

PROJECT MANUAL

**SUGAR GROVE
BALCONY & FAÇADE IMPROVEMENTS**

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**CONSTRUCTION DOCUMENTS
MAY 30, 2018**

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SECTION 00 43 25A

SUBSTITUTION PROCEDURES

1.01 GENERAL

- A. This Section applies to substitute products and procedures requested by the Bidder to be added during the Bid period.
 - 1. Substitutions included with the Bid that have not been approved under this Section must be listed on the Substitution Sheet included with the Form of Proposal.
- B. Requirements of this Section are in addition to the requirements of Instructions to Bidders, General Conditions and Supplementary Conditions.
- C. Requirements of this Section are part of the requirements specified in Section 00 43 25B - Substitution Request Form.

1.02 LIMITATIONS ON SUBSTITUTIONS

- A. Substitutions will NOT be considered unless Section 00 43 25B - Substitution Request Form attached in this Project Manual is used and the requirements of this Section and the Substitution Request Form are fully complied with.
 - 1. Other types of forms are NOT acceptable.
- B. Substitutions will NOT be considered when requested directly by subcontractor or supplier.
- C. Architect will determine the acceptability of all substitutions.

1.03 REQUEST FOR SUBSTITUTIONS

- A. Bidder's Representation
 - 1. Request for substitution constitutes a representation that the Bidder has investigated the proposed product and has determined that it is equal to or superior in all respects to the specified product.
 - 2. Request for substitution constitutes a representation that the Bidder will provide same type of warranty for substitution as for specified product.
 - 3. Request for substitution constitutes a representation that the Bidder will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
 - 4. Request for substitution constitutes a representation that the Bidder waives all claims for additional costs related to substitutions which consequently become apparent.

5. Request for substitution constitutes a representation that the cost data is complete and includes all related cost under his Contract.
 6. Request for substitution constitutes a representation that the Bidder has thoroughly investigated the proposed substitute to determine if license fees and royalties are pending on the proposed substitute.
- B. Request for substitutions shall be submitted on Section 00 43 25B - Substitution Request Form attached in this Project Manual. Legible copies of this form shall be made as required for Bidder's submittals. Each submittal request form shall be complete with data substantiating compliance of proposed substitution with requirements of Contract Documents including the following information:
1. Project title and Architect's project number.
 2. Identification of product specified including specification section and paragraph number.
 3. Identification of proposed substitute complete with manufacturer's name and address, trade name of product, model or catalog number and product data.
 4. List of fabricator and supplier (with address and phone number) for proposed substitute.
 5. The affect of substitution on dimensions, material thickness, wiring, piping, ductwork, etc. indicated in Contract Documents.
 6. The affect of substitution on other trades.
 7. The affect of substitution on construction schedule.
 8. Differences in quality and performance between specified product and proposed product.
 9. Comparison of manufacturer's guarantees of specified product and proposed substitute.
 10. Availability of maintenance services and replacement materials for proposed substitute.
 11. License fees and/or royalties pending on proposed substitute.

1.04 SUBMITTAL PROCEDURES

- A. Submit a separate Section 00 43 25B - Substitution Request Form for each substitution.
1. Form shall be completely and properly filled in. If form is incomplete, the Architect reserves the right to reject and return form to Bidder for completion and compliance with this section and Form 00 43 25B.
 2. Submit to Architect two copies of the completed and signed form.
- B. Requests for substitutions of products will be considered no later than ten (10) days prior to Bid Opening Date to allow time for Architect's evaluation of substitutions and the preparation of an addendum, if required.

- C. Architect will issue the Addendum to all Bidders to notify them of the Architect's decision to accept the requested substitution.

END OF SECTION

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SECTION 00 43 25B

SUBSTITUTION REQUEST FORM

GENERAL: This form is part of the substitution requirements specified in Section 00 43 25A.

PROJECT TITLE & NO. _____

TO:MOODY NOLAN INC.
300 Spruce Street, Suite 300
Columbus, Ohio 43215
Telephone (614) 461-4664 FAX (614) 280-8881
Contact and Email: [\[add contact name and email address\]](#)

ATTN: _____

SPECIFIED ITEM _____
Section _____ Paragraph _____

PROPOSED SUBSTITUTE _____

Attach complete description, catalog, spec data, and laboratory tests if applicable

1. What effect will substitution have on dimensions, gauges, weights, etc. indicated in Contract Documents?

2. What effect will substitution have on wiring, piping, ductwork, etc. indicated in Contract Documents?

3. What effect will substitution have on other trades? _____

4. What effect will substitution have on construction schedule? _____

5. What are the differences in quality and performance between proposed substitute and specified product? _____

6. Manufacturer's guarantees of the specified products and proposed products are:
 Same: _____ Different (Explain) _____

7. List (on separate sheet), if applicable, the availability of maintenance services and replacement materials for proposed substitute.
8. List (on separate sheet) names, addresses and phone numbers of fabricators and suppliers for proposed substitutes.
9. There [are ___] [are no ___] license fees and royalties pending on the proposed substitute. (Explain)

11. The undersigned certifies that this substitution meets all requirements of the Contract Documents except as specifically noted herein.

SUBMITTED TO BIDDER BY: (Supplier/Fabricator)

Firm _____

Address _____

Name and Title of Person Signing _____

Signature _____

Telephone No. _____ Date _____

SUBMITTED TO ARCHITECT BY: (Bidder)

Firm _____

Address _____

Name and Title of Person Signing _____

Signature _____

Telephone No. _____ Date _____

FAX No. _____ Email _____

12. ARCHITECT/ENGINEER'S REVIEW COMMENTS:

Tentatively Accepted
(pending issuance of
Addendum)

Rejected due to
incomplete form.

Not Accepted

Received Too Late

Signature _____

Date _____

Remarks _____

END OF SECTION

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SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Administrative and supervisory personnel.
 - 2. Requests for Interpretation (RFIs).
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.

1.02 RELATED SECTIONS

- A. Project Meetings: Section 01 31 19.

1.03 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.03 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

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

1.04 SUBMITTALS

- A. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.05 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

1.06 REQUESTS FOR INTERPRETATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Hard-Copy RFIs: Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow 15 days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for approval of Contractor's means and methods.
 - d. Requests for coordination information already indicated in the Contract Documents.

