



**3345 Sherlock Balcony
Replacement**

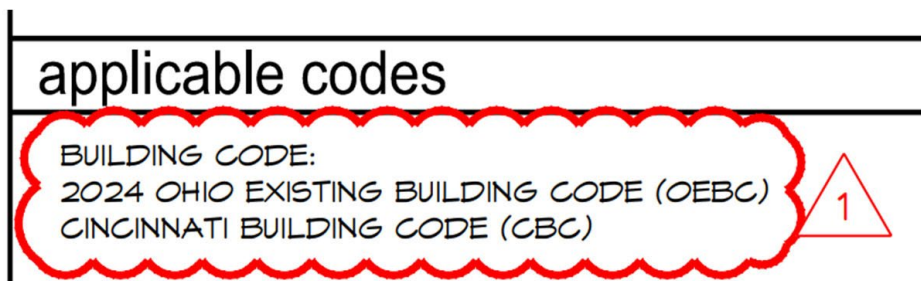
To Offerors:

The following additions, deductions, changes and corrections to the proposal and specifications for the above referenced project shall hereby be incorporated into the work, and their effect on the proposal shall be reflected in the Offeror's proposal. Offerors shall also verify this fact by indicating the receipt of the addendum in their proposal.

TO ALL BIDDERS:

DRAWING CLARIFICATIONS:

Item No. 1: Sheet T1.1 change applicable building codes to read:



SPECIFICATION CLARIFICATIONS:

Item No. 2: Specification Section 07 92 00 JOINT SEALANTS has been added.

Item No. 3: Duplicate Specification Section 02 41 19 SELECTIVE DEMOLITION has been removed.

Item No. 4: Some specification sections were out of order, the entire specification manual is attached to this addendum with corrections made.

GENERAL INFORMATION:

Item No. 5: The building permit has been applied for and is approved. The permit number for this project is: 2025P04950 - 3345 SHERLOCK AV

The amount due to be paid by the awarded contractor is: \$3,428.92.

END OF ADDENDUM NO. 1

PROJECT MANUAL

CMHA SHERLOCK APARTMENTS

3345 Sherlock Avenue
Cincinnati, Ohio 45220



Owner:
Cincinnati Metropolitan Housing Authority
1627 Western Avenue
Cincinnati, Ohio 45214
Greg Johnson, MS, PHM, EDEP, Chief Executive Officer

Bid Specifications

January 30, 2025
REVISED: August 7, 2025



O R E G O N G R O U P A R C H I T E C T S

DOCUMENT 00 01 10

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END OF DOCUMENT

SECTION 01 00 00

GENERAL REQUIREMENTS

PART 2 GENERAL

2.1 SECTION INCLUDES

- A. Summary:
 - 1. Contract description.
 - 2. Contractor's use of premises.
 - 3. Time for completion.
 - 4. Notice of completion.
 - 5. Specification conventions.
- B. Price and Payment Procedures:
 - 1. Unforeseen conditions.
 - 2. Schedule of values.
 - 3. Applications for payment.
 - 4. Change procedures.
- C. Administrative Requirements:
 - 1. Coordination.
 - 2. Field engineering.
 - 3. Special Test Inspections.
 - 4. Computer File Waiver & Fees
 - 5. Pre-construction & pre-installation meetings.
 - 6. Progress meetings.
 - 7. Equipment electrical characteristics and components.
 - 8. Cutting and patching.
- D. Submittals:
 - 1. Submittal procedures.
 - 2. Construction progress schedules.
 - 3. Proposed products list.
 - 4. Product data.
 - 5. Shop drawings.
 - 6. Samples.
 - 7. Manufacturer's instructions.
 - 8. Manufacturer's certificates.
 - 9. Contractor's submittals and qualifications
- E. Quality Requirements:
 - 1. Quality control.
 - 2. Tolerances.
 - 3. References.
 - 4. Manufacturer's field services and reports.
 - 5. Examination.
 - 6. Preparation.
- F. Temporary Facilities and Controls:
 - 1. Temporary electricity.
 - 2. Temporary lighting for construction purposes.
 - 3. Temporary heating and cooling.

4. Temporary ventilation.
 5. Telephone and facsimile service.
 6. Temporary water service.
 7. Temporary sanitary facilities.
 8. Pest Control.
 9. Field offices and sheds.
 10. Roads.
 11. Parking.
 12. Progress cleaning and waste removal.
 13. Fire prevention facilities.
 14. Protection of installed work.
 15. Security.
 16. Pollution and environmental control.
 17. Removal of utilities, facilities, and controls.
- G. Product Requirements:
1. Products.
 2. Delivery, handling, storage, and protection.
 3. Product options.
 4. Substitutions.
- H. Execution Requirements:
1. Closeout procedures.
 2. Final cleaning.
 3. Starting of systems.
 4. Demonstration and instructions.
 5. Testing, adjusting and balancing.
 6. Protecting installed construction.
 7. Project record documents.
 8. Operation and maintenance data.
 9. Spare parts and maintenance materials.
 10. Warranties.

2.2 CONTRACT DESCRIPTION

- A. Work of the Project includes site work and balcony replacements at an apartment building in the Cincinnati area. Sherlock Avenue Apartments is located at 3445 Sherlock Avenue and is a 2-story apartment building consisting of 4 apartment units. At Sherlock Avenue Apartments 4 balconies will be renovated.
- B. The work included at Sherlock Avenue Apartments will be bid as one bid package. See General Conditions and Bid Form for description of total bid package.
- C. All site work shall be included during favorable weather seasons.
- D. Sherlock Avenue apartment units will be occupied during construction. Contractor will need to cooperate with Owner and tenants.
- E. Perform Work of Contract under a fixed cost contract with Owner in accordance with Conditions of Contract.

2.3 CONTRACTOR'S USE OF PREMISES

- A. Limit use of premises to allow:
1. Proper flow of traffic at site.

2. Occupancy of building by tenants.
 - B. Hours of Work:
 1. Contractor's on-site work hours shall be 8:00am to 4:30pm Monday thru Friday.
 2. Contractor shall not perform noisy or odor causing work outside of those hours.
 - C. Confine construction operations to within property lines of site.
 1. Keep driveways and entrances serving premises clear and available to Owner, Owner's employees and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Coordinate location of worker's vehicles with Owner.
 2. Schedule deliveries to minimize use of driveways and entrances.
 3. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- 2.4 TIME FOR COMPLETION
- A. See Division 0 front end specifications and General Conditions for contract completion periods.
- 2.5 NOTICE OF COMPLETION
- A. The contractor shall notify CMHA in writing 30 days prior to substantial completion. The notice shall contain the proposed date the PHA will take possession of the facility and conformance of this date with the approved construction.
- 2.6 SPECIFICATION CONVENTIONS
- A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words "shall be" are included by inference where a colon (:) is used within sentences or phrases.
- 2.7 UNFORESEEN CONDITIONS
- A. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit are to be included in Change Orders.
- 2.8 SCHEDULE OF VALUES
- A. Submit schedule on HUD form 5100.
 - B. Submit Schedule of Values 10 days prior to the Pre-construction meeting for approval.
 - C. Approved Schedule of Values will be signed at the Pre-Construction meeting.
- 2.9 APPLICATIONS FOR PAYMENT
- A. Submit three copies of each application on HUD Form 5100.
 - B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
 - C. Payment Period: Monthly.

2.10 CHANGE PROCEDURES

- A. On Owner's approval of a proposal from Contractor, Owner will issue a Change Order for all changes to Contract Sum and for all changes to the Contract Time.
- B. The Architect may issue a Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change. Contractor will prepare and submit estimate within 10 days.
- C. Stipulated Sum/Price Change Order: Based on Proposal Request and Contractor's fixed price quotation.
- D. Unit Price Change Order: For contract unit prices and quantities, the Change Order must be executed prior to beginning any work. The Order will be based on fixed unit price basis provided in the Bid Form. Unit Prices may be disallowed if deemed by A/E to be inconsistent with industry standard prices.
- E. Construction Change Directive: Architect/Engineer may issue directive, on HUD Forms signed by Owner, instructing Contractor to proceed with change in the Work. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Construction Change Directives will be charged against Allowances included in the Base Bid. Promptly execute change.
- F. Change Order Forms: HUD Approved Forms.
- G. Correlation of Contractor Submittals:
 - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Directive or Change Order as separate line item and adjust Contract Sum/Price.
 - 2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
 - 3. Promptly enter changes in Project Record Documents.

2.11 ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Alternates are prioritized, however CMHA reserves the right to accept any alternates.
- B. Coordinate related Work and modify surrounding Work as required.

2.12 COORDINATION

- A. Coordinate scheduling, submittals, and Work of various sections of specifications to ensure efficient and orderly sequence of installation of interdependent construction elements.
- B. Verify utility requirement characteristics of operating equipment are compatible with building utilities.

2.13 FIELD ENGINEERING

- A. Employ experienced instrument technician to locate reference datum and protect survey control and reference points.
- B. Establish elevations, lines, and levels and certify elevations and locations of the Work conform to Contract Documents.
- C. Verify field measurements are as indicated on shop drawings or as instructed by manufacturer.

2.14 QUALITY CONTROL TEST INSPECTIONS

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1) Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 - 2) Payment for these services will be made by the Owner.
- B. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
 - a. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 - 1) Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a) Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2) Notify testing agencies at least 24 (twenty-four) hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3) Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4) Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5) Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Quality Control Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections.
 - 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
 - 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.

4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.
- D. Refer to required testing for sustainable design requirements.
- E. Coordination: Contractor shall coordinate testing and inspections with testing agency, inspectors, architect and Owner's representative. Contractor shall provide a loaded dump truck for proof rolling paving base as requested by testing agency or A/E.
- F. Acceptable testing agencies
1. Professional Service Industries, Inc., 7841 Palace Drive, Cincinnati, OH 45249.
 2. Bowser-Morner, 4518 Taylorsville Road, Dayton, Ohio 45424.
 3. Geotechnology, Inc., 1780 Carillon Blvd., Cincinnati, Ohio 45240.
- G. Test and inspection log
1. Prepare a record of tests and inspections. Include the following:
 - a. Date test or inspection was conducted.
 - b. Description of the Work tested or inspected.
 - c. Date test or inspection results were transmitted to Architect.
 - d. Identification of testing agency or special inspector conducting test or inspection.
 2. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1) Specification Section number and title.
 - 2) Description of test and inspection.
 - 3) Identification of applicable standards.
 - 4) Identification of test and inspection methods.
 - 5) Number of tests and inspections required.
 - 6) Time schedule or time span for tests and inspections.
 - 7) Entity responsible for performing tests and inspections.
 - 8) Requirements for obtaining samples.
 - 9) Unique characteristics of each quality-control service.
 3. Reports: Prepare and submit certified written reports that include the following:
 - 1) Date of issue.
 - 2) Project title and number.
 - 3) Name, address, and telephone number of testing agency.
 - 4) Dates and locations of samples and tests or inspections.
 - 5) Names of individuals making tests and inspections.
 - 6) Description of the Work and test and inspection method.
 - 7) Identification of product and Specification Section.
 - 8) Complete test or inspection data.
 - 9) Test and inspection results and an interpretation of test results.
 - 10) Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11) Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12) Name and signature of laboratory inspector.
 - 13) Recommendations on retesting and reinspecting.
- H. Repair and protection

1. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - a. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 - b. Comply with the Contract Document requirements for Division 01 Section "Cutting and Patching."
2. Protect construction exposed by or for quality-control service activities.
3. Coordination, repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

2.15 AGREEMENT AND WAIVER FOR USE OF COMPUTER AIDED DESIGN FILES

- A. The Architect/Engineer, at his sole discretion and without obligation, makes graphic portions of the contract documents available for use by the contractor in electronic format. These electronic documents are proprietary, and remain the Architect/Engineer's Instruments of Service and shall be for use solely with respect to this project, as provided in the Standard Form of Agreement between Owner and Architect and Architect and Engineer.
- B. Electronic files shall be released only after bids have been received for the project and contracts have been signed with the contractors.
- C. The contractor shall acknowledge receipt of CAD files in DXF or DWG format for this project. These files are provided as a convenience to the User, for use in preparing shop drawings and/or coordination drawings related to the construction of the above project only. These files and the information contained within are the property of the Architect and the Engineer and/or the Owner, and may not be reproduced or used in any format except in conjunction with the above project.
- D. The User acknowledges that the information provided in these files is not a substitution or replacement for the Contract Documents and does not become a Contract Document. The User acknowledges that the Architect, the Consultants, the Client or the Owner make any warrant or representation that the information contained in these files reflect the Contract Documents in their entirety. The User assumes full responsibility in the use of these files, including the responsibility to see that all manual modifications, addenda, bulletins, clarifications and Change Orders to the drawings executed as a part of the Contract Documents have been incorporated.
- E. The User acknowledges that the furnishing of these files in no way relieves the User from the responsibility for the preparation of shop drawings or other schedules as set forth in the Contract between the Contractor and the Owner.
- F. These electronic documents are available in the .DWG format for AutoCAD Release 2018 for a cost of \$50 for the first sheet and \$15 per sheet for each sheet thereafter. Providing the documents in the .DXF format will be an additional charge of \$5.00 per sheet. Charges are for the Architect/Engineer's time to prepare the documents in the format stated. They are available through the Architect or Engineer's office on a C.O.D. basis only. A sample of the format will be provided by the Architect or Engineer upon request by the contractor, for the purpose of testing the compatibility of the format to contractor's systems.

- G. Projects developed using AutoCAD MEP or REVIT will have all drawings converted to the AutoCAD format. AutoCAD MEP or REVIT documents will not be furnished unless under a separate Contractual Agreement.
- H. The electronic documents shall be stripped of the Project's name and address, the Architect's and Engineer's and any consultant's name and address, and any professional licenses indicated on the contract documents, (and all dimensions, verbiage, and statistical information). Use of these electronic documents is solely at the contractor's risk, and shall in no way alter the contractor's Contract for Construction.
- I. The User agrees to indemnify, hold harmless and defend the Architect, the Engineer, the Consultants, the Owner, the Client and any of their agents from any litigation resulting from the use of (by any means of reproduction or electronic media) these files. The Architect/Engineer makes no representation regarding fitness for any particular purpose, or suitability for use with any software or hardware, and shall not be responsible or liable for errors, defects, inexactitudes, or anomalies in the data, information, or documents (including drawings and specifications) caused by the Architect/Engineer's or its consultant's computer software or hardware defects or errors; the Engineer's or its consultant's electronic or disk transmittal of data, information or documents; or the Architect/Engineer's or its consultant's reformatting or automated conversion of data, information or documents electronically or disk transmitted from the Architect/Engineer's consultants to the Engineer. The contractor waives all claims against the Architect/Engineer its employees, officers and consultants for any and all damages, losses, or expenses the contractor incurs from such defects or errors in the electronic documents. Furthermore, the contractor shall indemnify, defend, and hold harmless the Architect/Engineer, and its consultants together with their respective employees and officers, harmless from and against any claims, suits, demands, causes of action, losses, damages or expenses (including all attorney's fees and litigation expenses) attributed to errors or defects in data, information or documents, including drawings and specifications, resulting from the contractor's distribution of electronic documents to other contractors, persons, or entities.

2.16 PRECONSTRUCTION AND PREINSTALLATION MEETINGS

- A. Owner will schedule preconstruction meeting after Notice of Award for affected parties.
- B. When required in individual specification section, convene preinstallation meeting at Project site prior to commencing work of section.

2.17 PROGRESS MEETINGS

- A. CMHA will schedule and administer meetings throughout progress of the Work at maximum weekly intervals. All contractors and subcontractors currently performing work on the project shall attend the progress meetings.
- B. CMHA will preside at meetings and distribute copies of agenda and minutes at the next regularly scheduled meeting to those affected by decisions made.
- C. CMHA will record minutes and distribute to all parties.

2.18 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching new Work; restore Work with new Products.

- B. Submit written request in advance of cutting or altering structural or building enclosure elements.
- C. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
 - 1. Fit several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Cut masonry and concrete materials using masonry saw or core drill. Restore Work with new Products in accordance with requirements of Contract Documents.
- E. Fit Work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- F. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. Refinish surfaces to match adjacent finishes.

2.19 SUBMITTAL PROCEDURES

- A. Utilize cover sheet provided by the Architect. Submittal form to identify Project, Contractor, subcontractor or supplier; and pertinent Contract Document references.
- B. Apply Contractor's stamp, signed or initialed, certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.
- C. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of completed Work.
- D. Revise and resubmit submittals as required; identify changes made since previous submittal.
- E. See Part 2.22 Product Data below for electronic submittal requirements.

2.20 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within 3 business days of prior to the preconstruction conference.
- B. Submit revised schedules with each Application for Payment, identifying changes since previous version. Indicate estimated percentage of completion for each item of Work at each submission.
- C. Utilize Microsoft Project, or equal, schedule with separate line for each major section of Work or operation, identifying first work day of each week. No exception of the software requirement will be allowed.

