos insulated pipes or structures

When pipes are insulated with ACM, removal of the entire pipe may be more protective, easier, and more cost effective than stripping the asbestos insulation from the pipe. Before such a pipe is cut, the asbestos-containing insulation must be wrapped with 6-mil polyethylene plastic and securely sealed with duct tape or equivalent. This plastic covering will prevent asbestos fibers from becoming airborne as a result of the vibration created by the power saws used to cut the pipe. If possible, the pipes should be cut at locations that are not insulated to avoid disturbing the asbestos. If a pipe is completely insulated with ACM, small sections should be stripped using the glove-bag method described above before the pipe is cut at the stripped sections.

4.7.6 Enclosure of ACM

The decision to enclose rather than remove ACM from an area depends on the employer's preference. Employers consider factors such as cost effectiveness, the physical configuration of the work area, and the amount of traffic in the area when determining which abatement method to use. If enclosure is chosen over removal, a solid structure with airtight walls and ceilings must be built around the ACM or structure to prevent the release of asbestos fibers into the area beyond the enclosure and to prevent the disturbance of these materials by casual contact during future maintenance operations.

Such a permanent (i.e., for the life of the building) enclosure should be built of non-asbestos new construction materials and be impact resistant and airtight. Enclosure walls should be made of tongue-and-groove boards, boards with spine joints, or gypsum boards having taped seams. The underlying structure must be able to support the weight of the enclosure. (Suspended ceilings with laid-in panels do not provide airtight enclosures and should not be used to enclose structures covered with ACM). All joints between the walls and ceiling of the enclosure should be caulked to prevent the escape of asbestos fibers. During the installation of enclosures, tools that are used (such as drills or rivet tools) should be equipped with HEPA-filtered vacuums. Before constructing the enclosure, all electrical conduits, telephone lines, recessed lights, and pipes in the area to be enclosed should be moved to ensure that the enclosure would not have to be re-opened later for routine or emergency maintenance. If such lights or other equipment cannot be moved to a new location for logistic reasons, or if moving them will disturb the ACM, removal rather than enclosure of the ACM is the appropriate control method to use.

4.7.7 Maintenance program for ACM

An asbestos maintenance program must be initiated in all facilities that have ACM. Such a program should include:

- Development of an inventory of all ACM in the facility.
- Periodic examination of all ACM to detect deterioration.
- Written procedures for handling ACM during the performance of small-scale, short-duration maintenance and renovation activities.
- Written procedures for asbestos disposal.
- Written procedures for dealing with asbestos-related emergencies.
- Training of staff in safe work procedures.

4.7.8 Maintenance program for Fire Doors

These procedures provide general guidance for the maintenance of presumed asbestos-containing fire doors.

1. Compliance with OSHA, State of Missouri, and EPA-AHERA regulations require that comprehensive asbestos inspections be completed prior to any renovation or demolition

activities in order to protect occupant and worker health. Any service to a presumed asbestos-containing fire door that could potentially disturb the core (i.e. drilling or cutting into the core,) qualifies as repair or maintenance and requires characterization for the presence of asbestos.

2. In order to comply with the above referenced regulations, State employees (i.e custodians, locksmiths, etc.) or outside contractors will not conduct any activity on presumed fire doors that involves drilling, cutting, abrading, or any other disturbance of the core until the presence or absence of asbestos can be verified.

3. The presence of asbestos cannot be verified by the appearance of the door, nor does the age of the door necessarily indicate whether the door contains asbestos. In the event that a suspect fire door must be serviced and that service may disturb the core of the door, one of the following steps should be followed:

   a) Presume that the door contains asbestos.
   b) Examine the plate or label on the door spine. The door core material may be listed on this plate. The information on the plated may be used to confirm the presence of asbestos, but the plate alone is not sufficient to determine that asbestos is not present.
   c) Contact the manufacturer for information on materials used for construction.
   d) Have a licensed asbestos inspector sample the door core material in an appropriate manner for the presence of asbestos.

4. If the doors are asbestos-containing or presumed to contain asbestos, the removal of the door must be conducted by a qualified abatement contractor. Doors containing asbestos or presumed to contain asbestos must be disposed of in an appropriate MDNR approved landfill, and cannot be disposed of as normal waste.

5. If DESE personnel intend to service asbestos-containing or presumed asbestos-containing fire doors, this would be considered a Class III work activity, requiring 16 hours of O&M training, proper equipment, proper PPE (personal protective equipment), and disposal.