- e. Requests for adjustments in the Contract Time or the Contract Sum.
 - f. Requests for interpretation of Architect's actions on submittals.
 - g. Incomplete RFIs or RFIs with numerous errors.
2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within 7 days if Contractor disagrees with response.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 19
PROJECT MEETINGS

PART 1 GENERAL

1.01 SCOPE

- A. This section specifies administrative and procedural requirements for project meetings including:
 - 1. Pre-Construction Meeting.
 - 2. Progress Meetings.
 - 3. Specially called meetings.

1.02 RELATED SECTIONS

- A. Project Management and Coordination: Section 01 31 00.

1.03 DESCRIPTION

- A. Schedule and administer preconstruction meeting, progress meetings and specially called meetings throughout the progress of the work.
 - 1. Prepare agenda for meetings.
 - 2. Preside at meetings.
 - 3. Record the minutes; include all significant proceedings and decisions.
 - 4. Reproduce and distribute copies of minutes.
 - a. To all participants in the meeting.
 - b. To all parties affected by decisions made at the meeting.
- B. Make physical arrangements for meetings.
- C. Representatives of the Contractors, subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.04 PRE-CONSTRUCTION MEETING

- A. Scheduled within 15 days after date of Notice to Proceed.
- B. Location: A central site, convenient for all parties, designated by Architect.
- C. Attendance
 - 1. Owner's Representative
 - 2. Architect and Consultants

- 3. Major Subcontractors
 - 4. Major Suppliers
- D. Agenda: Discuss items of significance that could affect progress, including the following:
- 1. Tentative construction schedule.
 - 3. Critical work sequencing and long-lead items.
 - 4. Designation of key personnel and their duties.
 - 5. Lines of communications.
 - 5. Procedures for processing field decisions and Change Orders.
 - 6. Procedures for RFIs.
 - 7. Procedures for testing and inspecting.
 - 8. Procedures for processing Applications for Payment.
 - 9. Distribution of the Contract Documents.
 - 10. Submittal procedures.
 - 11. Preparation of Record Documents.
 - 12. Use of the premises.
 - 13. Work restrictions.
 - 14. Working hours.
 - 15. Responsibility for temporary facilities and controls.
 - 16. Procedures for moisture and mold control.
 - 17. Procedures for disruptions and shutdowns.
 - 18. Construction waste management and recycling.
 - 19. Parking availability and restrictions.
 - 20. Office, work, and storage areas.
 - 21. Equipment deliveries and priorities.
 - 22. First aid.
 - 23. Security.
 - 24. Progress cleaning.
 - 25. Owner's occupancy requirements.
 - 26. Phasing.

1.05 PROGRESS MEETINGS

- A. Schedule regular periodic meetings, as required.
- B. Hold called meetings as required by progress of work.
- C. Location of the Meetings: Project field office of the General Contractor.
- D. Attendance
 - 1. Architect and consultants as needed.
 - 2. Prime Contractors.
 - 3. Subcontractors as appropriate to the agenda.
 - 4. Suppliers as appropriate to the agenda.
 - 5. Owner's Representative
- E. Suggested Agenda

1. Review, approval of minutes of previous meeting.
2. Review of work progress since previous meeting.
3. Field observations, problems, conflicts.
4. Problems which impede Construction Schedule.
5. Review of off-site fabrication, delivery schedules.
6. Corrective measures and procedures to regain projected schedule.
7. Revisions to Construction Schedule.
8. Plan progress, schedule, during succeeding work period.
9. Coordination of schedules.
10. Review submittal schedules; expedite as required.
11. Maintenance of quality standards.
12. Review proposed changes for:
 - a. Effect on Construction Schedule and on completion date.
 - b. Effect on other contracts of the project.
13. Status of RFIs.
14. Status of proposal requests.
15. Pending changes.
16. Status of Change Orders.
17. Pending claims and disputes.
18. Documentation of information for payment requests.

END OF SECTION

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SECTION 01 32 16

CONSTRUCTION SCHEDULES

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. These requirements generally describe the form of the construction schedule, a basic description of the schedule contents and the submittal procedures. Refer to General Conditions for additional requirements regarding the Contractor's necessity to maintain the approved construction schedule and the project completion.
- B. Authorization to proceed with the work will not be given until the construction schedule has been approved by the Architect.
- C. General Contractor: Provide a coordinated project construction schedule for the entire work.

1.02 FORM OF SCHEDULES

- A. Prepare schedules in the form of a time-scaled logic diagram, defined as a network logic diagram with connecting lines specifically identifying relationships between all activities of the work using the "Critical Path Method".
 - 1. Diagram may be machine plotted or hand drafted showing the activities duration time-scaled to the appropriate calendar in an easily readable format as approved by Architect. Base schedule on the early start early finish dates of the activities. All relationships between activities must be clearly noted including associated lag times, if required. The diagram must also have the critical path (the series of activities with the least value of total float) clearly marked. In addition, the Contractor must provide a tabular report indicating the early start, early finish, late start, late finish, and total float for every activity in the schedule.

1.03 CONTENT OF SCHEDULES

- A. Quantity of Activities: Defined by complexity of the project. An adequate number of activities are to be included in the project in order that sufficient detail of the demolition process (and resulting temporary construction) and weekly progress requirements are clearly stated.
- B. Where applicable, progress schedule must also include a shop drawing schedule with the activities "Prepare Shop Drawings", "Architect Review and Approval", and "Fabricate and Deliver to the Jobsite". This sequential series of activities must be assigned to each item on the project which requires a shop drawing or

performance data submittal prior to its installation. The shop drawing schedule shall be tied directly to the progress schedule, but shall be provided to the Architect as a separate time-scaled logic diagram.

1.04 PROGRESS REVISIONS

- A. Update schedule and submit in the above format each month with pay requests. Progress completion shall be defined as the remaining duration of any activity which started on or before the schedule update. In addition, revise the duration of all activities as more accurate scheduling information becomes available.
 - 1. Indicate progress of each activity to date of submission.
 - 2. Show changes occurring since previous submission of schedule:
 - a. Major changes in scope.
 - b. Activities modified since previous submission.
 - c. Revised projections of progress and completion.
 - d. Other identifiable changes.
- B. Provide a narrative report as needed to define:
 - 1. Problem areas, anticipated delays, and the schedule.
 - 2. Corrective action recommended, and its effect.