2.21 PROPOSED PRODUCTS LIST

- A. Within 10 days after date of Notice to Proceed, submit list of major Products proposed for use, with name of manufacturer, trade name, and model number of each product.

2.22 PRODUCT DATA

- A. Product Data:
 - 1. Submitted to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
 - 2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.
- B. All submittals shall be transmitted electronically to the Architect in a PDF format.
 - 1. Contractor shall utilize **Adobe Acrobat** (or similar software) to have the full ability to add comments, edits, signatures, etc. to the submittals and information submitted.
 - 2. Contractor shall not simply download information directly from a manufacturer's website without a review of the information and identifying the particular products being utilized. Submittals transmitted to the Architect in this manner will be rejected and require re-submittal.
- C. Transmit each submittal with Architect's Approved Cover Sheet. Each submittal shall have a cover sheet. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal. **Cover Sheet will be page 1 of the PDF.**
- D. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.
- F. Schedule submittals to expedite Project and deliver to Architect/Engineer. Coordinate submission of related items.
- G. For each submittal for review, allow 5 days excluding delivery time to and from Contractor.
- H. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.
- I. Allow space on submittals for Contractor and Architect/Engineer review stamps.
- J. When revised for resubmission, identify changes made since previous submission.
- K. Distribute copies of reviewed submittals as appropriate (electronically as appropriate). Instruct parties to promptly report inability to comply with requirements.
- L. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to this project.

2.23 SHOP DRAWINGS

- A. Shop Drawings:
 - 1. Submitted to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
 - 2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.
- B. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
 - 1. Include signed and sealed calculations to support design.
 - 2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
 - 3. Make revisions and provide additional information when required by authorities having jurisdiction.
- C. See Part 2.22 above for electronic submittal requirements.

2.24 SAMPLES

- A. Samples for Review:
 - 1. Submitted to Architect/Engineer for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.
 - 2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.
- B. Samples for Selection:
 - 1. Submitted to Architect/Engineer for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes from full range of manufacturer's standard colors, in custom colors selected, textures, and patterns for Architect/Engineer selection.
 - 3. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes as specified.
- C. Submit samples to illustrate functional and aesthetic characteristics of Product.
- D. Submit samples of finishes from full range of manufacturer's standard colors, textures, and patterns for Architect/Engineer's selection.

2.25 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit manufacturer printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.

2.26 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification sections, submit certifications by manufacturer to Architect/Engineer, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

2.27 CONTRACTOR'S SUBMITTALS AND QUALIFICATIONS

A. The following documents will be required to be submitted by apparent low bidder as part of the financing qualifications submittal:

1. General Contractor Questionnaire
2. Resumes/Qualifications with a focus towards prior FHA and multifamily experience. (Company brochures, resumes, etc.)
3. Financial Statements:
 - a. YTD 2024 (dated within last 3 months)
 - b. 2023
 - c. 2022
 - d. 2021
4. Verification of EIN
5. AIA A104 Owner-Contractor Agreement
6. AIA A305 Qualification Statement
7. Commitment Letter from Surety or Bank for Letter of Credit for Completion Assurance
8. Certificate of Licensing, if applicable
9. Certificate of General Liability Insurance (ACORD)

Forms provided by CMHA.

10. HUD 92013-Supp Supplement to Application
11. HUD 2530 Previous Participation Certification/APPS Submission Package
12. Statement Regarding Other Business Concerns
13. Credit Information Release Certification
14. Financial Statement Certification
15. HUD 92010 Equal Employment Opportunity Certification
16. Work in Progress Statement
17. HUD 2328 Contractor's Cost Breakdown
18. HUD 5372 Construction Progress Schedule
19. Amendment to Construction Contract (6B)
20. 50/75% Rule of Disclosure Certification

2.28 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification sections, submit certifications by manufacturer to Architect/Engineer, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

2.29 QUALITY CONTROL

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturer's instructions.
- C. Comply with specified standards as minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

2.30 TOLERANCES

- A. Monitor fabrication and installation tolerance control of installed Products over suppliers, manufacturers, Products, site conditions, and workmanship, to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply fully with manufacturer's tolerances.

2.31 REFERENCES

- A. Conform to reference standards by date of issue current as of date for receiving bids.
- B. When specified reference standard conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

2.32 EXAMINATION

- A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions. Verify utility services are available, of correct characteristics, and in correct location. The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

2.33 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

2.34 TEMPORARY UTILITIES GENERAL REQUIREMENTS

- A. Contractor may use existing electrical, sanitary, water, heating and cooling equipment during construction if these services are available at the site. Contractor shall provide all required services not available at any particular site. Contractor shall maintain existing systems as required to provide temporary services.
- B. Provide temporary electricity and power outlets for construction operations, connections, branch wiring, distribution boxes, and flexible power cords as required. Do not disrupt Owner's need for continuous service.

2.35 TEMPORARY ELECTRICITY

- A. Contractor shall have access to building electrical service when available. If electrical service is not available, Contractor shall provide temporary service as required to complete work.

- B. Provide temporary electricity and power outlets for construction operations, connections, branch wiring, distribution boxes, and flexible power cords as required. Do not disrupt Owner's need for continuous service.

2.36 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Contractor shall have access to existing building lighting. If existing lighting is not sufficient, Contractor shall provide temporary lighting as required to complete work.
- B. Provide and maintain temporary lighting for construction operations.
- C. Permanent building lighting may be utilized during construction prior to demolition.

2.37 TEMPORARY HEATING AND COOLING

- A. Contractor may utilize existing heating system.
- B. Provide heating and cooling devices as needed between demolition and installation of new equipment. Existing permanent radiant boiler heating building heating system may be utilized during construction.
- C. Provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts.
- D. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

2.38 TEMPORARY VENTILATION

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

2.39 TELEPHONE AND FACSIMILE SERVICE

- A. Job superintendent must carry a cell phone at all times and be available 24 hours a day, 7 days a week.

2.40 TEMPORARY WATER SERVICE

- A. Contractor shall have access to existing water service for construction purposes via hose bib on the exterior of the building.
- B. Connect to existing water source for construction operations. Do not use occupied units water source.

2.41 TEMPORARY SANITARY FACILITIES

- A. Contractor shall NOT have access to apartment sanitary facilities. Contractor shall provide their own portable sanitary facility if required.

2.42 PEST CONTROL

- A. Pest Control: Owner will engage pest-control service to perform treatments to minimize attraction and harboring of rodents, roaches, bed bugs and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests

and their residues at Substantial Completion. Extermination treatment to be performed as needed during demolition by Contractor. Owner will perform control operations lawfully, using environmentally safe materials. Contractor is responsible to inspect and repair any warped, rotted and/or termite damaged wood materials discovered in association with this contract. Contractor shall coordinate timing of Owner's extermination processes and provide access as required. See Section 07 90 00 Joint Protection for additional requirements.

2.43 FIELD OFFICES AND SHEDS

- A. Contractor field office and material storage:
 - 1. Contractor may use the basement garage for a field office and storage during the duration of the project.
- B. Do not utilize apartment units for storage needs.

2.44 ROADS

- A. Existing on-site roads will be used for construction traffic. Contractor shall utilize on-street parking for daily parking requirements.
- B. Provide and utilize street sweeping equipment.
 - 1. Roads and sidewalks shall be kept clean at all times. Clean public roads and walks daily. Clean roads and sidewalks within 24 hours if requested by Owner, no exceptions.
 - 2. Provide snow removal at sidewalks and driveways utilized for construction entries during construction.

2.45 PROGRESS CLEANING AND WASTE REMOVAL

- A. Collect and maintain areas free of waste materials, debris, and rubbish on a daily basis. Maintain site in clean and orderly condition.
- B. Do not utilize tenant dumpsters or adjacent building dumpsters for waste.

2.46 FIRE PREVENTION FACILITIES

- A. Prohibit smoking within buildings or on CMHA property during construction.
 - 1. Personnel violating smoking ban inside building will not be permitted to return to work.
- B. Establish fire watch for cutting and welding and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.
- C. Portable Fire Extinguishers: NFPA 10; 10 pound capacity, 4A-60B: C UL rating.
 - 1. Provide one fire extinguisher at each stair on each floor of each building under construction and demolition.
 - 2. Provide minimum one fire extinguisher in every construction trailer and storage shed.
 - 3. Provide minimum one fire extinguisher on roof during rooftop operations using heat producing equipment.

2.47 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Prohibit traffic or storage upon waterproofed or roofed surfaces.

2.48 SECURITY

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

2.49 POLLUTION AND ENVIRONMENTAL CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
- B. Provide dust control, erosion and sediment control, noise control, pest control and rodent control to allow for proper execution of the Work.

2.50 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, and prior to Final Application for Payment review.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

2.51 PRODUCTS

A. GENERAL REQUIREMENTS

1. The Contractor shall visit the site to verify conditions and take measurements necessary for bidding purposes. Arrangements to visit the site may be made by contacting CMHA Office of Procurement 513-333-0670.
2. The Contractor shall be responsible for paying for all permits and inspections necessary to complete all work related to these specifications. All work shall comply with Federal, State and Local codes.
3. The **Contractor** shall provide dumpsters or trash containers needed and will not use CMHA dumpsters or trash containers at any time for removal of materials, trash or debris related to the Contractor's work.
4. A Contractor, working under a contractual agreement with CMHA, **MUST BE IN COMPLIANCE WITH OSHA STANDARDS 1926 – REGULATIONS FOR CONSTRUCTION**. Any and all sub-contractors, doing work on this project, **MUST ALSO BE IN COMPLIANCE WITH OSHA STANDARDS**. Non-compliance shall be a basis for making a bid non-responsive. And, if a Contractor or sub-contractor is found to be in **VIOLATION (NON-COMPLIANCE) AT ANY TIME**, this could be a basis for termination of the contract.
5. **IMPORTANT**: Failure to show or mention petty details shall not be warranted for the omission of anything necessary for the proper completion of the work.
6. The Contractor shall not take advantage of any clerical errors, omissions, contradictions or conflicts that may develop in plans, specifications or details.

Such errors, ambiguities and discrepancies shall be reported to CMHA immediately for clarification, revision or correction prior to submission of bids. If no notification is given it shall be assumed that all specifications and conditions will be met.

7. The submission of a bid shall be considered the Contractor's Certification that the bid is based upon equipment and /or materials that meet or exceed the standards set forth by specification or equipment and/or materials identification. Should a Contractor's product be determined not equal to that specified, the Contractor shall be required to provide/install a product acceptable as equal by CMHA at no additional cost to CMHA.
8. During investigation of the work to be done, should the Contractor believe there is material containing asbestos, they shall immediately notify CMHA Management, otherwise, it shall be the Contractor's responsibility to inspect, test, remove and provide for the proper disposal of any asbestos containing material.
9. Special Conditions
 - a. During Construction, call Oregon Group Architects, Inc., at 937-228-1511, or the CMHA Design Services staff if you have questions, at phone number 513-977-5606.
 - b. In submitting their bid, it will be assumed that the Contractor has visited the site and is familiar with the conditions as they may exist, and the modifications that may be necessary to provide a complete and professional job;
 - c. CMHA must be notified forty-eight hours prior to starting any work at the construction site.
 - d. Contractor will be responsible for any and all damages done to CMHA and /or resident property and at no additional expense to CMHA;
 - e. The intent of these specifications is to accomplish a complete installation, ready for operation. Any minor items required for installations shall be considered in the bid amount, whether or not it is mentioned in the specifications.
10. Contract Period
 - a. Upon issuance of a contract from CMHA, the Contractor shall supply a work start date within 10 (ten) working days. A start date and completion date will be negotiated and a Notice to Proceed will be issued stating those dates. If an extension of time is necessary, a request in writing must be submitted to CMHA. Failure to comply may result in cancellation of the purchase order and disablement from future bidding. The Contractor must notify CMHA, in writing, upon determination of any delay in material delivery.
11. Security: Contractor's Liability for Vandalism
 - a. The Contractor shall be responsible, at the Contractor's cost and expense, for the security and protection of that portion of the sites, building and/or units under the Contractor's control, and for the repair and replacement of the work until that portion of the building is accepted as completed by CMHA. The Contractor shall take all measures necessary to provide such security.
 - b. The Contractor shall be liable for and shall promptly repair or otherwise remedy any and all damages to said portion of the building or site and of the accepted construction work caused by vandalism up to \$5,000.00 per incident. The Contractor shall indemnify and hold CMHA harmless from and against all damages, liabilities, costs and expenses, including, without limitation, reasonable attorney fees, which may be imposed upon or incurred by CMHA as a result of the Contractor's failure to comply with the requirements of this section.
12. Qualifying Contractors and Sub-contractors

- a. The Contractor and/or Sub-contractor must establish their qualifications with CMHA to do this type of work. Qualifications may be established by:
 - 1) Pre-Construction work;
 - 2) Providing a recommendation from the supplier of the products;
 - 3) Providing a list of 5 jobs (minimum) of like work with names and addresses that can be used as references;
 - 4) Demonstrating to CMHA the capability to do the work. The Contractor will have a minimum of five years experience in doing similar work.
 - b. The Contractor will be responsible for all work performed by the Sub-contractors.
- 13. Required Inspections by CMHA
 - a. Call CMHA Design Services, at phone number 513-333-0670 to:
 - 1) Inform CMHA when the job is actually going to start and to schedule the first inspection;
 - 2) Inspection at random or when problems arise;
 - 3) Final Inspection.
 - b. Oregon Group Architects will assist CMHA during inspections.
- 14. Warranties and Guarantees
 - a. General: The warranty and guarantee provisions of the General Conditions apply to all work of the contract, including but not limited to the following specific categories related to individual units of work specified in various sections of these specifications:
 - 1) Special Project Warranty (Guarantee): A warranty specifically written and signed by the Contractor for a defined portion of the work, and, where required, countersigned by sub-contractor, installer, manufacturer, or other entity engaged by the Contractor.
 - 2) Specified Product Warranty: A warranty which is required by the contract documents, to be provided for a manufactured product incorporated in the Work, regardless of whether manufacturer has published a similar warranty without regard for specific incorporation into the work, or has written and executed a special project warranty as a direct result of contract document requirements.
 - 3) Coincidental Product Warranty: A warranty which is not specifically required by the Contract Documents (other than as specified in this Section); but which is available on a product incorporated into the work, by virtue of the fact that the manufacturer of the product has published a warranty in connection with purchases and users of the product without regard for specific applications except as otherwise limited by terms of the warranty.

2.52 DELIVERY, HANDLING, STORAGE, AND PROTECTION

- A. Deliver, handle, store, and protect Products in accordance with manufacturer's instructions.

2.53 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

- C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for manufacturers not named.
- D. Products Specified by Naming One Manufacturer with a Product as Basis of Design: Provide Product listed as Basis of Design or submit request for substitution.

2.54 SUBSTITUTIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed after award of the Contract are considered requests for substitutions. The following are not requests for substitutions:
 - 1. Substitutions requested during the bidding period and accepted by Addendum prior to award of the Contract.
 - 2. Revisions to the Contract Documents requested by the Owner.
 - 3. Specified options included in the Contract Documents.
 - 4. Contractor's compliance with regulations issued by governing authorities.
- B. Bidding Substitution Request Submittal: The Architect will consider requests for substitution, by bidding contractors only, during bidding no later than 10 days prior to the bid due date.
 - 1. Submit 1 copy of each request for substitution.
 - 2. Identify the product or method to be replaced in each request. Include related Specification Section and Drawing numbers.
 - 3. Provide documentation showing compliance with the requirements for substitutions and the following information:
 - a. Coordination information, including a list of changes needed to other Work that will be necessary to accommodate the substitution.
 - b. A comparison of the substitution with the Work specified, including performance, weight, size, durability, and visual effect.
 - c. Product Data, including Drawings and descriptions of products and installation procedures.
 - d. Samples, where applicable or requested.
 - e. A statement indicating the effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the substitution on Contract Time.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - g. Certification that the substitution conforms to the Contract Documents and is appropriate for the applications indicated.
 - h. The Contractor's waiver of rights to additional payment or time that may become necessary because of the failure of the substitution to perform adequately.
 - 4. If the substitution is accepted by the Architect, an Addendum will be issued prior to the bid due date.
- C. After Award Substitution Request Submittal: The Architect will consider requests for substitution, by bidding contractors only, received within 60 days after commencement of the Work.
 - 1. Submit 3 copies of each request for substitution. Submit requests according to procedures required for change-order proposals.
 - 2. Identify the product or method to be replaced in each request. Include related Specification Section and Drawing numbers.
 - 3. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents. Submittal must include technical data for both the specified product included in specification section and the product requested as a substitution. Technical data must clearly indicate how substitution requested product completely meets performance and quality requirements of specifications and is equal in

performance and quality requirements. Provide documentation showing compliance with the requirements for substitutions and the following information:

- a. Coordination information, including a list of changes needed to other Work that will be necessary to accommodate the substitution.
 - b. A comparison of the substitution with the Work specified, including performance, weight, size, durability and visual effect.
 - c. Product Data, including Drawings and descriptions of products and installation procedures.
 - d. Samples, where applicable or requested.
 - e. A statement indicating the effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the substitution on Contract Time.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.
 - g. Certification that the substitution conforms to the Contract Documents and is appropriate for the applications indicated.
 - h. The Contractor's waiver of rights to additional payment or time that may become necessary because of the failure of the substitution to perform adequately.
4. Architect's Action: If necessary, the Architect will request additional information within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection within 2 weeks of receipt of the request. Acceptance will be in the form of a change order.
- a. Use the product specified if the Architect cannot make a decision within the time allocated.
- D. Conditions: The Architect will receive and consider a request for substitution when one or more of the following conditions are satisfied. Otherwise, the Architect will return the requests without action except to record noncompliance with these requirements.
1. Extensive revisions to the Contract Documents are not required.
 2. Changes are in keeping with the intent of the Contract Documents.
 3. The specified product cannot be provided within the Contract Time. The Architect will not consider the request if the specified product cannot be provided as a result of failure to pursue the Work promptly.
 4. The request is related to an "or-equal" clause.
 5. The substitution offers the Owner a substantial advantage, in cost, time, or other considerations, after deducting compensation to the Architect for redesign and increased cost of other construction.
 6. The specified product cannot receive approval by a governing authority, and the substitution can be approved.
- E. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples for construction not complying with the Contract Documents do not constitute an acceptable request for substitution, nor do they constitute approval.