4.8 PROHIBITED ACTIVITIES

The training program for the maintenance and custodial staff should describe methods of handling ACM as well as routine maintenance activities that are prohibited when ACM is involved.

For example, DESE maintenance staff employees should be instructed:

- Not to drill holes in ACM.
- Not to hang plants or pictures on structures covered with ACM.
- Not to sand ACM including floor tile. Stripping of floor tile finishes shall be conducted using low abrasion pads at speeds lower than 300 rpm with wet methods.
- Not to damage ACM while moving furniture or other objects.

- Not to install curtains, drapes, or dividers in such a way that they damage ACM.
- Not to dust floors, ceilings, moldings or other surfaces in asbestos-contaminated environments with a dry brush or sweep with a dry broom.
- Not to use an ordinary vacuum to clean up asbestos-containing debris.
- Not to remove ceiling tiles from below ACM without the use of proper respiratory protection, clearing the area of other people, and observing asbestos removal waste disposal procedures.
- Not to remove contaminated ventilation filters dry.
- Not to shake ventilation filters that are contaminated with ACM.

4.9 REMOVAL PROCEDURES FOR SPECIFIC MATERIALS

4.9.1 For Non-friable Flooring Materials

The following procedures shall be used to remove ACM flooring materials:

1. Isolate or shut down, lock-out and tag-out HVAC system (and other building systems that may create a hazard during the removal activity) in compliance with all local, state, and federal regulations and as specified in the Specification/Work Plan.
2. Regulate and isolate the work area with warning signs, barrier tape, and critical barriers in compliance with all local, state, and federal regulations and as specified in the Specification/Work Plan.
3. Upon approval of the work site preparation by consultant or delegated authority, contractor may proceed to remove the material using the below listed procedures.
4. Place tools, equipment and materials needed in work area.
5. Spray amended water ACM prior to start of removal.
6. Do not cut, abrade, or break ACM.
7. Dry sweeping is prohibited.
8. All scraping of residual adhesive and/or backing shall be performed using wet methods.
9. Removal of flooring by mechanical means is prohibited.
10. Tiles shall be removed intact, unless intact removal is not possible.
11. When tiles are heated and can be removed intact, wetting may be omitted
12. Do not allow ACM to drop from elevated heights. Always carry disposal bag to the ground; do not drop.
13. If material can cut through the disposal bags, place ACM into one 6 mil bag and then into barrels for fiber drums.
14. Clean up any debris or dust using HEPA vacuuming and wet wiping.

15. Notify consultant or delegated authority that work is complete so that a visual inspection and any clearance air monitoring can be conducted.
16. Upon passage of the visual inspection and clearance air monitoring (if conducted), warning signs, barrier tape, and critical barriers may be removed.

4.9.2 For Miscellaneous Non-Friable Materials

The following procedures shall be used to remove other non-friable ACM:

1. Isolate or shut down, lock-out and tag-out HVAC system (and other building systems that may create a hazard during the removal activity) in compliance with all local, state, and federal regulations and as specified in the Specification/Work Plan.
2. Regulate and isolate the work area with warning signs, barrier tape, and critical barriers in compliance with all local, state, and federal regulations and as specified in the Specification/Work Plan.
3. Upon approval of the work site preparation by consultant or delegated authority, contractor may proceed to remove the material using the below listed procedures.
4. Put down polyethylene drop cloth below removal area to catch any debris generated during removal.
5. Place tools, equipment and materials needed in work area.
6. Spray amended water ACM prior to start of removal.
7. Do not cut, abrade, or break ACM.
8. Do not allow ACM to drop from elevated heights. Always carry disposal bag to the ground, do not drop.
9. If material can cut through the disposal bags, place ACM into one 6 mil bag and then into barrels for fiber drums.
10. Clean up any debris or dust using HEPA vacuuming and wet wiping.
11. Notify consultant or delegated authority that work is complete so that a visual inspection and any clearance air monitoring can be conducted.
12. Upon passage of the visual inspection and clearance air monitoring (if conducted), warning signs, barrier tape, and critical barriers may be removed.

4.9.3 For Miscellaneous Friable Materials

The following procedures shall be used to remove friable ACM:

1. Isolate or shut down, lock-out and tag-out HVAC system (and other building systems that may create a hazard during the removal activity) in compliance with all local, state, and federal regulations and as specified in the Specification/Work Plan.