1.05 SUBMITTALS

- A. Submit initial schedules within 15 days after award of Contract.
 - 1. Architect will review schedules and return review copy within 10 days after receipt.
 - 2. If required, resubmit within 7 days after return of review copy.
- B. Submit revised progress schedules with each application for payment.
- C. Submit four opaque copies of initial schedule, large enough to show entire schedule for entire construction period.
 - 1. Submit an electronic copy of schedule, using software indicated, in .pdf format. Include type of schedule (Initial or Updated) and date on label.

1.06 DISTRIBUTION

- A. Distribute copies of the reviewed schedules to:
 - 1. Job site file.
 - 2. Subcontractors.
 - 3. Owner.
 - 4. Architect.
 - 5. Other concerned parties.

END OF SECTION

SECTION 01 33 23

SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

PART 1 GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1.02 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.03 GENERAL REQUIREMENTS

- A. Requirements of this Section are in addition to the requirements of the General Conditions.
- B. This Section includes procedures for processing:
 - 1. Shop drawings.
 - 2. Product data.
 - 3. Samples.
 - 4. Certificates of compliance.
 - 5. Reports.
 - 6. Schedules.
 - 7. Design data.
 - 8. Other submittals listed.
- C. Submittals as approved do not constitute a change order.
- D. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

- a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- E. Submittals Schedule: See Section 01 32 16, Construction Schedules, for list of submittals and time requirements for scheduled performance of related construction activities.
 1. Submittals received prior to receipt of the initial Submittals Schedule will be rejected.
 2. Submittals received prior to the time they are indicated on the Submittal Schedule to be submitted will be rejected.
- F. Make all submittals far enough in advance of scheduled dates for installation to provide sufficient time for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.
 1. Delays caused by the tardiness of the Contractor in preparing and forwarding submittals will not be an acceptable basis for an extension of the Contract completion date or for consideration of alternate products which do not meet the specified requirements of this Project Manual.
 2. Initial Review: Allow 14 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 3. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 4. Resubmittal Review: Allow 14 days for review of each resubmittal.
 5. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is necessary, allow 14 days for initial review of each submittal.
 6. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 14 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.
- G. Identification: Place a permanent label or title block on each submittal for identification.
 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.

- f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
- H. Notify Architect in writing at time of submittal of deviations from the requirements of the Contract Documents. In addition, highlight, encircle, or otherwise specifically identify deviations.
- I. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
- 1. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination (To:).
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Specification Section number and title.
 - i. Drawing number and detail references, as appropriate.
 - j. Submittal and transmittal distribution record.
 - k. Remarks.
 - l. Signature of transmitter.
 - 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- J. Resubmittals: When Architect requires that a submittal be resubmitted, comply with requirements of this section.
- 1. Identify changes made since the previous submittal.
- K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- L. Electronic Files: At Contractor's written request, copies of Architect's electronic files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:

1. Execute Electronic File Transfer Agreement provided by the Architect to obtain files.
2. The electronic files are provided for the Contractor's convenience and their use will be at the Contractors risk.
 - a. There are no assurances that the information in the electronic files is current. All dimensions must be field-verified.

1.04 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data
 1. Submit only pages which are pertinent.
 - a. Mark each copy of standard printed data to identify pertinent products, referenced to Specification Section and Article number.
 - b. Show reference standards, performance characteristics, and capacities; wiring and piping diagrams and controls; component parts; finishes; dimensions; and required clearances.
 2. Modify manufacturer's standard schematic drawings and diagrams to supplement standard information and to provide information specifically applicable to the work. Delete information not applicable.
 3. Stamp and sign each set of manufacturer's product data before submitting to Architect to certify compliance with Contract Documents.
 4. Number of Copies Required: Submit two paper copies of Product Data, and in portable data file (.pdf) format, unless otherwise indicated. When submitting for Concurrent Consultant Review, submit two copies to Consultant and one copy to Architect. Architect will return one copy. Mark up and retain returned copy as a Project Record Document.
 - a. Reproduction and cost of reproduction of processed Product Data for distribution to concerned parties is Contractor's responsibility.
- C. Shop Drawings
 1. Reproduction of any portion of the Contract Documents for use as submittals for Shop Drawings is not acceptable.
 2. Submit Shop Drawings in a clear and thorough manner.
 - a. Title each drawing with Project name.
 - b. Identify each element of drawings by reference to sheet number and detail, schedule, or room number of Contract Documents.
 3. Identify the following:
 - a. Requirements of the individual section of Project Manual.
 - b. Field measurements.
 - c. Field construction criteria.
 - d. Relation to adjacent or critical features of the Work or products.
 - e. Conformance of submittal with requirements of Contract Documents.

4. Each sheet of Shop Drawings shall be stamped and signed by Contractor before submitting to Architect. Certify compliance with requirements of Contract Documents.
 5. Review by the Architect shall not relieve Contractor from his responsibility in preparing and submitting proper Shop Drawings in accordance with his current obligations.
 6. All submissions which, in the opinion of the Architect are incomplete, contain errors or have not been checked or only superficially checked, will be returned unchecked by the Architect for resubmission.
 7. Fabrication of products or start of work before required Shop Drawings are approved by Architect and returned to Contractor shall be at Contractor's risk.
 8. Number of Copies Required: Submit two paper copies of each submittal, and in portable data file (.pdf) format, unless indicated otherwise. When submitting for Concurrent Consultant Review, submit two copies to Consultant and one copy to Architect. Architect will return one copy. Mark up and retain one returned copy as a Project Record Drawing.
 - a. Reproduction and cost of reproduction of processed Shop Drawings for distribution to concerned parties is Contractor's responsibility.
 - b. This procedure is to be followed for each submission of a drawing or group of drawings until they are finally approved by the Architect.
- D. Office Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of appropriate Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 4. Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified,

and physically identical with material or product proposed for use, and that show full range of color and texture variations expected.

Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples Required: Submit two sets of Samples. Architect will retain one Sample set; the other will be returned.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least two sets of paired units that show approximate limits of variations.

E. Mock-Up Samples: Where samples are specified in the individual specification sections for use in constructing mock-ups, comply with requirements for "Office Samples", and process transmittal forms for mock-ups to provide a record of activity.

F. Submittals Schedule: See Section 01 32 16, Construction Schedules.

G. Schedule of Values and Application for Payment: See Section 01 29 00, Payment Procedures.

1.05 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit one copy of each submittal, unless otherwise indicated. Architect will not return copy.