2.55 CLOSEOUT PROCEDURES

- A. Submit written certification Contract Documents have been reviewed, Work has been inspected, and Work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspection.
1. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1) Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2) Advise Owner of pending insurance changeover requirements.
 - 3) Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

- 4) Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5) Prepare and submit Project Record Documents and operation and maintenance manuals.
 - 6) Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 - 7) Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 8) Complete startup testing of systems.
 - 9) Submit test/adjust/balance records.
 - 10) Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 11) Advise Owner of changeover in heat and other utilities.
 - 12) Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 - 13) Complete final cleaning requirements, including touchup painting.
 - 14) Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
2. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, CMHA will either proceed with inspection or notify Contractor of unfulfilled requirements. CMHA will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
- 1) Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2) Results of completed inspection will form the basis of requirements for Final Completion.

B. FINAL COMPLETION

1. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
 - 1) Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
 - 2) Submit certified copy of CMHA's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by CMHA. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3) Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4) Submit pest-control final inspection report and warranty.
 - 5) Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Revise paragraph and subparagraph below to comply with office policy and Project requirements.
2. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, CMHA and Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. CMHA will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

- 1) Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

2.56 FINAL CLEANING

- A. Final cleaning to be conducted by a professional final construction cleaning company with minimum three years documented experience prior to final inspection.
- B. Clean all interior and exterior surfaces exposed to view. Vacuum carpeted and soft surfaces.
- C. Clean debris from site, roofs, gutters, downspouts, and drainage systems.
- D. Clean or replace filters of operating equipment.
- E. Remove waste and surplus materials, rubbish, and construction facilities from site.

2.57 STARTING OF SYSTEMS

- A. Provide seven days notification prior to start-up of each item.
- B. Ensure each piece of equipment or system is ready for operation.
- C. Execute start-up under supervision of responsible persons in accordance with manufacturer's instructions.
- D. Submit written report stating equipment or system has been properly installed and is functioning correctly.

2.58 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of final review.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled times, at equipment location.

2.59 TESTING, ADJUSTING, AND BALANCING

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

2.60 PROTECTING INSTALLED CONSTRUCTION

- A. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- B. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- C. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- D. Prohibit traffic from landscaped areas.

2.61 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of Contract Documents to be utilized for record documents.
- B. Record actual revisions to the Work. Record information concurrent with construction progress.
- C. Specifications: Legibly mark and record at each Product section description of actual Products installed.
- D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction.
- E. Submit documents to Architect/Engineer 15 days prior to request for Final Inspection.

2.62 OPERATION AND MAINTENANCE DATA

- A. Submit one set prior to final inspection, bound in 8-1/2 x 11 inch text pages, slant "D" ring binders with durable plastic covers.
- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS" and title of project.
- C. Internally subdivide binder contents with permanent page dividers, logically organized, with tab titles legibly printed under reinforced laminated plastic tabs.
- D. Contents Tabbed as follows:
 - 1. Part 1: Contractor's Warranty
 - 2. Part 2: Signed off permits
 - 3. Part 3: Project documents and certificates arranged by Specification Number.
- E. Upon approval of Manual complete two additional copies. Submit at least 15 days prior to Final Inspection.

2.63 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual specification sections.
- B. Deliver to Project site and place in location as directed by Owner; obtain receipt for acceptance prior to final payment.

2.64 WARRANTIES

- A. Provide notarized copies.
- B. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers.
- C. Submit prior to final Application for Payment.

PART 3 PRODUCTS

Not Used.

PART 4 EXECUTION

Not Used.

END OF SECTION

SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.01 SUMMARY OF WORK

- A. Project Identification: As follows:
 - 1. Project: CMHA Sherlock Apartments
3345 Sherlock Avenue
Cincinnati, Ohio 45220

Owner: Cincinnati Metropolitan Housing Authority
1627 Western Avenue
Cincinnati, Ohio 45220
- B. Contract Documents, dated October 31, 2024, were prepared by Oregon Group Architects, Inc. 300 S. Patterson Blvd. Dayton, OH 45402, 937-228-1511.
- C. The Work consists of replacing the exterior balconies and roof structure and other miscellaneous exterior renovations, as described in the Contract Documents.

1.02 WORK RESTRICTIONS

- A. Contractor's Use of Premises: During construction, Contractor shall be limited to the use of the site as indicated. Contractor shall be limited to portions of site where work is to occur. Contractors may need assistance in gaining access to some tenant spaces. CMHA staff will assist contractors in gaining access when requested.
- B. Additional Restrictions: See Drawing Key Notes, General Conditions, Special Conditions, and other Specification Sections for additional restrictions.
- C. The Contract Period is 120 consecutive days.
- D. See Specification Section 01 32 16 Construction Progress Schedule for limitation of work hours during the week.
- E. Contractor's normal daily work hours shall be 8:00 am to 5:00 pm Monday through Friday. If contractor wishes work additional hours each day, a request must be submitted to CMHA staff a week in advance. Additional hours may or may not be granted.
- F. A tool shed and materials storage will be permitted in the basement garage. It must be secured at all times.
- G. Contractor parking will be permitted on the street or the property driveway.

- H. Contractor shall provide all necessary temporary interior partitions for dust control as necessary.
- I. Contractor shall perform daily work area cleanup. Work areas shall be clean and end of each workday. No debris, construction materials, equipment, etc. may be left in work areas at the end of each day.

END OF SECTION

SECTION 02 41 19
SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolishing designated building equipment and fixtures.
 - 2. Cutting and alterations for completion of the Work.
 - 3. Protecting items designated to remain.
 - 4. Removing demolished materials.

1.2 SUBMITTALS

- A. Demolition Schedule: Indicate overall schedule and interruptions required for utility and building services.
- B. Shop Drawings:
 - 1. Indicate demolition and removal sequence.
 - 2. Indicate location and construction of temporary work.

1.3 CLOSEOUT SUBMITTALS

- A. Section 01 00 00 – General Requirements - Execution and Closeout Requirements: Requirements for submittals.
- B. Project Record Documents: Accurately record actual locations of capped utilities, concealed utilities discovered during demolition.
- C. Operation and Maintenance Data: Submit description of system, inspection data, and parts lists.

1.4 QUALITY ASSURANCE

- A. Conform to OBC for demolition work, dust control, products requiring electrical disconnection, and re-connection.
- B. Conform to applicable code for procedures when hazardous or contaminated materials are discovered.
- C. Obtain required permits from authorities having jurisdiction.

1.5 PRE-INSTALLATION MEETINGS

- A. Convene minimum one week prior to commencing work of this section for each building(s) scheduled.

1.6 SEQUENCING

- A. Sequence activities in the following stages:
 - 1. Contractor shall have access to all units included in scope of work. Units will be occupied during construction.

1.7 SCHEDULING

- A. Cooperate with Owner in scheduling noisy operations and waste removal that may impact neighbor's activities in adjacent units or buildings.
- B. Coordinate utility and building service interruptions with Owner.
 - 1. Do not disable or disrupt site, HVAC, water, sanitary, fire or life safety systems of occupied units without three days prior written notice to Owner.

1.8 PROJECT CONDITIONS

- A. Conduct work to minimize interference with adjacent and occupied building areas.
- B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.
- C. If materials suspected of containing hazardous materials are encountered and not identified in the construction documents, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.
- D. Hazardous Materials: Hazardous materials are present in construction to be selectively demolished. A report on the presence of hazardous materials is included in these documents, see Section 02 82 13 Asbestos Abatement. Some abatement work has been done as part of a previous contract but asbestos and lead are still present in the work area. Examine report to become aware of locations where hazardous materials are present and how they should be remediated.
- E. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Notify affected utility companies before starting work and comply with their requirements.
- B. Mark location and termination of utilities.
- C. Erect, and maintain temporary barriers and security devices including warning signs and lights, and similar measures, for protection of the public, Owner, and existing improvements indicated to remain.
- D. Erect and maintain weatherproof closures for exterior openings.
- E. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner. Restore systems at the end of the day.

3.2 DEMOLITION

- A. Conduct demolition to minimize interference with adjacent and occupied buildings.
- B. Maintain protected egress from and access to adjacent existing buildings at all times.
- C. Do not close or obstruct roadways or sidewalks without permits.
- D. Demolish in orderly and careful manner. Protect existing improvements.
- E. Carefully remove building components indicated to be reused.
 - 1. Disassemble components as required to permit removal.
- F. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site.
- G. Remove materials as Work progresses. Upon completion of Work, leave areas in clean condition.
- H. Remove temporary Work.

END OF SECTION

SECTION 02 82 13

LEAD AND ASBESTOS CONTAINING MATERIALS

PART 1 – GENERAL

1.01 WORK INCLUDED:

A. In general, the work shall include that noted in the Work Write-Up, specifications, drawings and whenever hazardous materials are encountered. The contract time includes the abatement work identified in the report.

B. Contractor shall be responsible and liable for removal and disposal of the identified suspected hazardous materials necessary to complete the identified scope. CMHA and its employees will not dictate the work.

C. An asbestos inspection and lead based paint inspection have been conducted. Full Asbestos and lead inspection reports are available online at www.cintimha.com, Job Opportunities link.

1. Contractor (bidder) shall consider the limited Asbestos report and Lead Report in preparing their bid and shall include any and all environmental consulting services, permits, safe work practices, proper abatement costs, clearance testing costs, and environmental remediation costs that may be required to legally and properly remove, abate or remediate the identified hazards that may be affected by the work of this contract.

2. Unless specifically designated to be abated by the scope of work; if the LBP or ACM will not be disturbed by the work of this contract, it shall remain as-is and the contractor shall protect the hazardous materials from damage or disturbance during the performance of the work of this contract.

3. If LBP or ACM to remain are required to be disturbed during construction, the contractor shall perform work in accordance with the governmental regulations and requirements indicated below.

1.02 REMOVAL, DISPOSAL, ETC.:

When removing, abating, disposing of lead or asbestos containing materials, the work shall follow the following general requirements:

A. The work of removing and disposing of asbestos shall be performed in accordance with the following governmental regulations:

1. U.S. Environmental Protection Agency Regulations.
2. U.S. Department of Labor - Occupational Safety and Health Administration (OSHA) Regulations applicable to the areas in which this project occurs.
3. State of Ohio Department of Health and local health department requirements.
4. HUD Interim Guidelines for hazard identification and abatement, Latest Edition - Lead Paint.

B. Contractor(s) involved in lead based paint or asbestos removal shall:

1. Be responsible for obtaining approval for a waste disposal site.
2. Post the EPA and OSHA regulations and any applicable state and local government regulations at the job site.
3. Be licensed by the State of Ohio and/or EPA to perform asbestos removal.
4. Evidence of such shall be provided to the Owner prior to the execution of the contract documents.
5. Be responsible and liable for all testing and removal and disposal of the suspected hazardous materials.
6. CMHA and its employees will not give advice, make recommendations and/or specify this

work.

7. The execution of this work shall be the responsibility of the Contractor or his subs and shall indemnify CMHA of any wrongdoing or violation.

C. The Contractor shall bear all expense and liability for testing, removal and disposal of these materials throughout the buildings.

PART 2 – PRODUCTS (WHEN REQUIRED)

A. Furnish all materials necessary to construct proper barriers to seal off contaminated areas according to OSHA, EPA and State Regulations.

B. Provide proper containers, tools and equipment for the removal and disposal of contaminated materials in authorized locations.

PART 3 – EXECUTION

A. The Bid Documents are intended to describe the intent and scope of work but do not, nor intend to "specify" or describe neither how the abatement is to be performed nor how the debris is to be disposed of. The contractor is instructed to strictly comply with the latest editions of the following regulations and all other regulatory requirements. The regulations shall "specify" and guide the execution of the work.

B. The Contractor shall be fully responsible for the proper legal removal and disposal of hazardous materials affected by the work. All work shall be performed by trained individuals in accordance with the requirements of this Section, and all current EPA, federal, state and local laws and regulations.

C. Common renovation activities like sanding, cutting, and demolition can create hazardous lead dust and chips by disturbing lead-based paint, which can be harmful to adults and children. To protect against this risk, the EPA issued a [rule requiring the use of lead-safe practices](#) and other actions aimed at preventing lead poisoning. Under the rule, contractors performing renovation, repair and painting projects that disturb lead-based paint in homes, dwellings, child care facilities, and schools built before 1978 must be certified and must follow specific work practices to prevent lead contamination. The EPA requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in pre-1978 homes, dwellings, child care facilities and schools be certified by the EPA and that they use certified renovators who are trained by EPA-approved training providers to follow lead-safe work practices. For additional information refer to www.epa.gov.

D. As a result of this EPA Lead-Safe Work Practices rule, the Contractor shall comply with this EPA regulation and include the cost of compliance in the Base Bid unless the test results or EPA criteria for application of this rule permit exemption from the Lead-Safe Work Practices rule.

E. If the Contractor observes any suspected hazardous (LBP, asbestos or other) containing materials during this work, not identified in owner's reports, he shall immediately notify the Owner. The Owner will investigate and pay for any sampling and testing that may be required.

1. U.S. Environmental Protection Agency (EPA) Regulations for Asbestos (Code of Federal Regulations, Title 40, Part 61, Subparts A, M and part 763, U.S. Department of Labor Occupational Safety and Health Administration (OSHA) Asbestos Regulations (Code of Federal Regulations, Title 29, Part 1910, Section 1910.1001, Section 1910.134 and Section 1926.58).
2. U.S. Environmental Protection Agency Office of Toxic Substances Document, "Asbestos-Containing Materials in School Buildings, Part 1 and Part 2.
3. U.S. Environmental Protection Agency Office of Pesticides and Toxic Substances publication "Guidance on Controlling Friable Asbestos-Containing Materials in Buildings" (EPA 560/5-83-002).
4. National Institute for Occupational Safety and Health (NIOSH) publications, Respiratory Protection. An Employer's Manual and "Respiratory Protection. . . A Guide for the Employee."

5. U.S. Department of Transportation (DOT) Hazardous Materials" Regulations. Code of Federal Regulation, Title 49.
6. American National Standards Institute (ANSI) publications "Fundamentals Governing the Design and Operation of Local Exhaust System" (29.2-79) and "Practices for Respiratory Protection" 288.2-80.
7. Underwriters Laboratories, Inc. (UC) publication "Test Performance of High Efficiency Particulate Air Filter Units" (586-77 R1982).
8. Any and all other state and local ordinances, regulations, or rules pertaining to asbestos, including its storage, transportation, and disposal.
9. State of Ohio Department of Health, Chapter 3701-34, State of Ohio revised code, Department of Health.

END OF SECTION

SECTION 03 01 00
MAINTENANCE OF CONCRETE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Concrete surface repair.
 - 2. Concrete crack repair.
- B. ASTM International:
 - 1. ASTM C33 - Standard Specification for Concrete Aggregates.
 - 2. ASTM C109/C109M - Standard Test Method for Compressive strength of Hydraulic Cement Mortars (Using 2-in. Cube Specimens).
 - 3. ASTM C150 - Standard Specification for Portland Cement.
 - 4. ASTM C260 - Standard Specification for Air-Entraining Admixtures for Concrete.
 - 5. ASTM C404 - Standard Specification for Aggregates for Masonry Grout.
 - 6. ASTM C882 - Standard Test Method for Bond Strength of Epoxy-Resin Systems Used With Concrete By Slant Shear.