2. Regulate and isolate the work area with warning signs, barrier tape, and critical barriers in compliance with all local, state, and federal regulations called out in the Specification/Work Plan.
3. Set up a negative pressure enclosure around the work area in compliance with all local, state, and federal regulations and as specified in the Specification/Work Plan.
4. Construct hygiene facilities with an equipment room; shower area; clean change room; lunch areas; decontamination of workers, equipment and containers in compliance with all local, state, and federal regulations and as specified in this Specification/Work Plan.
5. Upon approval of the work site preparation by consultant or delegated authority, contractor may proceed to remove the material using the below listed procedures.
6. Place tools, equipment and materials needed into enclosure.
7. HEPA vacuum the work area.
8. Thoroughly wet the asbestos-containing material to be removed to reduce fiber dispersal into the air. Accomplish wetting by a fine spray (mist) of amended water. Saturate material sufficiently to wet to the substrate without causing excess dripping. Allow time for water to penetrate material thoroughly. Spray material repeatedly with amended water during the work process to maintain a continuously wet condition.
9. Mist work area continuously with amended water whenever necessary to reduce airborne fiber levels using commercially available "foggers."
10. Remove saturated asbestos-containing material in small sections from all areas. Do not allow material to dry out. As it is removed, simultaneously pack material while still wet into disposal bags. Twist neck of bags, bend over and seal with minimum three wraps of duct tape. Clean outside and move to wash down station adjacent to material decontamination unit.
11. Pick up any debris and place into disposal bags. HEPA vacuum and wet wipe any dust generated.
12. Use nylon brushes and wet rags to clean any residual asbestos-containing material from the area. Lightly mist with a lock-down encapsulant the area where the material was removed and 6inches to 12 inches around the area. This will lock down any fibers which may have settled onto the vicinity adjacent to the work area. The HEPA vacuum should be continuously running during the final cleaning and encapsulating work.
13. Notify consultant or delegated authority that work is complete so that a visual inspection and any clearance air monitoring can be conducted.
14. Upon passage of the visual inspection and clearance air monitoring (if conducted), warning signs, barrier tape, mini-containment and critical barriers may be removed.
15. Attach appropriate asbestos warning labels to the outside of the second layer of wrapping and properly dispose of material as friable ACM waste.

5.0 REINSPECTION PROGRAM

A reinspection program is an integral part of the O&M program. Periodic surveillance of all ACM in DESE facilities is conducted every six months. Friable materials are re-inspected by certified Asbestos Inspectors every three years. The condition of ACM is recorded and based upon the assessment; the appropriate response actions are undertaken.

Each homogenous area of friable surfacing ACM, thermal system ACM, and miscellaneous ACM should be categorized in one of the following Asbestos Hazard Emergency Response Act (AHERA) assessment categories:

1) Damaged or significantly damaged thermal system insulation
2) Damaged friable surfacing ACM
3) Significantly damaged friable surfacing ACM
4) Damaged or significantly damaged friable miscellaneous ACM
5) ACM with potential for damage
6) ACM with potential for significant damage
7) Any remaining friable ACM or friable suspected ACM

During all periodic surveillance and reinspections, the inspector should advise DESE of any changes in condition or potential problem areas.

6.0 RECORDKEEPING

All asbestos related records must be retained to comply with all Federal, State, and Local regulations. Records that are required to be maintained include, but are not limited to, the following:

- Employee training records for one year beyond the last date of each worker's employment.
- Inspection, reinspection, and assessment reports of all buildings surveyed indefinitely.
- Asbestos related employee medical records for duration of employment plus 30 years.
- OSHA personnel air sampling records for 30 years.
- A copy of this O&M program.
- All disposal documentation for a minimum of 30 years, but recommended to be kept indefinitely.

7.0 EMERGENCY PROCEDURES

If a release or suspected release of asbestos fibers occurs, evacuate the area of concern and call:

Cody Block at 573-298-1980

Clean up of asbestos spills must be performed by specially trained personnel. Proper procedures must be followed to reduce the spread of asbestos fibers after a release has occurred. Depending on the severity of the release, an asbestos contractor may need to be called to conduct the cleanup operation.

8.0 CERTIFICATION OF REPORT

The information contained in this report has been generated by OCCU-TEC Inc.

If there are any questions as to condition of ACM in select locations throughout the facility, quantities of original identified ACM remaining in the facility, or identification of non-friable ACM, a thorough reinspection by an accredited Asbestos Inspector should be conducted.

This operations and maintenance program has been developed by Mr. Jay Hurst of OCCU-TEC Inc. If questions arise concerning this operations and maintenance plan, please call OCCU-TEC Inc. at (816) 231-5580.

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Jay Hurst
Missouri Certified Asbestos Inspector / Management Planner