2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

3. Test and Inspection Reports: See Section 01 45 29, Testing Laboratory services.

B. Coordination Drawings: See Section 01 31 21, Coordination Drawings.

C. Contractor's Construction Schedule: See Section 01 32 16, Construction Schedules.

D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project

names and addresses, names and addresses of architects and owners, and other information specified.

- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

- N. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- O. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- P. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. See Section 01 78 23, Operation and Maintenance Data.
- Q. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- R. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- S. Manufacturer's Field Reports: Prepare written information documenting factory authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.

- T. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- U. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect, except as required in "Action Submittals" Article. Retain copies at jobsite.

1.06 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit two copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional. When submitting for Concurrent Consultant Review, submit two copies to Consultant and one copy to Architect.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 2 PRODUCTS

Not Applicable

PART 3 EXECUTION

3.01 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

3.02 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Reference the General

Conditions for Architect's review responsibilities. Approval of a specific item does not indicate approval of an assembly of which the item is a component. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. REVIEWED
 2. APPROVED
 3. APPROVED AS CORRECTED
 4. REVISE AND RESUBMIT
 4. REJECTED.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION

SECTION 01 35 13

SPECIAL PROJECT PROCEDURES

PART 1 GENERAL

1.01 SUMMARY

- A. All construction is to occur in unoccupied **empty** units. Tenants will be permanently relocated from the units in a multi-phased path during the duration of construction. Tenants' furniture & belongings will be moved prior to work in any unit. Contractor is responsible for phasing construction in coordination with owner. All units are to be made "rent ready" at the end of construction."

1.02 PROCEDURES IN OPERATIONAL BUILDING

A. Occupancy of Building

1. The existing building complex will be occupied throughout the entire course of construction. As such, contractors and their personnel are restricted to assigned construction areas of the building only.
2. Access to areas within the work area of the project which must occur through occupied areas or over occupied areas must be coordinated with the Owner's Representative and the Architect so as to allow spaces to be vacated in time for the work to be accomplished, approximately 48 hours advance notice is required.
 - a. Where the Owner vacates to allow work in an area, services and utilities may be cut as long as the continuity of that service does not affect other areas. Access must be maintained to all other areas in a safe and sanitary manner.
 - b. Perform work with cooperation and consideration toward occupants and caution toward existing finishes. Clean-up of work areas in occupied spaces shall be performed at the end of each work day. Debris will not be permitted to accumulate.
3. Operations which are particularly noisy or hazardous to building occupants must be scheduled during weekends or at night. Access to the building will be coordinated with the Owner's Representative and Architect who will generally allow work as required by the construction schedule throughout the normal work day, at night and on weekends as required.
 - a. The cost of work performed at times other than the "normal" working areas established for the project will be borne by the Contractor(s) involved. No additional payment will be due Contractors whose operations result in "premium" hour work.

- B. Conduct: Contractor and workmen under his/her control are to be quiet and non-offensive. Radios are prohibited.

- C. Dress Code
 - 1. Required Apparel: Shirt, long pants, shoes with laces; all suitably clean.
 - 2. Not Permitted: Offensive graphics or messages on clothing, short pants, tank tops, sandals, open toed shoes, bare torso, bare feet.
- D. Areas under construction shall be separated from occupied areas by suitable barriers. See Section 01 50 00 for additional requirements.
- E. No utilities or services may be interrupted without full consent of and prior scheduling with the Owner's representative. All functions of existing building must be maintained at all times unless specific written permission is obtained from the Owner. Critical functions include, but are not limited to:
 - 1. Exits
 - 2. Utilities

1.03 UTILITY SHUT-DOWN

- A. Advance notice required: Contractor to request, a minimum 14 days in advance, Owner's permission to shut down electric power, gases or systems to occupied portions of the building. Request to be in writing and indicate the area(s) affected, time and date shut-down requested to commence, and anticipated duration of shut-down. Approved time and date may not be as requested, will be at times least disruptive to Owner, and may be during non-normal working hours.
 - 1. Disclaimer: No additional payments will be allowed due to Contractor's difficulties due to being held to the above restrictions.

1.04 NOISE AND SAFETY

- A. Prohibited Methods: Prohibited methods and materials include, but are not limited to, the following:
 - 1. Use of explosives.
 - 2. Use of jack hammers or similar equipment which can cause structure-borne vibration detrimental to the use of the occupied facilities.
- B. Construction noise limited to Normal Working Hours.

1.05 EXISTING FACILITIES

- A. Do not use existing telephone, vending machines, cafeteria, or other facilities.

1.06 NO SMOKING POLICY

- A. Smoking inside buildings is not permitted.

1.07 SITE AND BUILDING ACCESS

- A. Existing driveways and entrances which serve the premises must be maintained. They must be available to the Owner and public at all times. Do not use these areas for parking or storage of materials.
1. Do not unreasonably encumber the site with materials or equipment. Confine stock piling of materials and location of storage trailers to the areas indicated on the drawings or as directed by the Architect.
 2. Architect will administer available space equitably among other prime contractors.
 3. Schedule deliveries so as to minimize space and time requirements for storage of materials and equipment on the site.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 PROJECT CONDITIONS

- A. This Section is not intended to limit types and amounts of temporary construction facilities and controls required. Omission from this Section will not be accepted as an application that such temporary activity is not required for successful completion of the work and compliance with requirements of the Contract Documents.
- B. Provide and maintain each temporary construction facility and control when required for proper performance of the work. Terminate and remove when no longer needed or when permanent facilities, with proper authorization, are available for use.
- C. Obtain and pay for all required applications, fees, permits and inspections required for temporary construction facilities and controls.
- D. Install, operate, maintain and protect temporary construction facilities and controls in a manner and at locations which are safe, non-hazardous, sanitary and adequately protect project work, workmen and the public.

1.02 COST OF CONSUMED UTILITIES

- A. Water Service Use Charges: Water consumed during construction from the Owner's existing system is to be used without metering and without payment of use charges.
- B. Electric Power Service Use Charge: Electric power consumed during construction from the Owner's existing system is to be used without metering and without payment of use charges.

1.03 REQUIREMENTS OF REGULATORY AGENCIES

- A. Provide and maintain all temporary facilities in compliance with governing rules, regulations, codes, ordinances and laws of agencies and utility companies having jurisdiction over work involved in project.
- B. Be responsible for all temporary work provided, and obtain any necessary permits and inspections for such work.
- C. Contractors shall confine equipment, storage of materials, and operation of workmen to the limits indicated or directed and shall abide by law, ordinances, conditions stated in permits and directions of the Architect.