1.2 SUBMITTALS

- A. Product Data: Submit product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.
- B. Manufacturer's Instructions: Submit mixing instructions.
- C. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.3 CLOSEOUT SUBMITTALS

- A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.
- B. Project Record Documents: Accurately record actual locations of structural reinforcement repairs, type of repair.
- C. Operation and Maintenance Data: Procedures for submittals.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with State of Ohio standards.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Applicator: Company specializing in concrete repair with minimum five years documented experience.

1.6 MOCK-UP

- A. Prepare one mockup of each type of injection and patching procedure.
- B. Incorporate accepted mockup as part of Work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Comply with instructions for storage, shelf life limitations, and handling.

PART 2 PRODUCTS

2.1 EPOXY ADHESIVE INJECTION MATERIALS

- A. Manufacturers:
 - 1. The Euclid Chemical Company Model Eucopoxy Injection Resin.
 - 2. Sika Corporation Model SikaInject 304 DE.
- B. Epoxy Adhesive: Two-part epoxy adhesive containing 100 percent solids, meeting the following minimum characteristics:

Characteristic	Test Method	Results
Bond Strength	ASTM C882	2,700 psi
Tensile Strength	ASTM D638	6,600 psi
Elongation	ASTM D638	2 percent at 7 days 70 degrees F
Flexural Strength	ASTM D790	8,000 psi
Compressive Strength	ASTM D695	6,500 psi

2.2 EPOXY MORTAR MATERIALS

- A. Manufacturers:
 - 1. The Euclid Chemical Company Model Euco 456S Mortar.
 - 2. L & M Construction Chemicals Inc. L&M EpogROUT 758
 - 3. Sika Corporation Model SikaRepair 222.
- B. Epoxy Mortar: Three-part epoxy binding resin and aggregate mortar mixture.

- C. Epoxy Binding Resin: Two-part epoxy resin containing 100 percent solids, meeting the following minimum characteristics:

Characteristic	Test Method	Results
Bond Strength	ASTM C882	2,700 psi
Tensile Strength	ASTM D638	6,600 psi
Elongation	ASTM D638	2 percent at 7 days 70 degrees F
Flexural Strength	ASTM D790	8,000 psi
Compressive Strength	ASTM D695	6,500 psi

- D. Aggregate: Type recommended by mortar manufacturer.

2.3 MIXING EPOXY MORTAR

- A. Mix epoxy mortars to consistency for purpose intended.
- B. Mix components in clean equipment or containers. Conform to pot life and workability limits.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify surfaces are ready to receive work.
- B. Beginning of installation means acceptance of existing surfaces.

3.2 PREPARATION

- A. Clean concrete surfaces of dirt, laitance, corrosion, or other contamination; wire brush using appropriate method recommended by the manufacturer.
- B. Flush out cracks and voids with as recommended by the manufacturer to remove laitance and dirt.
- C. Provide temporary entry ports spaced to accomplish movement of fluids between ports; no deeper than depth of crack to be filled or port size diameter no greater than thickness of crack. Provide temporary seal at concrete surface to prevent leakage of adhesive.
- D. For areas patched with epoxy mortar, remove broken and soft concrete **1/4 inch** deep. Remove corrosion from steel. Clean surfaces mechanically; wash with acid; rinse with water.

- E. Chemically clean exposed reinforcement steel surfaces. Mechanically cut away damaged portions of bar.

3.3 REPAIR WORK

- A. Repair exposed structural, shrinkage, and settlement cracks of concrete as indicated on Drawings by epoxy injection or epoxy application method.
- B. Repair spalling. Fill voids flush with surface. Apply surface finish.

3.4 INJECTION - EPOXY RESIN

- A. Inject epoxy resin adhesive into prepared ports under pressure using equipment appropriate for particular application.
- B. Begin injection at lower entry port and continue until adhesive appears in adjacent entry port. Continue from port to port until entire crack is filled.
- C. Remove temporary seal and excess adhesive.
- D. Clean surfaces adjacent to repair and blend finish.

3.5 APPLICATION - EPOXY MORTAR

- A. Trowel apply mortar mix to average thickness of ¼ inches minimum. Tamp into place filling voids at spalled areas.
- B. For patching honeycomb, trowel mortar onto surface, work mortar into honeycomb to bring surface flush with surrounding area. Finish trowel surface to match surrounding area.
- C. Cover exposed steel reinforcement with epoxy mortar, feather edges to flush surface.

3.6 SCHEDULE

- A. Spalled concrete surfaces: Epoxy mortar with smooth trowel finish.
- B. Foundation Walls: Epoxy resin injection, roughened surface finish to match adjacent work.

END OF SECTION

SECTION 04 01 00

MASONRY & CONCRETE RESTORATION AND
CLEANING

PART 1 GENERAL

1.1 NOTICE

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

1.2 GENERAL INFORMATION

- 1.2.1 The Project consists of the repairs of exterior masonry facades, concrete retaining walls and concrete foundations. Masonry restoration of the building seeks to restore the appearance and weather tightness of the exterior brick work. Concrete repairs seek to restore retaining wall and foundation structures to original shape by repairing missing pieces of wall.

1.2.2.1 Related Sections:

- .1 Division 07 Section "Joint Sealants" for masonry joints along opening perimeter sealants.

1.2.3 The Work at the site includes the following general categories:

- .1 Replace all sealant that exists between all masonry and louvers, windows, doors, etc.
- .2 Tuck-point deteriorated mortar joints in quantities as indicated on drawings.
- .3 Remove all ferrous materials from the exterior surfaces of masonry.
- .4 Replace all sealant that exists at all wall penetrations.
- .5 Fill all holes that exist in masonry surfaces with like material.
- .6 Fill all holes in concrete retaining walls and foundations with concrete patching materials.

1.3 REFERENCES

1.4.1 American Society for Testing and Materials:

- .2 ASTM C62 - Building Brick
- .3 ASTM C67 - Method for Sampling and Testing Brick and Structural Clay Tile
- .4 ASTM C91 - Masonry Cement

- .5 ASTM C144 - Aggregate for Masonry Mortar
- .6 ASTM C150 - Portland Cement
- .7 ASTM C207 - Hydrated Lime for Masonry Purposes
- .8 ASTM C270 - Mortar for Unit Masonry
- .9 ASTM C404 - Aggregates for Masonry Grout
- .10 ASTM C476 - Grout for Masonry
- .11 ASTM E11 - Wire Cloth Sieves for Testing Purposes
- .12 ASTM C-33 Standard Specification for Concrete Aggregates

1.4 QUALITY ASSURANCE

1.4.1 Qualifications for Workmen:

- .1 Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts, where the craftsmen have minimum five years' experience and are familiar with the specified requirements of the restoration of buildings and the methods needed for proper performance of Work in this Section.
- .2 Superintendents shall have at least five (5) years previous experience in masonry restoration Work as a Superintendent. Submit such experience on resume upon request after bid.

1.4.2 Quality of craftsmanship is essential to the success of the restoration of the exterior of these buildings. Careful attention must be paid to every aspect of the procedure; the preparation of the surfaces, appropriate flashing precautions and the removal and installation of new sealant systems. Shoddy or inexact workmanship will not be permitted and all such will be replaced at no cost to the owner.

1.4.3 Mortar Color Control: Purchase quantities of the approved aggregate to ensure color uniformity for the job. Mortar analysis of original mortar taken from the building may be required to insure proper color, texture and composition match. Several mortar colors are present on different areas of this building. Mortar color should match original mortar.

1.4.4 Accelerators or anti-freeze admixtures are specifically prohibited in the Work.

1.4.5 Manufacturer's Approval of Methods: Obtain written approval from the cleaning materials manufacturer for proposed cleaning methods, specifically referencing this Project. Require compound manufacturer's representative to visit site to evaluate the proposed methods.

1.4.6 Test cleaning: At inconspicuous locations determined by the Architect, demonstrate the proposed cleaning methods. Altered methods including compound concentration and dwell time before rinse to obtain a final appearance satisfactory to the Architect will be considered only after test cleaning as specified herein have been performed.

1.5 PRE-QUALIFICATION REQUIREMENTS

- 1.5.1 Contractors or subcontractors desiring consideration to perform the work of this section must complete Bidder Qualification Information on their Company letterhead and submit prior to contract being executed.

1.5.2 Contractors/Subcontractors shall provide the following information:

- .1 Experience of the Contractor/Subcontractor:
 - .1.1 Period of time the company has been performing the type of work required for this project as a contractor/subcontractor. Minimum 5 years' experience record is required.
- .2 Contractors are cautioned that only experienced contractors/subcontractors that can submit satisfactory documentation of comparable completed work of the type required for the work of this project will be considered for approval.

1.6 SUBMITTAL

- 1.6.1 Product Data: Submit full product data for all masonry materials, cleaning materials, patching materials, and associated products. Include manufacturer's printed recommendations for each product and its recommended application method. Include manufacturer's Material Safety Data Sheets for all chemicals and products delivered to the job site.
- 1.6.2 Samples: Submit, for verification purposes, cured samples of all mortars proposed for pointing. Submit concrete patch samples matching cleaned concrete to be used for precast repair.
- 1.6.5 Detail methods and procedures for cleaning including protective measures to be employed to prevent damage to surrounding materials, especially flashings, in addition to plants, project personnel, and the public.

1.7 PROJECT RECORD DOCUMENTS

- 1.7.1 This Paragraph specifies administrative and procedural requirements for Project Record Documents. Project Record Documents required include:
 - .7 Contractor's Daily Log Reports of Work performed, methods used, products used, and quality control test results.
- 1.7.3 Daily Record Log Recording Procedure: During the Work period, maintain a set of Log books for Project Record Document purposes. Enter information in the Log to indicate the actual installation where the Work varies appreciably from the installation specified. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later. Items required to be recorded in the Log include but are not limited to:
 - .1 Weather Conditions
 - .2 Changes made by Change Order
 - .3 Details not in original Contract Documents
 - .4 Waste containment integrity
 - .5 Area of Work repaired or treated, indicating size and location
 - .6 Method of cleaning and surface preparation

- .7 Repair method used
- .8 Specific description of all Work accomplished each day, including a description of all products used and methods employed.
- 1.7.4 Materials Specification Compliance: Contractor shall monitor, collect, and record manufacturer's analyses, material safety data sheets, product application literature, and other product shipping or descriptive data for each material received for each shipment supplied for the Work and shall immediately transfer a written copy of all such documentation to Architect.
- 1.7.5 Removal of Deteriorated Material: Contractor's Field Superintendent or Site Foreman shall inspect and document in daily written Project Work Logs, compliance with the requirement for all work. Copies of the Daily Logs shall be transferred to the Architect within ten days of the end of each Project Work week.
- 1.8 MOCK-UP
 - 1.8.1 Prior to start of general masonry restoration and concrete patching, prepare the following sample mock-ups where indicated by Architect. Obtain Architect's acceptance of visual qualities before proceeding with the Work. Retain approved in place wall samples during construction in undisturbed condition, suitably marked as a standard for judging completed Work.
 - 1.8.6 Exterior Concrete Patching: In an area designated by the Architect, carry out a complete concrete patch of a spalled concrete retaining wall area representative of the average condition of the wall. Employ specified materials and methods. Alter methods to obtain a final appearance satisfactory to the architect will be considered only after test treatments as specified herein have been performed. Demonstrate that the methods are appropriate and be prepared to alter methods if methods do not achieve an acceptable result.
- 1.9 PRE-CONSTRUCTION CONFERENCE
 - 1.9.1 Convene a conference two weeks prior to commencing any Work of this Section.
 - 1.9.2 Require attendance of parties directly affecting Work of this Section.
 - 1.9.3 Review conditions of installation, installation procedures, and coordination with related Work.
 - 1.9.4 Review craftsman and plan for execution of work.
- 1.10 DELIVERY, STORAGE, AND HANDLING
 - 1.10.1 Deliver, store, and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
 - 1.10.2 Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
 - 1.11.3 Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

- 1.10.4 Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Insure that approved Material Safety Data Sheets are provided for all products shipped or maintained on the site and that the MSD sheets are available to emergency medical personnel 24 hours a day during the contract Work.
- 1.10.5 Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
- 1.10.6 Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
- 1.10.7 Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
- 1.10.8 Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
- 1.10.9 Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter. Remove materials that are damaged or otherwise not suitable for installation from the job site and replace with acceptable materials at no additional cost to the Owner.

1.11 ENVIRONMENTAL REQUIREMENTS

1.11.1 Comply with the following:

- .1 Timing: Exterior cleaning shall occur prior to patch repairs, pointing, and sealant replacement Work. Cleaning as necessary shall occur after masonry work to clean areas of work.
 - .3 Schedule exterior cleaning of masonry to ensure that eminent temperatures do not go below 40 degrees F during the Work. Protect new Work from rain for 48 hours.
 - .4 Schedule all mortar and water based patch mix placement work to occur when work temperatures are above 40 degrees. Do not conduct mortar or patch placement when the temperatures are expected to fall below 28 degrees for any time period within 48 hours of executed work. All work that is done when temperatures reside under 40 degrees but above 28 degrees within 48 hours of material placement are to follow the BIA Cold Weather Masonry Guidelines.
- 1.11.2 Continued Access to be maintained during the Work: Access to the interior spaces of the building shall be maintained during the performance of the Work. Erect OSHA standard tunnel scaffolding at affected entrances.
- 1.11.3 Contractor Use of Premises: Limit use of the premises to cleaning and repair activities in areas indicated; allow for Owner occupancy and use by the public.
- .1 Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which cleaning and repair operations are indicated are not to be disturbed.

- .2 Erect barricade fence at all work stations so that the public is prohibited from crossing into the area under or near where work is being performed. Coordinate extent with CMHA staff.

PART 2 PRODUCTS

2.1 SUBSTITUTIONS

- 2.1.2 The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data, or Samples that relate to cleaning and stabilization activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

- 2.2.2 See Section 01 00 00 Substitutions.

2.2 CONCRETE PATCHING MATERIALS

- 2.2.1 General: This specification describes the patching or overlay of exterior vertical surfaces with a polymer modified, Portland cement mortar/concrete.

- A. 2.2.2 Sika Top 122 Plus, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification and is the Basis of Design. Polymer-modified Portland cement mortar:

1. Component A shall be a liquid polymer emulsion of an acrylic copolymer base and additives.
 - a. pH: 4.5-6.5
 - b. Film Forming Temperature: 73 degrees max.
 - c. Tear Strength: 950-psi min.
 - d. Elongation at Break: 500% min.
 - e. Particle Size: less than 0.1 micron.
2. Component A shall contain an organic penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrite, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.
3. Component B shall be a blend of selected Portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator.
4. The materials shall be supplied in a factory-proportioned unit.
5. Performance Criteria: Typical Properties of the mixed polymer-modified, Portland cement mortar:
 - a. Working Time: Approximately 30 minutes.
 - b. Finishing Time: 50-120 minutes.
 - c. Color: Concrete Gray
6. Typical Properties of the cured polymer-modified, Portland cement mortar:
 - a. Compressive Strength (ASTM C-109 Modified)
 - i. 1 day: 3000 psi min. (20.7 Mpa)
 - ii. 7 day: 5500 psi min. (37.9 Mpa)
 - iii. 28 day: 7000 psi min. (48.3 Mpa)
 - a. Flexural Strength (ASTM C-293)@ 28 days: 1600 psi.
 - b. Splitting Tensile Strength (ASTM C-496) @ 28 days: 750 psi (5.2Mpa)
 - c. Bond Strength (ASTM C-882 Modified) @ 28 days: 2000 psi
 - d. The Portland cement mortar shall not produce a vapor barrier.
 - e. Density (wet mix): 136 lbs. /cu. Ft. (2.18 kg/l)
 - f. Permeability (AASHTO T-277 @ 28 days Approximately 500 Coulombs)

- g. Note: Tests were performed with the material and curling conditions @ 71-75 degrees F and 45-55% relative humidity

- 2.2.3 Provide a written warranty from the manufacturer against defects of materials for a period of ten (10) years, beginning with date of substantial completion of the project.

PART 3 EXECUTION

3.1 SECURITY AND PROTECTION FACILITIES INSTALLATION

- 3.1.1 Temporary Fire Protection: Install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguisher", 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 extinguisher at each elevation where Work is underway.
 - .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.
- 3.1.2 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 or needed, provide lighting.
- 3.1.3 Security Enclosure and Lockup: 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. Areas for storage of materials will be determined prior to the commencement of the Work and approved by the Architect.
- 3.1.4 Environmental Protection: Provide protection, operate temporary facilities, and conduct cleaning and repair in ways and by methods that comply with environmental regulations, and minimize the possibility that the building interior, building air handling and HVAC systems, external atmospheric 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.