- D. Do not interfere with normal use of roads in vicinity of project site except as indicated or as absolutely necessary to execute required work, and then only after proper arrangements have been made with authorities having jurisdiction, including traffic control as applicable.

1.04 SPECIAL PRECAUTIONS AND REQUIREMENTS

- A. Do not interfere with normal use of occupied areas in existing buildings, existing driveway access to existing building and existing building utility services, except as absolutely necessary to execute required work involving such facilities, and then only after proper arrangements have been made through the Owner with persons in charge of existing facilities.
- B. Do not block required exits from existing buildings.

1.05 TEMPORARY FIELD OFFICES, TRAILERS AND TELEPHONE

- A. General: Provide and maintain clean field office area for his use, his Subcontractor's Agents and the Architect, at which location he/she or his/her authorized agent shall be present, or to which either may be readily called at all times while the work is in progress. Located where directed by the Architect.
- B. Copies of permits, approved shop drawings, plans and specifications marked up-to-date with all revisions and all addenda shall be kept at said offices areas ready for use at all times.
- C. All expenses in connection with Contractor's field offices, including the installation cost and use of telephones, shall be borne by the Contractor.
- D. Maintain field office areas until final acceptance and then remove, unless the Architect orders or approves earlier removal.
- E. Pay all costs, including utility installation costs to the field office.
- F. Provide and maintain such additional storage trailers on the project as required. Located where directed by the Architect.
- G. Contractor may be required to relocate their offices, as directed by Architect, during construction as work progresses.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide temporary portable toilets, acceptable to public health authorities, as required to service the project. Maintain in a clean, sanitary condition. Locate as directed by Architect.

1.07 TEMPORARY LIGHT AND POWER

- A. Provide necessary temporary electrical service and temporary wiring and outlets as required to meet project needs for temporary lighting and power at the start of the project, as work progresses and until acceptance by the Owner, excluding power to individual contractor's trailers.
- 1.08 CONSTRUCTION AIDS
- A. Shoring and Bracing: Provide all shoring and bracing required for safety and proper execution of their work. Remove these items when the work is completed.
- 1.09 WATCHMAN SERVICE
- A. If Contractor considers watchman services necessary or desirable for protection of his/her own interest, such services may be employed at his/her own complete expense.
- 1.10 SAFETY
- A. Safety requirements shall be in accordance with the General Conditions.
 - B. Provide and maintain guard lights at all barricades, railings, obstructions in the roadways or sidewalks and at all trenches or pits adjacent to walks or roadways.
 - C. Strict attention and full adherence must be given the Williams-Steiger Occupational Safety and Health Act of 1970, U.S. Department of Labor.
- 1.11 SECURITY CONDITIONS
- A. Security of building must be maintained during "non-standard" working hours (premium time). This includes, but is not necessarily limited to, verifying all entrance doors and windows are secured.
 - B. Contractor shall be responsible for all infractions of rules and regulations by his workers.
 - C. Loitering or wandering through not connected with the project or into other buildings on site will not be permitted.
- 1.12 DUST CONTROL
- A. Control dust originating within project limits using water or a dust palliative acceptable to the Architect. When conditions create blowing dust and dirt that is considered higher than that normally encountered, Contractor shall cooperate with Architect in determining methods to help minimize blowing. This may involve, as a minimum, more frequent applications of dust palliative. Calcium chloride may not be used.
- 1.13 PARKING

- A. Employees of Contractors and subcontractors must park vehicles in areas assigned to them. Parking on streets or in restricted areas is prohibited.

END OF SECTION

SECTION 01 60 00
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Requirements of this Section apply to the Work of all other Sections.
- B. Section Includes:
 - 1. Transportation and Handling.
 - 2. Storage and Protection.
 - 3. Standards.
 - 4. Manufacturers and Types.
 - 5. Fabrications.
 - 6. Shop Priming.
 - 7. Prohibited Materials and Methods.

1.02 RELATED SECTIONS

- A. Quality Requirements: Section 01 40 00.
- B. Cutting and Patching: Section 01 73 29.
- C. Shop Drawings, Product Data and Samples: Section 01 33 23.
- D. Execution Requirements: Section 01 73 00.

1.03 STANDARDS

- A. Standards, codes and regulations published by Manufacturer's Associations, governmental agencies and other regulatory authorities form a part of these Specifications as minimum requirements. Such references include the latest issue and all amendments up to 30 days prior to the Bid Date.
- B. "Governing Authority" means all federal, state and local laws and regulations.
- C. Where differences occur between the Contract Documents and such standards, the most restrictive requirement shall apply.
- D. Supply all materials and perform all work in accordance with the Manufacturer's Specifications and installation procedures, and in conformance with published trade and manufacturer's association standards, unless specifically noted otherwise herein.

1.04 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with construction schedules and installation, coordinate to avoid conflict with work and conditions at the site.
 - 1. Transport products by methods to avoid product damage.
 - 2. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
 - 3. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and accepted submittals, and that products are properly protected and undamaged.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.

1.05 DELIVERY, HANDLING, STORAGE AND PROTECTION

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. 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.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected. Reject damaged and defective items.
- B. Storage products in accordance with manufacturer's instructions.
 - 1. Store products with seals and labels intact and legible.
 - 2. Store products to allow for inspection and measurement of quantity or counting of units.
 - 3. Store products subject to damage by the elements in weathertight enclosures.
 - 4. Maintain temperature and humidity within the ranges required by manufacturer's instructions.
 - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
- C. Exterior Storage

1. Store fabricated products above the ground, on blocking or skids, to prevent soiling or staining. Cover products which are subject to deterioration with impervious coverings. Provide adequate ventilation to avoid condensation.
- D. Arrange storage in a manner to provide access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions, and free from damage.
- E. Protection After Installation: Provide coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove when no longer needed.

PART 2 PRODUCTS

2.01 GENERAL PRODUCT REQUIREMENTS

- A. Products include materials, equipment and systems.
- B. Products incorporated into the work:
 1. Comply with specifications and referenced standards as minimum requirements.
 2. Undamaged.
 2. Manufactured and fabricated products:
 - a. Design, fabricate and assemble in accordance with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
 - c. Two or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing by the Architect.
 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.
 5. New and unused at time of installation, except as otherwise indicated.
 6. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 7. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.