3.2 CONCRETE PATCHING

- 3.2.1 Surface Preparation.
 - .1 Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare the concrete substrate to obtain a surface profile of +/- 1/16" (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 1/8" in depth
 - .2 Where reinforcing steel with active corrosion is encountered sandblast (non-silica) the steel to a white metal finish to remove all contaminants and rust.

Contain all material, dust and overspray during sandblasting operations. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of bonding agent as directed by manufacture.

3.2.2 Application.

- .1 Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water. Mortar and/or concrete must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. If repair area is too large to fill while scrub coat is still wet use bonding agent in lieu of scrub coat. After filling, consolidate, then screed. Allow mortar or concrete to set to desired stiffness, then finish with trowel, manual or power, for smooth surface. Broom or burlap drag for rough surface. Areas where the depth of the repair is less than 1-inch shall be repaired with polymer-modified Portland cement mortar. In areas where the depth of the repair is greater than 1 inch, the repair shall be made with polymer-modified Portland cement concrete
- .2 As per ACI recommendations for Portland cement concrete, curing is required. Most cure with wet burlap and polyethylene, a fine mist of water or a water based* compatible curing compound. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on the temperature and humidity.
- .3 Adhere to all procedures, limitations, and cautions for the polymer-modified Portland cement mortar in the manufacturers current printed technical data sheet and literature

3.3 CLEAN UP

- 3.3.1 Keep Work areas free of surplus cleaning compounds and debris by daily cleanup.
- 3.3.2 At the end of each workday during progress of Work, empty cans, remove rubbish, rags and other discarded materials from the site. Upon completion of the Work, clean concrete, window glass, and other spattered surfaces. Remove spattered coatings by washing, scraping, or other proper methods, using care not to scratch or otherwise damage adjacent finished surfaces. Remove tools, equipment and surplus materials.
- 3.3.3 Replace or repair Work of all trades soiled or damaged by the façade repair and restoration.
- 3.3.4 Final Cleaning: Provide final cleaning operations as work progresses. Comply with manufacturer's instructions.
 - .1 Complete the final cleaning operations before requesting inspection for Certification of Substantial Completion for the entire Project or a portion of the Project.
 - .2 Clean the Project site, yard, and grounds of rubbish, waste materials, litter, and foreign substances. Sweep paved areas broom clean. Remove chemical spills, stains, and other foreign deposits. Rake grounds that are not planted or paved to a smooth even-textured surface.

- .3 Remove tools, cleaning and stabilization equipment, machinery, and surplus material from the site.
- .4 Remove debris and surface dust from limited access spaces, including roofs, porches, glass, and similar areas.
- .5 All glass surfaces and metal frame surfaces of all windows, doors and louvers on wall areas of building proper are to be professionally cleaned at the completion of all work on specified elevation. If repair work performed on an elevation contaminates cleaned glass from an adjacent elevation, those glass units will need to be re-cleaned.
- .6 Leave the Project clean and ready for occupancy.
- .7 Remove temporary protection and facilities installed during masonry cleaning and stabilization Work to protect previously completed installations.
- .8 Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of in a lawful manner. Where extra material of value remaining after completion of associated masonry cleaning and stabilization Work have become the Owner's property, dispose of these materials as directed by Architect.

END OF SECTION

SECTION 05 59 13

METAL BALCONIES, PREFAB ALUMINUM RAILINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Watertight interlocking aluminum decking.
- B. Aluminum railings.

1.2 RELATED SECTIONS

- A. Section 05 50 00 - Metal Fabrications.
- B. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

- A. Aluminum Association, Inc (AA):
 - 1. ADM1 - Aluminum Design Manual.
- B. American Architectural Manufacturers Association (AAMA):
 - 1. AAMA 2603.02 - Voluntary Specifications, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
- C. ASTM International (ASTM):
 - 1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- D. National Fire Protection Association (NFPA):
 - 1. NFPA 101 - Life Safety Code.
 - 2. NFPA 5000 - Building Construction and Safety Code.
- E. North American Deck and Railing Association (NADRA).

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data:
 - 1. Manufacturer's data sheets on each product to be used.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Typical installation methods.
- C. Verification Samples: For each material and finish specified, two samples representing actual finishes.
- D. Shop Drawings: Architect and manufacturer approved shop drawings showing details including but not limited to locations, components, anchorage requirements, trim details, accessories, tolerances, clearances and relationship to adjacent construction.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
- B. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.
 - 1. To stack: Mate neighboring boards face-to-face and water channel-to-water channel on evenly spaced support blocks and on a level flat surface.
 - 2. Do not exceed 48 inches (1219 mm) on-center.
 - 3. Do not stack above 36 inches (76 mm).
 - 4. Do not stack multiple bundles.
 - 5. Do not store varying profiles within the same stack.
 - 6. Keep the finished face protected from abrasions and rough surfaces.
 - 7. Do not handle or drag in a manner where the "face" could become scratched.
 - 8. Do not stack unsheathed.
 - 9. Do not allow grit such as sand to become wedged in between faces of two boards.
- B. Store products in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.
- C. Protect from damage due to weather, excessive temperature, and construction operations.

1.8 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 recommended limits.

1.9 WARRANTY

- A. Manufacturer's Standard Warranty:
 - 1. Limited Lifetime Warranty for Structural Deck Drainage Systems: Components of system to be free from manufacturing and structural defects.
 - 2. Leak-Proof Guarantee: Systems will not leak from joint seams in normal wet weather conditions when installed according to manufacturer guidelines.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Aluminum Decking: Versadeck
Aluminum Railings: Fortress Railing
- B. Substitutions: Not permitted.

2.2 DECKING

- A. Watertight Interlocking Aluminum Decking: Versadry R-40 as manufactured by Versadeck Aluminum Decking.
1. Description: Interlocking boards provide gapless, single layer, watertight decking surface.
 2. Compliance:
 - a. Aluminum: 6005-T5 Series, marine grade aluminum.
 - 1) Meets specifications and guidelines for aluminum structures as recommended by AA ADM1 and required by International Building Code (IBC).
 - b. Outdoor Exposure: Meets durability requirements of AAMA 2603.02.
 3. Color: Light Clay.
 - a. Non-combustible Class A
 - b. Smoke Developed Index (ASTM E84): 90.
 4. Finish Type: 80mil Polyurea Coating
 5. Fabrication: Extruded.
 6. Hidden Fastener System: DryClip by Versadeck.
 7. Strength: 100 psf (19.2 kPa) at maximum joist spacing of 24 inches (610 mm) on-center.
 8. Drainage:
 - a. Pitch: 1/8 inch downward pitch per linear foot is recommended by manufacturer.
 - b. Overhang: 2 inches beyond the header joist on drainage, to prevent backsplash.
- B. Components:
1. Hardware: No. 10 stainless steel screws.
 2. Lengths Required: As scheduled and indicated on Drawings.
 3. Start Boards:
 - a. Design: Incorporates tongue receivers to accept main boards.
 - b. Width: 5-1/2 inches (140 mm).
 4. Main Boards:
 - a. Design:
 - 1) Can be ripped lengthwise to cover non-standard deck widths.
 - 2) Incorporates tongues and tongue receivers to accept other boards.
 - b. Width: 6 inches (152 mm).
 5. Finish Boards:
 - a. Design: Incorporates tongues to fit into receivers of main boards.
 - b. Width: 5-1/2 inches (140 mm).
 6. Trim and Channel Plugs: To provide finished appearance.
 - a. Design: Serves as drip edge on drainage side.
 - b. Types: Edge Trim
 - c. Trim Lengths: Available up to 32 feet.

2.3 ALUMINUM RAILINGS

- A. Aluminum Railings: Fortress Railing www.fortressrailing.com
1. Model AI13 Plus, aluminum railing system:
 - a. Rail Post Height: 38 inches high panels with AI13 Plus Accent Top Rail.
 - b. Color: White.
 2. Fabrication: Extruded.
 3. Finish Type: Powder-coat.
 4. Application: Pedestal installation, does not require installation inside or outside of deck frames.
 - a. Bases: 5 inch square base.
 - b. Hole Spacing: 4-1/4 inches on-center.
 5. Mounting and Attachments:

- a. Bottom Rails: Attached to rail posts approximately 3-3/4 inches above deck surface.
 - b. Fixed Rail Mounting: Proprietary, low profile design, secures connection between horizontal rail sections and rail posts; color matched to rails.
- 6. Mounting and Attachments: "Evolve External Brackets" by Fortress Railing.
- B. Components:
 - 1. Hardware: Powder coated stainless steel screw tops, color-matched to rail system.
 - 2. Rail Sections: Pre-cut, pre-drilled boxed kits.
 - 3. Rail Posts:
 - a. Design: Square tubing and decorative post caps.
 - b. Thickness: 1/8 inch.
 - c. Profile: 3 x 3 inches.
 - d. Rail Post Skirts: Two-piece caps attach to rail posts for a finished appearance.
 - e. Post Caps: Press fit onto rail posts, provides finished appearance.
 - 4. Picket Rails: Including but not limited to handrail ribbons, bottom rail ribbons and pickets.
 - a. Pickets: Aluminum, 3/4 inch square x 0.06 inches thick.
 - b. Spacing Between Pickets: 4-1/2 inches on-center.
 - c. Bottom Rails: 1 1/4 x 1 1/4 inch square.
 - 5. Decorative top rail:
 - a. A113 Plus aluminum accent top rail. Finish to match panels (white).

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Prepare substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions.
- B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
- C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions

3.2 INSTALLATION

- A. Install in accordance with manufacturer's instructions, approved submittals and in proper relationship with adjacent construction.

3.3 FIELD QUALITY CONTROL

- A. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

3.4 CLEANING AND PROTECTION

- A. Do not walk on installation until installation is complete and profiles have been secured to frame.
- B. Clean installed products in accordance with manufacturer's recommendations, with water and mild soap; do not use acidic or abrasive cleaning solutions.
- C. Protect products in accordance with the manufacturer's recommendations.

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

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes wall framing, and blocking in walls.

1.2 QUALITY ASSURANCE

- A. Perform Work in accordance with the following agencies:
 - 1. Lumber Grading Agency: Certified by NIST PS 20.
 - 2. Plywood Grading Agency: Certified by APA/The Engineered Wood Association.
- B. Perform Work in accordance with Ohio Building Code.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

- A. Lumber Grading Rules: SPIB, ASLS.
- B. Beam Framing: Douglas fir or southern yellow pine species, No. 2 grade, 2" and wider size classification, 19 percent maximum moisture content.
- C. Joist Framing: Douglas fir or southern yellow pine species, No. 2 grade, 2" and wider size classification, 19 percent maximum moisture content.
- D. Columns: Douglas fir or southern yellow pine species, No. 2 grade, 4" and wider size classification, 19 percent maximum moisture content.
- E. Rafter Framing: Douglas fir or southern yellow pine species, No. 2 grade, 2" and wider size classification, 19 percent maximum moisture content.
- F. Non-structural Light Framing: Stress Group D, spruce, pine, fir species, 19 percent maximum moisture content.
- G. Studding: Stress Group D, spruce, pine, fir species, 19 percent maximum moisture content.
- H. Sill Plate: AWP A C2 Lumber, Stress Group D, spruce, pine, and fir species, and 19 percent maximum moisture content, pressure preservative treated.

2.2 ACCESSORIES

- A. Fasteners: Galvanized steel for exterior, high humidity, and treated wood locations, plain finish elsewhere. Provide galvanized die stamped steel connectors, as applicable.

PART 3 EXECUTION

3.1 FRAMING

- A. Erect wood framing members in accordance with applicable Ohio Building Code. Place members level and plumb. Place horizontal members crown side up.
- B. Place sill gasket directly on foundation.
- C. Frame double joist headers at floor and ceiling openings. Frame rigidly into joists. Frame double joists under wall studding.

3.2 FIREBLOCKING AND DRAFTSTOPPING

- A. Install fire blocking to cut off concealed draft openings caused from construction activities.
- B. Repair any compromises to or penetrations in tenant separation walls in the unit and in attic.

3.3 SITE APPLIED WOOD TREATMENT

- A. Treat site-sawn cuts. Brush apply one coat of preservative treatment on untreated wood in contact with cementitious materials. Allow preservative to cure prior to erecting members.

END OF SECTION

SECTION 07 31 13
ASPHALT SHINGLES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Asphalt shingles.
 - 2. Ice dam membrane.
 - 3. Underlayment.
 - 4. Valley protection.
 - 5. Roof vents.
 - 6. Metal flashings and accessories.

1.2 SUBMITTALS

- A. Product Data: Submit data indicating material characteristics, and limitations.
- B. Samples: Submit two 6x6 inch samples of each shingle color indicating color range and finish texture/pattern; for color and texture selection.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with NRCA Steep Roofing Manual.
- B. Roof Covering Fire Classification: Minimum Class A when tested in accordance with ASTM E108 or UL 790.
- C. Apply label from agency approved by authority having jurisdiction to identify each roof assembly component.

1.4 ENVIRONMENTAL REQUIREMENTS

- A. Do not install ice dam membrane and shingles when ambient air temperatures are below 45 degrees F.

1.5 WARRANTY

- A. Material Warranty Period: Furnish 30 year manufacturers warranty for asphalt shingles.
- B. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to 80 mph for 5 years from date of Substantial Completion.
- C. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor five years from date of Substantial Completion.
- D. Workmanship Warranty Period: 10 years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 ASPHALT SHINGLES

- A. Manufacturers:
 - 1. CertainTeed: Match existing color and style.
 - 2. Owens Corning: Match existing color and style.
 - 3. Or approved equal. Substitutions – Section 01 00 00.
- B. Asphalt Shingles: ASTM D3462; glass fiber mat base, mineral granule surface type; 250 lb/100 sq ft weight; self sealing type; laminated overlay type; algae resistant, color and texture as selected.

2.2 COMPONENTS

- A. Ice Dam Membrane: ASTM D1970; self adhering polymer modified bituminous sheet material, slip resistant surface, 40 mils thick, 36 inches wide, with strippable release paper to expose adhesive surface; Grace Ice and Water Shield as manufactured by Grace Construction Products, or equal.
- B. Underlayment: ASTM D226; Type I, No. 15 unperforated asphalt felt.

2.3 ACCESSORIES

- A. Nails: ASTM F1667; standard round wire roofing nails hot dipped galvanized steel type, minimum 0.105 inch diameter shank, minimum 0.375 inch diameter head; of sufficient length to penetrate through roof sheathing.
- B. Plastic Cement: ASTM D4586, Asphalt type with mineral fiber components, free of toxic solvents, capable of setting within 24 hours at temperatures of 75 degrees F and 50 percent RH.
- C. Lap Cement: Fibrated cutback asphalt type, recommended for use in application of underlayment, free of toxic solvents.
- D. Flashing Materials:
 - 1. Pre-Finished Aluminum Sheet: ASTM B209; 3003 alloy, H14 or temper as required to suit application; 0.024 inch thick; mill finish shop pre-coated with acrylic top coat; color as selected from manufacturer's standard colors.
- E. Bituminous Paint: Acid and alkali resistant type; black color.

2.4 FABRICATION

- A. Form flashings to protect roofing materials from physical damage and shed water.
- B. Form eave edge and gable edge flashing to extend minimum 2 inches onto roof and minimum 0.25 inches below sheathing.
- C. Form flashing sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental to appearance or performance.
- D. Hem exposed edges of flashings minimum 1/4 inch on underside.
- E. Apply bituminous paint on concealed surfaces of flashings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify roof penetrations and plumbing stacks are in place and flashed to deck surface. Verify all stacks are continuous from appliances and/or fixtures through roof. Repair loose joints in stacks prior to roofing.
- B. Verify roof openings are correctly framed.
- C. Verify deck surfaces and existing shingles are dry, free of ridges, warps, or voids.

3.2 PREPARATION

- A. Strip existing roofing materials to deck.
- B. Repair any deteriorated roof sheathing. Verify roof clips are installed and sheathing is correctly anchored.
- C. Broom clean deck surfaces under ice dam membrane and underlayment.