2.02 MANUFACTURER AND PRODUCT SELECTION PROCEDURES

- A. Specified Product: Where specifications name a single manufacturer and product or refer to a single manufacturer and product indicated on the drawings, provide the named product. Comparable products or substitutions for Contractor's convenience will not be considered.
- B. Specified Manufacturer: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
- C. Multiple Specified Products: Where more than one manufacturer and specific product is listed, provide one of the products named. No substitutions will be permitted after signing the contract. Comparable products or substitutions for Contractor's convenience will not be considered.
- D. Multiple Manufacturers: Where specifications include a list of manufacturers names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
- E. Basis of Design: Where specifications name a Basis of Design or refer to a Basis of Design product indicated on the drawings, the design is based on the product listed. Subject to compliance with requirements, provide the specified product or a product manufactured by one of the other manufacturers listed.
 - 1. The characteristics of the Basis-of-Design Product establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.
 - 2. Equipment or materials from these manufacturers will be acceptable contingent upon their meeting the design, appearance and functional standards established by the specified items. If equipment or a material of an acceptable manufacturer requires changes; electrically, mechanically, structurally, from what is indicated on the drawings, it shall be the responsibility of the Contractor requiring such change, to pay all costs involved with no additional costs to the Owner.
 - 3. Submit evaluations as follows:
 - a. Submit proposed comparable products for evaluation by the Architect at least two weeks prior to awarding contract to the manufacturer of a comparable product.
 - b. Obtain samples of Basis-of-Design product.
 - c. Select comparable products that comply with the characteristics specified. Submit evidence demonstrating compliance.
 - d. Submit samples of comparable products displayed side-by-side with samples of Basis-of-Design products.

Architect will determine whether the proposed comparable product is acceptable. Architect is not obligated to prove non-equivalence of proposed comparable products.

- F. Where a performance is specified and no manufacturer is listed, submit through the Shop Drawing procedure the name of the manufacturer, the product proposed, and detailed information showing its characteristics. Such proposal shall meet or exceed the specification, line item by line item, or be rejected.
- G. Equivalent components (articles, devices, materials, forms of construction, fixtures, etc.) may be submitted to the Architect for approval prior to bidding regardless of listed manufacturers.
- H. Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.03 FABRICATION

- A. Fabricate all items in the shop insofar as practicable. Where items cannot be completely shop fabricated and assembled for shipment, assemble and fit in shop, disassemble and ship. Identify parts for field assembly.
- B. Fabricate items to be straight, square, in proper alignment, and with hairline joints where joints are necessary and permitted. Pre-plan field joints to be as inconspicuous as possible; coordinate locations with Architect.

2.04 SHOP PRIMING

- A. Shop prime or seal surfaces of all products to receive paint materials in accordance with the requirements of Section 09 91 00.
- B. Apply a primer or sealer compatible with the specified paint materials.
- C. In the event such a primer is determined to be incompatible with the specified finish paint system, provide a barrier coat or remove the primer and reprime as directed, at no additional cost to the Owner.

2.05 PROHIBITED MATERIALS AND METHODS

- A. The following items are expressly prohibited:
 - 1. Attachment Related Items
 - a. Powder Fasteners: Powder fasteners are defined as anchors which are driven into place by any device which produces an impact force by use of a powder charge, compressed air, gas or any other propellant. Powder fasteners are prohibited.
 - b. Plug anchorage by use of wood, lead or plastic.
 - c. Perforated steel strap iron for pipe or other support or anchorage.
 - d. Suspension systems that are not independently supported.
 - 1) Ceiling grid systems shall not be supported from ductwork, electrical conduit, heating or plumbing lines, and vice versa.

- 2) Each utility system and the ceiling system shall be a separate installation, each independently supported from the building structure.
 - 3) Where interference occurs, provide trapeze type hangers or other suitable supports for each system.
 - 4) Locate hangers and supports where they will not interfere with access to mixing boxes, fire dampers, valves, and other appurtenances requiring servicing.
2. Methods Related Items
 - a. The penetration of floors and walls by pipes, ducts, or other penetrations unless openings are appropriately fire stopped by fire doors or fire dampers, and voids around pipes, ducts, conduits, etc. are sealed with fireproof materials.
 - b. The use of ink marking pens on surfaces of any kind of materials receiving paint or other finish in exposed location.
 3. Materials Related Items
 - a. Asbestos or asbestos containing materials.
 - b. Barbed wire in construction fencing.
 - c. Water soluble treatment of insulation jackets or facings, to impede or retard smoke or flames.

PART 3 EXECUTION

Not Applicable

END OF SECTION

SECTION 01 73 00

EXECUTION REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY

- A. Requirements of this Section apply to the Work of all other Sections.
- B. Section Includes:
 - 1. Examination of Substrate.
 - 2. Preparation.
 - 3. Installation.
 - 4. Workmanship.
 - 5. Protection.
 - 6. Overhead Attachments.
 - 7. Prohibited Methods.

1.02 RELATED SECTIONS

- A. Quality Control: Section 01 45 00.
- B. Cutting and Patching: Section 01 73 29.
- C. Shop Drawings, Product Data and Samples: Section 01 33 23.
- D. Product Requirements: Section 01 60 00.

1.03 STANDARDS

- A. Standards, codes and regulations published by Manufacturer's Associations, governmental agencies and other regulatory authorities form a part of these Specifications as minimum requirements. Such references include the latest issue and all amendments up to 30 days prior to the Bid Date.
- B. "Governing Authority" means all federal, state and local laws and regulations.
- C. Where differences occur between the Contract Documents and such standards, the most restrictive requirement shall apply.
- D. Supply all materials and perform all work in accordance with the Manufacturer's Specifications and installation procedures, and in conformance with published trade and manufacturer's association standards, unless specifically noted otherwise herein.

1.05 NON-CONFORMING WORK

- A. Faulty work or work not in conformance with the Contract Documents will not be permitted by the Architect.
 - 1. It is the responsibility of the Contractor to propose a remedy by means of detailed drawings and written documentation and submit such documentation to the Architect for comments.
 - 2. All costs for the removal and reconstruction of such work, as well as additional services of the Architect, shall be paid for by the Contractor.