3.3 INSTALLATION

- A. Ice Dam Membrane Installation:
 - 1. Place eave edge metal flashings tight with fascia boards. Weather lap joints minimum 2 inches and seal with plastic cement. Secure flange with nails at maximum 12 inches on center.
 - 2. Install ice dam membrane parallel with eave edge, flush with face of eave edge flashing with edges lapped shingle style and ends lapped and staggered between rows.
 - 3. Extend ice dam membrane minimum 2 ft up-slope beyond interior face of exterior wall.
- B. Underlayment Installation:
 - 1. Place one ply of underlayment with ends and edges weather lapped 2 inches. Stagger end laps of each consecutive layer. Nail underlayment in place.
 - 2. Install underlayment in accordance with manufacturer's instructions. Nail underlayment overlap at 36 inches on center.
 - 3. Weather lap and seal items projecting through or mounted on roof watertight with plastic cement.
- C. Valley Protection Installation:
 - 1. Ice Dam Membrane - Closed Valleys:
 - a. Place ice dam membrane sheet, 36 inches wide, centered over valley as valley protection.
- D. Metal Flashing and Accessories Installation:
 - 1. Weather lap joints minimum 2 inches and seal weather tight with plastic cement.
 - 2. Secure in place with nails. Conceal fastenings.
 - 3. Flash and seal Work weather tight, projecting through or mounted on roofing with plastic cement.
- E. Asphalt Shingles Installation:

1. Place shingles in straight coursing pattern with 5 inch weather exposure to produce double thickness over full roof area. Install double course of shingles at eaves.
2. Project first course of shingles 3/4 inch beyond fascia boards.
3. Extend shingles 1/2 inch beyond face of gable edge fascia boards.
4. Extend shingles on one slope across valley and fasten. Trim shingles from other slope 2 inches from valley center line to achieve closed cut valley, concealing valley protection.
5. Cap hips and ridges with individual shingles, maintaining 5 inch weather exposure. Place to avoid exposed nails.
6. Cap hips and ridges with individual shingles. Place to avoid exposed nails.
7. Coordinate installation of roof mounted components or Work projecting through roof with weather tight placement of counterflashings.
8. Complete installation to provide weather tight service.
9. Paint all roof penetrations to match shingles.

END OF SECTION

SECTION 07 53 03

ELASTOMERIC MEMBRANE ROOFING – FULLY ADHERED

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. EPDM Adhered membrane roofing system used as an underlayment for aluminum decking.

1.2 WORK INCLUDES

- A. Installation of a new EPDM roofing system.

1.3 RELATED SECTIONS:

- A. Division 07 Section "Sheet Metal Flashing and Trim" for flashings, and counterflashings.

1.4 REFERENCES

- A. Roofing Terminology: Refer to the following publications for definitions of roofing work related terms used in this Section:
 - 1. ASTM D 1079 "Terminology Relating to Roofing and Waterproofing."
 - 2. Glossary of NRCA's "The NRCA Roofing and Waterproofing Manual."
 - 3. Roof Consultants Institute "Glossary of Roofing Terms."
- B. Sheet Metal Terminology and Techniques: SMACNA Architectural Sheet Metal Manual.

1.5 DESIGN CRITERIA

- A. General: Installed roofing membrane systems shall remain watertight; and resist specified wind uplift pressures, thermally induced movement, and exposure to weather without failure.
- B. Material Compatibility: Roofing materials shall be compatible with one another under conditions of service and application required, as demonstrated by roofing system manufacturer based on testing and field experience.

- C. Wind Uplift Performance: Roofing system shall be identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist wind uplift pressure calculated in accordance with ASCE-7.
 - 1. Field-of-Roof Uplift Pressure: 60psf
 - 2. Perimeter Uplift Pressure: 75 psf
 - 3. Corner Uplift Pressure: 120 psf

1.6 SUBMITTALS

- A. Product Data: Manufacturer's data sheets for each product to be provided.
- B. Verification Samples: Provide for each product specified.
- C. Guarantees: Special guarantees specified in this Section.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and is eligible to receive the specified manufacturer's guarantee.
- B. Factory Mutual Global Corporation (FMG)/Roof Material Manufacture: Roof materials supplied must be FM approved and assembly combinations must have a Roof NAV number or be contained in a FM approval report or be membrane manufacture approved for wind requirement as outlined herein. Assembly securement matching new construction, re-roof or recover, or manufacturers criteria must meet the intent of the test criteria set forth in FM test 4470 and FM 4450 to support uplift pressure resistance for windstorm classification I-90 rating. Roof membrane sheets that require torching must follow FM guidelines.
- C. Testing Agency Qualifications: Independent testing agency with the experience and capability to conduct the testing indicated, as documented in accordance with ASTM E 548.
- D. Source Limitations: Obtain all components from the single source roofing system manufacturer guaranteeing the roofing system. All products used in the system must be labeled by the single source roofing system manufacturer issuing the guarantee.
- E. Fire-Test-Response Characteristics: Roofing materials shall comply with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
 - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
 - 2. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.

- F. Contractor is required to locate under metal deck existing conduits/lines prior to using any penetrating deck fasteners to avoid punching conduits/lines, coordinate inspection with owner.
- G. The contractor shall test each roof drain and/or downspouts for proper water flow and notify the owner of any clogged drain, commencement of work shall constitute acceptance of drains and any costs to unclogged drains shall be borne by the contractor.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage. Store and protect products in accordance with manufacturer's instructions.
- B. Do not overload structure with storage of materials, verify roof deck weight capacity and location of structural supports, only items needed that day shall be stored on the roof. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.
- C. Provide temporary securement of existing membrane to prevent membrane blow off while installing new roof system.
- D. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer.
- E. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- F. One standard listed multipurpose dry chemical fire extinguisher, with a rating of 2A-20B:C shall be provided and located near the work area. Additional fire extinguishers shall be provided for different roof levels/work sites. Contractor to ensure all personnel are trained to use fire extinguishers.

1.9 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when current and forecasted weather conditions permit roofing system to be installed in accordance with manufacturer's written instructions and guarantee requirements.
- B. Do not apply roofing system during inclement weather or when the chance is 40% or greater, percentage as listed on [www: weather.com](http://www.weather.com) for the Piqua, OH area, percentage as listed when read at 7A.M. local time.
- C. Do not apply roofing system to damp or frozen deck surface.

1.10 WARRANTIES

- A. Provide a manufacturer's warranty for both repairs/replacements due to any faults in the material and workmanship (Total System Responsibility). Any repairs/replacement due to normal wear and tear, membrane defects, workmanship defects and damage due to winds up to 75 mph shall be performed at no charge to the owner through the period of the warranty. Roof Warranty shall be a no dollar limit type with no penal sum, covering all insulation, fasteners, membrane, flashings, metal edge, etc., regardless of the manufacture, sheet metal items such as edge/coping must be furnished by the manufacture of the roofing membrane. When a contractor warranty is provided or implied, this warranty must bind the manufacturer and contractor, for the terms of their agreement, to perform any necessary repairs/replacements for the term of the warranty. Coating shall be warranted to obtain the brightness rating for the period of the warranty.
 - 1. EPDM Roof System shall be warranted for (20) twenty five years.
 - 2. Sheet metal edges shall be warranted for winds up to 75 mph and other requirements as stated herein.
- B. In the event of a default by the contractor, the manufacture will provide a new contractor to fulfill the warranty obligation.
- A. Installer's Guarantee: Submit roofing Installer's guarantee signed by Installer, covering Work of this Section, including all components of roofing system for the following guarantee period:
 - 1. Guarantee Period: Two Years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ETHYLENE PROPYLENE DIENE MONOMER ROOFING MEMBRANE - EPDM

- A. Non-reinforced uniform, flexible sheet made from Ethylene Propylene Diene Monomer, ASTM D 4637, Type I. Basis of Design: Firestone RubberGard EPDM.
 - 1. Thickness (minimum): 60 mils (1.5 mm)
 - 2. Exposed Face Color: Black.

2.2 AUXILIARY ROOFING MATERIALS – SINGLE PLY

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 - 1. Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.
- B. Membrane Flashing: ASTM D4811, Type II, .055 inches thick, black, non-reinforced, nonvulcanized, synthetic, single ply EPDM.

- C. Self-Adhesive Flashing: Semi-cured .055 inches thick, EPDM membrane laminated to 35 mil EPDM tape adhesive.
- D. Lap Splice Tape: .035 inches thick, EPDM-based, formulated for compatibility w/EPDM membrane and high solid primer.
- E. Adhesive Primer: High-solids, synthetic rubber based formulated for compatibility with EPDM membrane. VOC content less than 2.1 lbs./gal.
- F. Splice Adhesive: Synthetic polymer-based. Compatible with EPDM and metal surfaces.
- G. Bonding Adhesive: Neoprene-based. Compatible with EPDM membrane and wide variety of substrate materials including masonry, wood and insulation facings.
- H. Water Block Seal: Butyl rubber sealant.
- I. Seam Edge Treatment: EPDM rubber-based sealant, formulated for sealing exposed edges of membrane at seams.
- J. Pourable Sealer: Two-part polyurethane, two color for reliable mixing.
- K. Metal Plates and Strips Used for Fastening Membrane and Insulation: Steel with Galvalume coating, corrosion resistance meeting FM 4470 criteria.
- L. Termination Bars: Aluminum bars with integral caulk ledge, 1.3" wide X 0.10" thick.

2.3 AUXILIARY ROOFING SYSTEM COMPONENTS

- A. Metal Flashing Sheet: Metal flashing sheet is specified in Division 07 Section "Sheet Metal Flashing and Trim."

2.4 INSULATION ACCESSORIES

- A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.
- B. Provide factory preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.
- C. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roof insulation to substrate, and furnished by roofing system manufacturer. Basis of Design: Firestone Heavy Duty Fasteners and Insulation Fastening Plates.
- D. Wood Nailer Strips: Comply with requirements in Division 06 Section "Miscellaneous Rough Carpentry."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions for compliance with the requirements affecting performance of roofing system. Verify that insulation is clean and smooth, free of depressions, irregularities, or projections, properly leveled, start of work constitutes acceptance of conditions.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Pre-Installation Conference: A pre-installation conference one week prior to commencing work of this section will be mandatory. All parties responsible for work in this section are required to attend. In addition, meetings will be held each week during construction. Memos resulting from these meetings will be provided to the owner and contractor by the Associate. Roofing manufacturer's representative shall be in attendance and shall provide detailed installation instructions to all parties.

3.2 PREPARATION

- A. Clean and remove from substrate sharp projections, dust, debris, moisture, and other substances detrimental to roofing installation in accordance with roofing system manufacturer's written instructions.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 ROOFING MEMBRANE INSTALLATION, GENERAL

- A. Install roofing membrane in accordance with roofing system manufacturer's written instructions, applicable recommendations of the roofing manufacturer and requirements in this Section.
- B. Cooperate with testing and inspecting entities engaged or required to perform services for installing roofing system.
- C. Coordinate installing roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is imminent.
- D. At the end of the day's work or when precipitation is imminent, a water cut-off or other waterproof protection shall be provided to ensure a watertight condition is obtained, between the new and existing conditions, remove cut-off prior to resuming the installation of the roofing system.
 - 1. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.

- E. Proceed with installation only after unsatisfactory conditions have been corrected.

3.4 ADHERED ROOFING MEMBRANE INSTALLATION

- A. Install roofing membrane over area to receive roofing in accordance with membrane roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
 - 1. Install sheet in accordance with ASTM D 5036 and roofing system manufacturer's written instructions.
- B. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- C. Bonding Adhesive: Apply solvent-based bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.
- D. Mechanically fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.
- E. Apply roofing membrane with side laps shingled with slope of roof deck where possible.
- F. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape, and firmly roll side and end laps of overlapping roofing membranes according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of roofing membrane terminations.
 - 1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
 - 2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 - a. Remove and repair any unsatisfactory sections before proceeding with Work.
 - 3. Repair tears, voids, and lapped seams in roofing membrane that do not meet requirements.
- G. Install roofing membrane and auxiliary materials to tie in to existing roofing.
- H. Proceed with installation only after unsatisfactory conditions have been corrected.

3.5 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates in accordance with membrane roofing system manufacturer's written instructions.

- B. Apply solvent-based bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with sheet flashing.
- D. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- E. Clean seam areas and overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
- F. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.
- G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.6 FIELD QUALITY CONTROL

- A. Roof Inspections: Arrange for roofing system manufacturer's inspector to inspect roofing installation at beginning of installation for each roofing area, at mid-completion or all roof areas, and on completion of all roofing areas and submit report to Architect.
- B. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

3.7 PROTECTION AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period.
- B. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.8 ROOFING SYSTEM SCHEDULE

- A. Top Sheet: One ply 60 mil EPDM, fully adhered.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes flashings and counterflashings, gutters and downspouts and fabricated sheet metal items.

1.2 SYSTEM DESCRIPTION

- A. Sheet Metal System: Conform to criteria of SMACNA "Architectural Sheet Metal Manual."
 - 1. Gutters: SMACNA Details Style K Hanging Gutter Sloped Roof Installation.
 - 2. Downspouts: SMACNA Details Downspout '1', corrugated style.
 - 3. Flashings: SMACNA Details as applicable for building component.
- B. Gutters and Downspouts: Size components for rainfall intensity determined by storm occurrence of 1 in 10 years in accordance with SMACNA recommendations.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, termination, and installation details.
- B. Samples: Submit two samples, 6 inch in size of each type of formed metal flashing illustrating typical seam, external corner, internal corner, material, color, and finish.

1.4 WARRANTY

- A. Furnish five year manufacturer warranty for finishes.

PART 2 PRODUCTS

2.1 SHEET METAL FLASHING AND TRIM

- A. Product Description: Flashing and sheet metal; unfinished or prefinished, including gutters, downspouts, and accessories.

2.2 COMPONENTS

- A. Pre-Finished Aluminum Sheet: ASTM B209; 3003 alloy, H14 temper; 0.032 inch thick; mill finish shop pre-coated with acrylic top coat; color as selected from manufacturer's standard color or to match existing conditions.

2.3 ACCESSORIES

- A. Fasteners: Same material and finish as flashing metal.

- B. Gutter and Downspout Anchorage Devices: In accordance with SMACNA requirements.
- C. Gutter Supports: Brackets at 36" o.c.
- D. Downspout Supports: Straps.
- E. Protective Backing Paint: Bituminous.
- F. Sealant: Exterior metal lap joint butyl or polyisobutylene sealant as specified in Section 07 90 00.
- G. Plastic Cement: ASTM D4586, Type I.
- H. Reglets: Surface mounted galvanized steel.
- I. Primer and Solvent for Polyvinyl Chloride (PVC): As recommended by manufacturer.

2.4 FABRICATION

- A. Gutter Accessories: Profiled to suit gutters and downspouts.
- B. Form components to shape indicated on Drawings, accurate in size, square, and free from distortion or defects. Form pieces in longest practical lengths.
- C. Fabricate cleats and starter strips of same material as sheet, to interlock with sheet.
- D. Hem exposed edges on underside 1/2 inch; miter and seam corners. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- E. Fabricate flashings to allow toe to extend 2 inches over roofing. Return and brake edges.
- F. Form material with flat lock seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- G. Fabricate corners in one piece, 18 inch long legs; seam for rigidity, seal with sealant.
- H. Form sheet metal pans with upstand, and flanges.

2.5 SHOP FINISHING

- A. Acrylic coating: Baked enamel system conforming to AAMA 2603.
- B. Washcoat: Finish concealed side of metal sheets with washcoat compatible with finish system, as recommended by finish system manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify roof openings, curbs, pipes, sleeves, ducts, or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.

- B. Verify membrane termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

- A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to minimum dry film thickness of 15 mil.

3.3 INSTALLATION

- A. Install starter and edge strips, and cleats.
- B. Install surface mounted reglets. Seal top of reglets with sealant. Insert flashings to form tight fit. Seal flashings into reglets with sealant.
- C. Secure flashings, gutters and downspouts in place using [concealed] fasteners.
- D. Apply plastic cement compound between metal work and felt flashings.
- E. Fit components tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- F. Install sheet metal pans surrounding roof penetrations. Fill pans watertight with plastic cement.
- G. Slope gutters to downspouts 1/4 inch per 10 foot minimum.
- H. Set splash pads under downspouts.
- I. Seal joints watertight.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- 1.1.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- 1.1.2 SUMMARY – It is the intention of this project to remove all existing sealant and replace with new material in all locations affected by Work. It is essential that all existing sealant material be removed prior to installation of new sealant. All joints will be inspected prior to the placement of any new material.
- 1.1.3 Section Includes:
 - .1 One-part Urethane joint sealants.
- 1.1.4 Related Sections:
 - .1 Section 08 51 13 – Aluminum Windows
- 1.1.5 Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
 - .1 Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
 - .2 Conduct field tests for each application indicated below:
 - .1 Each kind of sealant and joint substrate indicated.
 - .3 Notify Architect ten days in advance of dates and times when test joints will be erected.
 - .4 Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
 - .5 Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.2 SUBMITTALS

- 1.2.1 Product Data: For each joint-sealant product indicated.
- 1.2.2 Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- 1.2.3 Samples for Verification: For each kind and color of joint sealant required, provide samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch-

(150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants, or wide joint sealant sample from manufacturer.

- .1 Submit samples of cured sealants for Architect color match approval to the color of prefinished aluminum windows, siding, etc. Specified material to be appropriately colored to match aluminum windows' color. Available colors are to come from standard sealant manufacturer's color pallet or custom mixed by the sealant manufacturer. Final color selection to be field verify with architect.

1.2.4 Joint-Sealant Schedule: Include the following information:

- .1 Joint-sealant application, joint location, and designation.
- .2 Joint-sealant manufacturer and product name.
- .3 Joint-sealant formulation.
- .4 Joint-sealant color.