PART 2 PRODUCTS - NOT APPLICABLE

PART 3 EXECUTION

3.01 EXAMINATION OF SUBSTRATE

- A. Examine the substrates or structure to which a product is to be applied or installed. Do not proceed until unsatisfactory conditions have been corrected. Starting the work indicates acceptance of conditions and the installer assumes full responsibility for results.
- B. Check the substrate or structure for proper tolerances and clearances. Tolerances are listed under individual specification Sections.

3.02 PREPARATION

- A. Substrate: Where the products are applied to a substrate, prepare the substrate as recommended by the product manufacturer. That generally includes the following:
 - 1. Bringing substrate to a uniform surface by smoothing uneven surfaces and filling holes, cracks and depressions with recommended filler or compatible type material.
 - 2. Depressed Slabs: Bring to required elevation to receive finished materials where finished materials cannot completely fill depression. Use approved cementitious filler or compatible type material. Coordinate depressed slab locations with finish material locations.
 - 3. Remove substances such as dust, oils and other foreign matter, not compatible with the product.
 - 4. Surfaces shall be dry, unless moisture content or wetting requirement is specified or recommended.
- B. Concrete Slabs: Provide steel shot abrasive cleaning of concrete slabs receiving designated finish flooring materials.
 - 1. Designated Finish Flooring Materials
 - a. Cementitious or cementitious set materials.
 - b. Sheet flooring materials.
 - c. Waterproofing materials.

- d. Paint materials.
- e. Polymer or epoxy type seamless flooring.
2. Equipment: Electric powered portable unit with self-contained dust collection system. Size(s) of unit(s) and shot media suitable for conditions and proposed finish materials. WHEELABRATOR CORP. "Blastrac" or similar type system by SASE COMPANY INC., BW MANUFACTURING or INNOVATECH.
3. Cleaning: Remove concrete surfaces to sufficient depth to remove bond breakers and contaminants such as curing compounds, oils, and other foreign matter which may be detrimental to the completed flooring installation.
 - a. Work smoothly and evenly over entire surface; avoid creating dips, ridges, or other imperfections which would show or telegraph in the completed installation.
 - b. Small transitions for different flooring materials may be obtained by multiple passes if carefully executed to create smooth even slope of not more than 1/8" in 2 feet.
4. Clean floor as near as possible to flooring installation to avoid contamination from work of other trades. Protect clean floor from soiling with suitable sheet materials. Reclean soiled areas.

C. Inserts and Anchorages

1. Anchorages where not detailed are the responsibility of the installer to design a suitable connection, structurally sound, and aesthetically acceptable to the Architect. Furnish calculations, drawings and product data when requested by the Architect. Such information may or may not be returned as indicated in Section 01 33 23.
2. It is the responsibility of the installer to furnish built-in fastening devices for his/her product to the proper trade for installation as the work proceeds.
3. In the event such devices are not furnished in time to be built-in, it is the installer's responsibility to provide other methods for attaching their product. Submit drawings and other required data to the Architect.

D. Templates: Provide templates, diagrams and other coordinating documents to the proper Contractor, manufacturer or supplier of related items affecting the Work.

E. Dimensions

1. If the exact location of an item is not indicated by dimension on the Drawings or noted in the Specifications, the Architect reserves the right to determine such location in the field prior to roughing-in.
2. If the exact dimensions of a product are not indicated, the Architect reserves the right to determine dimensions prior to the ordering or fabrication of a product.
3. Such dimensional changes shall not be a basis for changes in the Contract Sum.
4. Where miscellaneous devices, such as thermostats, switches, controls, grilles, pipes, or outlets of any nature are not specifically located by the Contract Documents, request such location or obtain approval of the

location prior to installation. If approval has not been obtained, the Architect may direct the relocation of such devices at the expense of the installer.

3.03 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
 - a. Where pipes occur in partitions, furred-out spaces and chases, determine exact location and size and fit entirely concealed into allotted space. Report conflicts to Architect prior to installation.
 - b. Where two or more pipes are to be installed in parallel, or parallel to the piping of other trades, the piping shall be installed with sufficient space between the pipes to allow for the proper application of pipe covering, painting, and servicing.
 - c. Furnish advance information on locations and sizes of frames, boxes, sleeves and openings needed for the Work to installers.
 - 4. Install work to allow for installation of future work identified on drawings.
 - 5. Maintain minimum headroom clearance of 8 feet in spaces without a suspended ceiling.
- B. Install products in accordance with manufacturer's recommendations or the requirements of trade associations, listed standards, Shop Drawings and Contract Documents.
- C. If a conflict exists between these references, the most strict requirements govern. If printed instructions are not available, consult with the manufacturer or the manufacturer's field representative, where applicable.
- D. Provide hangers, auxiliary framing, and other means for installing ceiling suspension systems, lighting fixtures, diffusers, and other equipment in ceilings to avoid ductwork, piping, etc.
 - 1. Suspend from structural members (i.e. joists, beams, etc.), and not from ductwork or piping.
 - 2. Provide supplemental framing members (i.e. angles, tubes, light gage steel framing, etc.) to span between structural members where required to support items of this paragraph C.
- E. Install work that will not interfere with the proper installation of the Work of other trades.
- F. Install work in a manner to facilitate operating, servicing and repairing.

- G. Install each component during weather conditions and Project status that will ensure the best possible results. Isolate each part of the completed construction from incompatible material as necessary to prevent deterioration.
- H. Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

3.04 SPACE PREFERENCE

- A. Carefully check and coordinate the location and level of all Work to avoid conflicts between all contractors. Where conflicts occur, the following preferences shall generally govern:
 - 1. Recessed electrical light fixtures
 - 2. High and medium pressure ductwork
 - 3. Low pressure ductwork
 - 4. Soil, waste, vent and storm piping
 - 5. Sprinkler piping
 - 6. Liquid heat transfer and refrigerant piping
 - 7. Domestic water piping
 - 8. Electrical conduits from branch circuits
- B. However, no ductwork or liquid heat transfer main shall have preference over plumbing piping below plumbing fixtures, nor over electrical conduits above or below electrical switchgear and panels. No piping conveying liquids shall be installed directly over electrical or elevator equipment. No piping shall be installed in electrical or elevator equipment rooms.
- C. Where headroom or space conditions resulting from application of these preferences appear inadequate, notify the Architect prior to installing the Work.
- D. Coordinate the mounting heights of busways, electrical equipment and raceways to clear the opening heights of doors, the height of vehicles and the heights of equipment which needs to be routinely removed, and out of paths required for maintenance.