1.2.5 Qualification Data: For qualified Installer.

1.2.6 Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

1.2.7 Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

1.2.8 Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

- .1 Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
- .2 Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

1.2.9 Warranties: Sample of special warranties.

1.3 QUALITY ASSURANCE

1.3.1 Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units with a minimum of five years of installation experience is required for this Project.

1.3.2 Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer where and when possible.

1.3.3 Product Testing: Test joint sealants using a qualified testing agency.

- .1 Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021-08 Standard practice for laboratories engaged in testing of building sealants, to conduct the testing indicated. Contractor to pay for testing services.

1.3.4 Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

- .1 Prior to start of sealant replacement, prepare the following sample mock-ups where indicated by Architect. Obtain Architect's acceptance of visual qualities before proceeding with the Work. Retain approved panels (or in place wall samples) during construction in undisturbed condition, suitably marked as a standard for judging completed Work.

1.4 PROJECT CONDITIONS

1.4.1 Do not proceed with installation of joint sealants under the following conditions:

- .1 When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (4.48 deg C).
- .2 When joint substrates are wet.
- .3 Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
- .4 Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.5 WARRANTY

1.5.1 Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

- .1 Warranty Period: Five years from date of Substantial Completion at no cost to the Owner, any and all joints which fail. The General Contractor and sealant installer shall guarantee to replace.

1.5.2 Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

- .1 Warranty Period: 15 years from date of Substantial Completion.

1.5.3 Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

- .1 Disintegration of joint substrates from natural causes exceeding design specifications.
- .2 Mechanical damage caused by individuals, tools, or other outside agents.
- .3 Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 PRODUCTS

2.1 MATERIALS, GENERAL

2.1.1 Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

- 2.1.2 Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- 2.1.3 Stain-Test-Response Characteristics: Where sealants are specified to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- 2.1.4 Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full standard or custom color range.

2.2 JOINT SEALANTS

- 2.2.1 JS-1: Single-Component, mildew resistant, Urethane Joint Sealant: ASTM C 920.
 - .1 Products: Subject to compliance with requirements, provide one of the following:
 - .1 Pecora Corporation;
 - .2 Tremco Incorporated;
 - .3 Sonneborn, BASF.
 - .4 Substitutions - See Section 01 60 00 Product Requirements.

2.3 JOINT SEALANT BACKING

- 2.3.1 General: Provide sealant backings of material that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- 2.3.2 Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) or any type, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- 2.3.3 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. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

- 2.4.1 Primer: Material recommended by joint-sealant manufacturer for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests. 100% of all bond surfaces are to be primed.
- 2.4.2 Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- 2.4.3 Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 EXECUTION**3.1 EXAMINATION**

- 3.1.1 Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- 3.1.2 Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- 3.2.1 Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - .1 Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - .2 Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - .1 Concrete.
 - .2 Masonry.
 - .3 Stone
 - .3 Remove laitance from concrete.
 - .4 Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - .1 Metal.
 - .2 Glass.
- 3.2.2 Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- 3.2.3 Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- 3.3.1 General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- 3.3.2 Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- 3.3.3 Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - .1 Do not leave gaps between ends of sealant backings.
 - .2 Do not stretch, twist, puncture, or tear sealant backings.
 - .3 Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- 3.3.4 Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- 3.3.5 Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - .1 Place sealants so they directly contact and fully wet joint substrates.
 - .2 Completely fill recesses in each joint configuration.
 - .3 Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- 3.3.6 Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - .1 Remove excess sealant from surfaces adjacent to joints.
 - .2 Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - .3 Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

3.4 FIELD QUALITY CONTROL

- 3.4.1 Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 - .1 Extent of Testing: Test completed and cured sealant joints as follows:
 - .1 Perform 1 test for each 1000 feet (300 m) of joint length thereafter or 1 test per per elevation.
 - .2 Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
 - .1 For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

.3 Inspect tested joints and report on the following:

- .1 Whether sealants filled joint cavities and are free of voids.
- .2 Whether sealant dimensions and configurations comply with specified requirements.
- .3 Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
- .4 Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
- .5 Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

3.4.2 Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

3.5.1 Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

3.6.1 Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT SEALANT SCHEDULE

3.7.1 The joint treatment schedule is intended to illustrate all joint conditions affected by Work which are meant to be sealed, as described in the schedule below, whether referenced within the Drawings or not.

JOINT SEALANT SCHEDULE	
CONDITION	TYPE
Exterior: Perimeter joints of all door frames, window frames, louvers, fixtures and other penetrations in the building enclosures not otherwise sealed weather tight. Provide continuous sealant under exterior door thresholds and window systems that set directly on floor slab.	JS-1
Exterior: Sheet metal flashing joints with masonry construction	JS-1
Exterior: Joints in sheet metal flashing and trim	JS-1
Exterior: Joints between concrete and concrete	JS-1

END OF SECTION 07 92 00

SECTION 08 11 15

PRE-ASSEMBLED METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Pre-assembled steel entry doors in metal frames

1.2 SUBMITTALS

- A. Shop Drawings: Indicate elevations, glazing, and hardware locations.
- B. Product Data: Submit frame and door configurations, core materials and finishes.
- C. Manufacturer's Installation Instructions: Submit special installation instructions.
- D. Manufacturer's Certificate: Certify Products meet or exceed specified requirements.

1.3 QUALITY ASSURANCE

- A. Surface Burning Characteristics:
 - 1. Foam Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.4 WARRANTY

- A. Section 01 00 00 - Execution and Closeout Requirements: Requirements for warranties.
- B. Furnish five year manufacturer's warranty on workmanship and materials.
- C. Furnish five year manufacturer's warranty for insulated glass units from seal failure, interpane dusting or misting, including replacement.

PART 2 PRODUCTS

2.1 PRE-ASSEMBLED STEEL DOORS

- A. Manufacturers:
 - 1. Benchmark – Therma-Tru Corp.; Model: Traditions Steel Door– Basis of Design.
 - 2. Rusco Manufacturing; Insulated Steel Entrance Doors.
 - 3. Or approved equal. Substitutions – Section 01 00 00.

2.2 PRE-ASSEMBLED STEEL FRAMES

- A. Manufacturers:
 - 1. Timely Industries; Kerfed Frame CK-Series; TA-8 Steel frame, galvanized 18 ga. steel– Basis of Design.
 - 2. Pre-finished, architect to choose from manufacturer's standard, custom and pre-matched custom colors.
 - 3. Factory installed weatherstripping. Max. U-value of 0.21. Energy Star rated.

4. See Specification Section 08 14 00 Wood Doors and Steel Frames for interior door frames.
5. Or approved equal. Substitutions – Section 01 00 00.

2.3 ENTRY DOORS

- A. Basement Garage and Laundry Room Doors:
 1. Insulated Steel Doors: 1-3/4 inch thick; 22 gauge steel sheet face, thermally broken. Entry door 6-panel door. See Drawings.
 2. Frame: Pressed steel frame. See Drawings.
 3. Entranceways: Shall be designed with weatherstripping, hand-fastened to the door or frame.
 4. Five-year manufacturer's warranty.
 5. Energy Star Rated.

2.4 DOOR COMPONENTS

- A. Steel Sheet: Galvanized to ASTM A653/A653M.
- B. Insulation: Foamed Polyurethane. Min. R-14 value for slab.
- C. Vinyl thermal break at returned facing panels.
- D. Adjustable vinyl sill sweep.
- E. Provide moulding as required at masonry openings.
- F. Adhesives and Sealants: VOC content not to exceed the following g/L; less water and less exempt compounds:
 1. Multipurpose Construction Adhesives: 70 g/L.

2.5 HARDWARE

- A. Hinges: brushed chrome finish, ball bearing, full mortise type; 4 x 4 inches, min. three hinges.
- B. Threshold: Barrier-free ADA-compliant type of extruded aluminum, thermally broken, mill finish with safety ribs, 4 inches wide by 1/2 inch height; ribbed extruded vinyl sweep across door bottom.
- C. Fabricate frames with hardware reinforcement welded in place.
- D. Configure exterior frames to accept weatherstripping.
- E. Entranceways: Shall be designed with weatherstripping, factory installed to door frame.
- F. Coordinate hardware and install accessories to make a fully and proper functioning door assembly.

2.6 FACTORY FINISHING

- A. Doors:
 1. Primer: Baked on enamel primer.
 2. Factory Finished, baked polyester powder coat paint. Color by architect from standard and premium colors.

- B. Frames:
 - 1. Primer: Baked on powder coat or enamel finish.
 - 2. Factory Finished. Color by architect from standard or premium colors. Color to match door.
- C. Hardware Finish:
 - 1. Steel Components: Satin chrome.
 - 2. Brass Components: Satin chrome.
 - 3. Aluminum Components: Mill finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify framed openings are correct size and thickness and project conditions are acceptable.

3.2 PREPARATION

- A. Apply one coat of bituminous paint to interior of metal to be in contact with cementitious materials.

3.3 INSTALLATION

- A. Install units in accordance with manufacturers' installation instructions.
- B. Install doors and frames plumb, level and square.
- C. Coordinate installation of hardware specified in Section 08 71 00.
- D. Factory Finished.
- E. Adjust door and frame units to ensure smooth and balanced movement.
- F. Rain deflectors to be installed at heads of exterior doors.
- G. Provide sealant at bottom of metal door frames and slab.

3.4 ERECTION TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

3.5 SCHEDULES

- A. See door schedule on Drawings.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes hardware for wood and steel doors.
 - 1. Provide door gaskets, including weather-stripping and seals, and ADA thresholds at all exterior doors.

1.2 SUBMITTALS

- A. Shop Drawings:
 - 1. Indicate locations and mounting heights of each type of hardware, schedule, and catalog cuts.
 - 2. Submit manufacturer's parts list, and templates.
- B. Manufacturer's installation instructions: Submit special procedures, and perimeter conditions requiring special attention.

1.3 CLOSEOUT SUBMITTALS

- A. Project Record Documents: Record actual locations of installed cylinders and their master key code.
- B. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- C. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with the following requirements:
 - 1. ANSI A156 series.
 - 2. NFPA 101 - Life Safety Code.
- B. Furnish hardware marked and listed in BHMA Directory of Certified Products.
- C. Maintain one copy of each document on site.
- D. Coordinate work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
 - 1. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.
- E. Coordinate Owner's keying requirements during course of work.

1.5 WARRANTY

- A. Furnish five year manufacturer warranty for door hardware.

1.6 MAINTENANCE SERVICE

- A. Provide service and maintenance services on door closers for one year from Date of Substantial Completion.
- B. Provide special wrenches and tools applicable to each different or special hardware component.

PART 2 PRODUCTS

2.1 DOOR HARDWARE

- A. Lockset Manufacturers
 - Allegion – Falcon Mortise lockset MA431 Series “Dane Gala” Design, 6 pin standard cylinder, or approved equal. Classroom Lock with deadbolt and inside cylinder substituted with a thumb turn.
 - 1. Substitutions: Section 01 00 00 – Product Requirements
- B. Latch Set, and Privacy Lock, & Dummy Lever Manufacturers:
 - 1. Allegion – Falcon Lock Model W-Series. Small Rose. Visitable Units: “Dane” Design, or approved equal. UFAS Units.
 - 2. Substitutions: Section 01 00 00 – Product Requirements
- C. Pair of Swing Door Hardware:
 - 1. Ives Hardware Model 32 Roller Catch, or approved equal – Top Corner of each door
 - 2. Substitutions: Section 01 00 00 – Product Requirements
- D. Door Viewer Manufacturers:
 - 1. Ives Model 698, or approved equal
 - 2. Substitutions: Section 01 00 00 – Product Requirements

2.2 COMPONENTS

- A. General Hardware Requirements: Where not specifically indicated, comply with applicable ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
 - 1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
 - 2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
 - 3. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
 - a. Finish: Match hardware item being fastened.
 - 4. Electrical Devices: Make provisions and coordinate requirements for electrical devices and connections for hardware.
- B. Hinges: ANSI A156.1, full mortise type, template type, ANSI A156.7, complying with following general requirements unless otherwise scheduled.
 - 1. Widths: Sufficient to clear trim projection when door swings 180 degrees.

2. Number: Furnish minimum three hinges to 90 inches high, four hinges to 120 inches high for each door leaf.
 - a. Residential Interior Wood Doors: Furnish minimum three hinges.
 - b. Size and Weight: Doors 1-3/8" thick: 4" size.
 3. Pins: Furnish nonferrous hinges with non-removable pins (NRP) at exterior doors, non rising pins at interior doors.
 4. Tips: Flat button tips with matching plug.
 5. Provide three spare sets.
- C. Locksets: Furnish locksets compatible with specified cylinders. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames.
1. Mortise Locksets: ANSI A156.13, Series 1000, Grade 1 unless otherwise indicated.
- D. Latch Sets: Match locksets. Typical 2-3/4" backset. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt.
1. Bored (Cylindrical) Latchsets: ANSI A156.2, Series 4000, Grade 1 unless otherwise indicated.
 2. Keying: Keyed as directed by Owner.
 3. Keys: Nickel silver. Stamp keys with "DO NOT DUPLICATE".
 4. Supply keys in the following minimum quantities
 - a. 5 master keys
 - b. 3 keys per residential unit.

2.3 ACCESSORIES

- A. Lock Trim: Furnish levers with smaller 2 9/16" rose.
- B. Through Bolts: Through bolts and grommet nuts are not permitted on door faces in occupied areas unless no alternative is possible.
- C. Provide pre-finished aluminum drip edge at head of exterior entry doors.
- D. Door silencers at metal frames for all interior doors.

2.4 FINISHING

- A. Finishes: ANSI A156.18; with following finishes except where otherwise indicated in Schedule at end of section.
 1. Hinges:
 - a. BHMA 626, brushed chrome finish.
 2. Typical Exterior Exposed and High Use Interior Door Hardware:
 - a. BHMA 626, brushed chrome.
 3. Typical Interior Door Hardware:
 - a. BHMA 626, brushed chrome.
 4. Thresholds: Finish appearance to match door hardware on exterior face of door.
 - a. BHMA 628, satin aluminum, clear anodized.
 5. Other Items: Provide manufacturer's standard finishes matching similar hardware types on same door, and maintaining acceptable finish considering anticipated use and BHMA category of finish.

PART 3 EXECUTION**3.1 EXAMINATION**

- A. Verify doors and frames are ready to receive work and dimensions are as indicated on shop drawings and as instructed by manufacturer.

3.2 INSTALLATION

- A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.
- B. Mounting Heights from Finished Floor to Center Line of Hardware Item: Comply with manufacturer recommendations and applicable codes.
1. Locksets: 38 inches
 2. Dead Bolt: 48 inches
 3. Top Hinge: Jamb manufacturer's standard, but not greater than 10 inches from head of frame to centerline of hinge.
 4. Bottom Hinge: Jamb manufacturer's standard, but not greater than 12-1/2" from floor to centerline of hinge.
 5. Intermediate Hinges: Equally spaced between top and bottom hinges and from each other.

3.3 ADJUSTING

- A. Adjust hardware for smooth operation.

3.4 SCHEDULE

- A. The following hardware sets are intended to establish type and standard of quality when used together with these section requirements. Examine Drawings and Specifications and furnish proper hardware for door openings.
1. Each Entry door at UFAS accessible units shall receive a stainless steel kick plate on both sides of door.

HARDWARE SET 01 – BASEMENT GARAGE DOOR AND LAUNDRY DOOR

3	EA	HINGE	5PB 4X4	US26D	B/O
1	EA	ENTRANCE LOCK	MA431 DG	626	FAL
1	EA	DOOR STOP	ROCKWOOD 409 US32D		
1	EA	WEATHER-STRIPPING	FURNISHED BY DOOR MANUF		B/O
1	EA	DOOR BOTTOM	FURNISHED BY DOOR MANUF		B/O
1	EA	THRESHOLD	FURNISHED BY DOOR MANUF		B/O
1	EA	ALUM. DRIP EDGE			
1	EA	MORTISE THUMBTURN	973 OR 974 AS REQ'D	626	FAL

See Part 2.2 & 2.3 above for accessories and other hardware.

END OF SECTION

SECTION 09 90 00

PAINTING AND COATING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and field application of paints and other coatings.
- B. Paint all exposed surfaces, new and existing, unless otherwise indicated.
 - 1. Exterior work
 - a. Exterior trim components requiring painting.
 - b. Exposed steel lintels.
 - c. Exterior doors and frames.
 - d. Interior and exterior surfaces of concrete foundation walls and slabs.
- C. Do not paint brick veneer.
- D. Do not paint prefinished items, finished metal surfaces, operating parts, labels, and materials obviously intended to be left exposed such as brick and tile.
- E. Unless otherwise indicated do not paint concealed surfaces.
- F. Obtain primers and undercoat materials for each coating system from the same manufacturer as the finish coats. Primer and finish coat shall be factory applied, finish coat shall be field applied.
- G. **Extra Materials:** Deliver to Owner **two (2) 1-gallon** Containers, properly labeled, factory sealed, of each color and type of finish coat paint used on project for each building in contract. Materials shall be signed for by CMHA Construction Inspector.
- H. Minimum surface temperature of 50 degrees required for all coating systems.
- I. Store all materials in tightly closed containers when not in use, away from heat, electrical equipment, sparks and open flames. Use approved bonding and grounding procedures. Keep out of the reach of children and residents.
- J. Transfer materials to approved containers with complete and appropriate labeling.
- K. Contractor shall police the site on a daily basis and remove all debris and empty cans etc. on a daily basis.

1.2 APPLICATORS QUALIFICATIONS

- A. Engage an experienced applicator with a minimum of five years experience and who has completed painting systems application similar in materials and extend to those indicated for the Project and that have resulted in a construction record of successful in-service performance.

1.3 SUBMITTALS

- A. Product Data and Color Samples.

1. Contractor shall provide two copies of Manufacturers product data and paper samples for initial color selections. After initial color selections, contractor shall supply min. of 2 – 6" x 6" samples on actual substrate to be painted of each color selected. Architect will select a minimum of three color schemes of three colors each.
2. Mockups: Full-coat finish sample (benchmark sample) of each type of coating, substrate, color, and finish required in area of not less than 100 sq. ft. Comply with PDCA P5. Contractor shall not begin work until final approval is given on color and finish.

1.4 REFERENCES AND REGULATIONS:

- A. Standards: Comply with applicable provisions and recommendations of the following, except when otherwise shown or specified:
 1. OSHA Safety Standards for the Construction Industry, Title 29 - Labor, Subtitle B – Regulations Relating to Labor, Occupational Safety and Health Administration (OSHA) 1926, 07/01/93 editions.
 2. OSHA Worker Safety and Health Act Regulation 29 CFR No. Parts 1900 through 1910.1400, 07/01/93 and later editions.
 3. SSPC Volume 1, Good Painting Practice, 1989 edition.
 4. SSPC Volume 2, Systems and Specifications, 1991 edition, Surface Preparation Guide and Paint Application Specifications of the Steel Structures Painting Council.
 5. NACE Standards, Volume I and II, 1992 editions of the National Association of Corrosion Engineers.
 6. SSPC and NACE Painter Safety Guidelines, latest editions.
- B. Requirements of Regulatory Agencies, conform with the following:
 1. Clean Air Act (CAA) – hazardous Air Emissions by U.S. EPA or State Agency under Regulation 40 CFR 61 or state equivalent.
 2. Clean Water Act (CWA) – hazardous Water Releases by U.S. EPA or State Agency under Regulation 40 CFR 116 through 117 or state equivalent.
 3. Toxic Substances Control Act (TSCA) – Toxic substance by U.S. EPA under Regulation 40 CFR 761.
 4. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or "SuperFund") – Uncontrolled Hazardous Waste Sites and Hazardous Substance Release by U.S. EPA under Regulation 40 CFR 302.
 5. Resource Conservation and Recovery Act (RCRA) – Generation, Transportation, Treatment, Storage and Disposal of hazardous waste by U.S. EPA or State Agency under Regulation 40 CFR 260 through 267 or state equivalent.
 6. Hazardous and Solid Waste Amendments (HSWA) – Further regulation of hazardous waste by U.S. EPA or State Agency under Regulation 40 CFR through 267 or state equivalent.
 7. Hazardous Material Transportation Act (HMTA) – Transportation of Hazardous Material by DOT or State Agency under Regulation 49 CFR 171 through 179 or state equivalent.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit maintenance and cleaning instructions.

1.6 QUALITY ASSURANCE

- A. Surface Burning Characteristics:
 1. Fire Retardant Finishes: Maximum 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Store and apply materials in environmental conditions required by manufacturer's instructions.

PART 2 PRODUCTS

2.1 COLORS AND FINISHES

- A. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.
 - 1. Lead: Measurable lead content in either the pigment or binder will not be permitted.
 - 2. The finish coats shall match colors selected.
 - 3. WHERE MULTIPLE COAT EXTERIOR COATING SYSTEMS ARE SPECIFIED, SUCH AS THOSE WITH INTERMEDIATE AND FINISH COATS. THE INITIAL COAT(S) SHALL BE TINTED APPROXIMATELY 25% LIGHTER IN COLOR THAN THE NEXT COAT IN ORDER TO MAINTAIN A CONSISTENT QUALITY CONTROL REFERENCE FOR THE APPLICATOR AND TO PROVIDE VERIFICATION OF COVERAGE.
 - 4. WHERE MULTIPLE COAT INTERIOR SYSTEMS ARE SPECIFIED, THERE SHALL BE A COLOR CHANGE BETWEEN COATS. THIS COLOR CHANGE SHALL BE WITH PRODUCTS THAT FULLY COMPLY WITH NSF AND UL GUIDELINES.
- B. Finish Quality:
 - 1. Finishes shall exhibit a high quality, commercial grade appearance of uniform thickness.
 - 2. Finishes shall be free of runs, sags, drips, waves, orange peel, festoons, dry spray, cloudiness, spotting, ropiness, brush marks, roller marks, fish eyes or other surface imperfections, voids, discontinuities, pinholes, holidays and overspray.
 - 3. Final coat shall be uniform in texture, color and gloss, and shall provide an acceptable match with the approved drawdown sample sheet.

2.2 COATINGS

- A. Manufacturer
 - 1. PPG Porter
 - 2. Sherwin-Williams
 - 3. Or approved equal. Substitutions – Section 01 00 00
- B. Colors: As selected from a full range of manufacturer's offerings, including premium colors.

2.3 EXTERIOR COATINGS

- A. Flexible Deck Concrete Waterproofer Textured: Conflex Flexible Concrete Waterproofer Textured: CF15W0053, no substitutions.
 - 1. Acrylic resin and mineral aggregate.
 - 2. VOC: maximum 0.42 lb/gal
 - 3. Volume solids: 51% +/- 2%

- B. Concrete Deck Sealer: H&C Clarishield Water-Based Wet Look Concrete Sealer: no substitutions.
 - 1. 100% Acrylic Sealer.
 - 2. VOC: maximum 98 g/L
 - 3. Volume solids: 29.9% +/- 2%
- C. Exterior Alkyd Wood Primer: PPG Porter SPEEDY PRIME Exterior Alkyd Wood Primer, 74130, or equal.
 - 1. Alkyd based wood primer
 - 2. VOC: maximum 2.90 lb/gal
 - 3. Volume solids: 55% +/- 2%
- D. Exterior Latex Paint: PPG Porter Permanizer Satin Exterior Acrylic Coating 769, or equal.
 - 1. Acrylic based exterior gloss finish top coat
 - 2. VOC: maximum 0.95 lb/gal
 - 3. Volume solids: 40 +/- 2%
- E. Acrylic Primer: PPG Porter PORTER GUARD DTM Acrylic Primer/Finish 212/215, or equal.
 - 1. Acrylic emulsion waterborne, corrosion resistant coating
 - 2. VOC: maximum 1.13 lb/gal
 - 3. Volume solids: 43 +/- 2%
- F. Acrylic Coating: PPG Porter PORTER GUARD DTM Acrylic Satin Enamel 2809, or equal.
 - 1. Acrylic emulsion finish topcoat
 - 2. VOC: maximum 0.71 lb/gal
 - 3. Volume solids: 39 +/- 2%
- G. Acrylic Coating: PPG Porter PORTER GUARD DTM Acrylic Gloss Enamel 2909, or equal.
 - 1. Acrylic emulsion finish topcoat
 - 2. VOC: maximum 0.87 lb/gal
 - 3. Volume solids: 37 +/- 2%
- H. Epoxy Primer: PPG Fast Dry Epoxy Primer 94-109 or equal.
 - 1. Rust inhibitive high build catalyzed polyamide/bisphenol A epoxy primer.
 - 2. VOC: Unreduced 2.80 lb/gal
 - 3. Volume solids: 61% +/- 2%
- I. Acrylic polyurethane: PPG Pitthane Ultra Urethane Enamel 95-812 Series or equal.
 - 1. VOC compliant, polyester modified acrylic polyurethane.
 - 2. VOC: Unreduced 2.06 lb/gal
 - 3. Volume solids: 70.4% +/- 2%
- J. Elastomeric Coating: Sherwin Williams Loxon XP
 - 1. VOC compliant
 - 2. VOC: Unreduced <0.42 lb/gal
 - 3. Volume solids: 46% +/- 2%

2.4 PRE-CLEANING AND SURFACE PREPARATION PRODUCTS

- A. Pre-cleaning Agents
 - 1. Great Lakes Laboratories, Product 899, Extra Muscle Prepaint Cleaner
 - 2. Great Lakes Laboratories, Product 899, No Rinse Cleaner
 - 3. Simple Green Concentrate Solution

4. Krud Kutter
 5. Sherwin Williams, Prep Wash
 6. Sherwin Williams, M1 Paint Deglosser
 7. Or approved equal
 8. Potable water
- B. Pre-cleaning (Power Wash) Equipment
1. Capacity to continuously deliver 3-5 gpm at 2,500 psig of 180-200 degree F hot water.
 2. Cleaning system shall affect the 32-ounce per gallon dilution.
 3. Manufacturer: Alkota, Model 565T with model 520 water heater or approved equal.
 4. Power wash with 15 degree tip capable of delivering hot water at 2500 psig.
- C. Power Tool Surface Preparation Media:
1. Scotch Brite No. 07451 by 3 M Corporation, Surface Conditioning disc.
 - a. Properties
 - b. Texture: A Medium
 - c. Maximum Speed: 18,000 RPM
 2. Clean 'N' Strip Disco No CSD2 by 3 M Corporation
 - a. Texture: Course
 - b. Maximum Speed: 8,000 RPM
 - c. Or approved equal.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

- A. Comply with paint manufacturer's written instructions for surface preparation, environmental and substrate conditions, product mixing, and application.
- B. Perform all surface preparation in accordance with SSPC specifications, guidelines and good painting practices.
- C. Exterior and miscellaneous ferrous metals– SSPC SP-1.
- D. Remove all loose and peeling paint by power tool cleaning, hand tool cleaning and power washing per ASTM-D4259.
- E. Pressure wash at 2500 psi w/ 15-degree tip. Operator to avoid damage to wood or other substrates.
- F. Remove all dirt, grease, oil and other foreign material by 180-200 degree F hot water pressure cleaning with chemical injection of an emulsifying cleaner, Great Lakes No Rinse Cleaner at 32 oz. per gallon or equal.
- G. Remove any residual peeling paint using hand tools.
- H. Seal all stains from water, smoke, ink, pencil, grease, etc. with PRO-MASTER 2000 Interior Latex Primer or equal.
- I. Spot prime knotholes and sap streaks.

- J. Remove all mildew before painting with a solution of 1 part liquid bleach to 3 parts water, X14 or equal. Apply solution and scrub mildew area. Allow solution to remain on for 10 minutes. Rinse thoroughly and allow surface to dry before painting.
- K. Remove all dirt, grease, oil and other foreign material from aluminum by solvent cleaning, SSPC-SP1. Do not use hydrocarbon solvents for cleaning.
- L. Remove all rust and mill scale using sandpaper, steel wool or other abrading method. Sand all glossy surfaces dull, SSPC-SP2.
- M. Patch all holes and imperfections with a metal filler and sand smooth.
- N. Fill all cracks, voids and crevices with caulk after priming the surface.
- O. Do not paint until surface is thoroughly dry and in sound condition

3.2 APPLICATION

- A. Examination and Verification of Condition: Contractor shall verify the areas and conditions under which the work is to be performed and notify the Owner in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until satisfactory conditions have been corrected. Do not coat over chalk, dirt, scale, moisture, oil, surface contaminants, coatings that have exceeded the manufacturer's re-coat guidelines, or conditions otherwise detrimental to the formation of a durable high quality coating system.
- B. Comply with manufacturer's instructions and SSPC Good Paint Practices Volumes 1 and 2.
- C. Comply with OSHA regulations, City of Dayton, State of Ohio and Federal laws, ordinances, and guidelines.
- D. Coating systems require a minimum surface temperature of 77 degrees F at 50% RH for proper drying and curing with a minimum temperature of 50 degrees and a maximum relative humidity of 85%. Follow label directions for each type of coating. Substrate temperatures to be coated shall be a minimum of 5 degree F above dew point and rising. Ambient surface to be painted and coating materials shall be a minimum maintained temperature of 50 degree F for 24 hours.
- E. Refer to MSDS sheets before using any product.
- F. All surfaces must be thoroughly dry before coating applications.
- G. Apply coatings using brush or roller only.
- H. Labor and materials shall be guaranteed for five years against disbondment, fading that results in non-uniform finish color and chalking.
- I. Contractor shall verify that their company and journeymen assigned to this project have five years experience in commercial coating operations.
- J. Protect surfaces not to be coated including adjacent property and vehicles and tenant's personal property.
- K. Apply topcoat over oil wood primer within 14 days of application.

3.3 EXTERIOR PAINT APPLICATION SCHEDULE

- A. Wood frames and trim: As follows:
 - 1. Wood Alkyd Primer: PPG Porter SPEEDY PRIME Exterior Alkyd Wood Primer, 74130 at 2.3 MILS DFT per coat, one coat
 - 2. Exterior Latex Coating: PPG Porter Permanizer Satin Exterior Acrylic Coating 769 at 2.0-4.0 MILS DFT per coat- two coats.
- B. Miscellaneous metals with gloss finish as follows:
 - 1. Epoxy Primer: PPG Fast Dry Epoxy Primer 94-109 Series 4.0-6.0 MILS DFT per coat, one coat.
 - 2. Acrylic Polyurethane Coating: "Porter PP2909 PORTER GUARD DTM Acrylic Gloss Enamel, at 3.0-6.0 MILS DFT per coat- two coats.
- C. Miscellaneous metals with satin finish as follows:
 - 1. Flat Acrylic Primer: PPG Porter PORTER GUARD DTM Acrylic Primer/Finish 212/215 at 2.5 MILS DFT per coat, one coat.
 - 2. Semi-Gloss, Acrylic Coating: PPG Porter PORTER GUARD DTM Acrylic Satin Enamel 2809 at 1.5 to 4 MILS DFT per coat, two coats.
- D. Concrete Walls as follows:
 - 1. High Build Elastomeric Coating: SW Loxon XP Waterproofing System A24-1400 Series at 6.4 to 8.3 MILS DFT per coat, two coats.
- E. Concrete Deck Slabs as follows:
 - 1. Concrete Deck Paint: SW Flexible Deck Concrete Waterproofer Textured at 5.1 to 6.1 MILS DFT per coat, two coats.
 - 2. Clear Concrete Sealer: H&C Clarishield Water-Based Wet Look Concrete Sealer, two coats.
 - 3. H&C SharkGrip Slip Resistent Additive to be applied to final coat of Clear Concrete Sealer.
- F. Aluminum: As follows:
 - 1. Flat Acrylic Primer: PPG Porter PORTER GUARD DTM Acrylic Primer/Finish 212/215 at 2.5 MILS DFT per coat, one coat.
 - 2. Semi-Gloss, Acrylic Coating: PPG Porter PORTER GUARD DTM Acrylic Satin Enamel 2809 at 1.5 to 4 MILS DFT per coat, two coats.

3.4 CLEAN UP

- A. Clean site and remove debris and empty cans daily. Remove all paint from adjacent surfaces. Clean spills and splatters immediately.
- B. Clean hands and tools immediately after use with soap and water for water based products and with mineral spirits for oil based products.
- C. Follow manufacturer's safety recommendations when using mineral spirits.

3.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: Submit maintenance and cleaning instructions.

3.6 ENVIRONMENTAL REQUIREMENTS

- A. Store and apply materials in environmental conditions required by manufacturer's instructions.

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Removing surface debris, paving and walks indicated.
 - 2. Removing designated plant life.

1.2 SUBMITTALS

- A. Product Data: Submit data for herbicide.

PART 2 PRODUCTS

2.1 SITE CLEARING

- A. Herbicide: Type approved by authority having jurisdiction.

PART 3 EXECUTION

3.1 PREPARATION

- A. Call Local Utility Line Information service at not less than three working days before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.

3.2 PROTECTION

- A. Locate, identify, and protect utilities indicated to remain, from damage.
- B. Protect trees, plant growth, and features designated to remain, as final landscaping.
- C. Protect bench marks, survey control points, and existing structures from damage or displacement.
- D. Contractor shall implement EPA's Best Management Practices for erosion and sedimentation control during construction. Contractor shall refer to the EPA document "Storm Water Management for Construction Activities".

3.3 CLEARING

- A. Clear areas required for execution of Work to minimum depth of 6 inches.

- B. Remove trees and shrubs indicated. Remove stumps, main root ball and root system and uncovered organic fill.
- C. Apply herbicide to remaining stumps or plant life to inhibit growth.

3.4 CLEAN UP

- A. Remove debris, rock and extracted plant life from site.

END OF SECTION