3.05 WORKMANSHIP

- A. Install products straight, plumb, level and in line. Securely attach items to the substrate, using recommended adhesives, mechanical fasteners or other devices. Where holes are provided for attachment, do not field drill or cut new holes without the approval of the Architect.
- B. Where applicable, match finished work to the approved samples or mock-ups.
- C. Conceal fasteners wherever possible, unless exposed fasteners are permitted or specified.

- D. Weld in accordance with AWS standards; comply with AWS for qualifications of operators and for workmanship.
- E. Visual Effects: Provide uniform joint widths in exposed work. Arrange joints in exposed work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.
- F. Recheck measurements and dimensions, before starting each installation.

3.06 PROTECTION

- A. Protect finished surfaces of product being installed and surrounding products from damage during installation. Provide protective devices as required and as recommended by the manufacturer. Cover work subject to damage at the end of each day's work.
- B. Coat concealed surfaces of metal products with a bituminous or other approved coating to prevent contact between dissimilar metals or other material which can cause deterioration.
- C. Correct damage by repairing or replacing as directed by the Architect. Repairing will be permitted only where the repair is undetectable and does not cause structural damage or interfere with proper functioning of the part.
- D. Protect finish of installed products until Substantial Completion of the Project by use of wrappings, covers or other approved protective devices. Remove such protection immediately prior to final cleaning.
- E. Limiting Exposures: Coordinate and supervise construction activities to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Maintain exposures within the manufacturers recommended limits. Where applicable, such exposures include, but are not limited to, the following:
 - 1. Excessive static or dynamic loading
 - 2. Excessive internal or external pressure
 - 3. Excessive high or low temperatures
 - 4. Thermal shock
 - 5. Excessively high or low humidity
 - 6. Air contamination or pollution
 - 7. Water or ice
 - 8. Solvents
 - 9. Chemicals
 - 10. Light
 - 11. Radiation
 - 12. Puncture
 - 13. Abrasion
 - 14. Heavy traffic
 - 15. Soiling, staining and corrosion
 - 16. Bacteria

17. Rodent and insect infestation
 18. Combustion
 19. Electrical current
 20. High speed operation
 21. Improper lubrication
 22. Unusual wear or other misuse
 23. Contact between incompatible materials
 24. Destructive testing
 25. Misalignment
 26. Excessive weathering
 27. Unprotected storage
 28. Improper shipping
 29. Theft
 30. Vandalism
- F. Take precautions to protect existing concrete and asphalt pavement from damage due to vehicle loads, parking, and storage.
1. Schedule loading to minimize pavement material consolidation during hot weather. Distribute wheel loads to the greatest extent possible.

3.07 OVERHEAD ATTACHMENTS

- A. Where overhead hangers are required, and not indicated on the drawings, provide one or more of the following as required:
1. Concrete inserts prior to placement of concrete or drilled type inserts after concrete is placed.
 2. Trapeze from adjacent structure with suitable steel framing.
 3. Connections to Structure: Suitable anchorage devices with a minimum load carrying capacity of 250 pounds plus safety factor of 4:1 for the applied load.
 - a. Concrete: Steel expansion anchors. See Prohibited Material and Methods specified in Section 01 60 00.
 - b. Steel: Bolted or welded connections to steel structure.
- B. Where metal deck is furnished with hanger tabs or similar devices, applied total load, including work of other trades, not to exceed 75 pounds for each device. Loads in excess of permitted limit to be supported by trapeze framing as specified above.
- C. Verify support requirements of heavy or unusual loads not specifically shown on drawings with Architect.

3.08 OPERATION AND MAINTENANCE

- A. Contractor shall maintain all systems and equipment operated during construction. The contractor responsible for the installation of the system shall operate and maintain it. Make all repairs and perform all maintenance to assure Work is turned-over to Owner in first class condition.

B. Maintenance work includes:

1. Lubrication
2. Adjustments
3. Filter replacements
4. Chemical treatment.

END OF SECTION

SECTION 01 73 29
CUTTING AND PATCHING

PART 1 GENERAL

1.01 DESCRIPTION

- A. Execute cutting, fitting or patching of Work, required to:
1. Make several parts fit properly.
 2. Uncover Work to provide for installation of ill-timed Work.
 3. Remove and replace defective Work.
 4. Remove and replace Work not conforming to requirements of Contract Documents.
 5. Remove samples of installed Work as specified for testing.
 6. Install specified Work in existing construction.
- B. In addition to contract requirements, upon written instructions of Architect:
1. Uncover Work to provide for Architect's observation of covered Work.
 2. Remove samples of installed materials for testing.
 3. Remove Work to provide for alteration of existing Work.
- C. Do not endanger any Work by cutting or altering Work or any part of it.
- D. Do not cut or alter Work of another Contractor without written consent of Architect.

1.02 SUBMITTALS

- A. Prior to cutting which affects structural safety of Project, submit written notice to Architect, requesting consent to proceed with cutting, including:
1. Identification of Project.
 2. Description of Affected Work.
 3. Necessity for cutting.
 4. Affect on other Work, on structural integrity of Project.
 5. Description of proposed Work. Designate:
 - a. Scope of cutting and patching.
 - b. Contractor and trades to execute work.
 - c. Products proposed to be used.
 - d. Extent of refinishing.
 6. Alternative to cutting and patching.
- B. Should conditions of Work, or schedule indicate change of materials or methods, submit written recommendation to Architect, including:

1. Conditions indicating change.
 2. Recommendations for alternative materials or methods.
 3. Submittals as required for Substitutions.
- C. Submit written notice to Architect, designating time Work will be uncovered, to provide observation.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Patching of materials and surfaces shall be in accordance with the requirements of the Contract Documents. Where not otherwise defined, patching shall match adjacent surfaces and proper materials shall be provided accordingly.

PART 3 EXECUTION

3.01 INSPECTION

- A. Inspect existing conditions of Work, including elements subject to movement or damage during cutting and patching.
- B. After uncovering Work, inspect conditions affecting installation of new products.

3.02 PREPARATION PRIOR TO CUTTING

- A. Provide shoring, bracing and support as required to maintain structural integrity of Project.
- B. Provide protection for other portions of the Project, including all Contractors' personnel.

3.03 PERFORMANCE

- A. Execute fitting and adjustment of products to provide finished installation to comply with specified tolerances, finishes.
- B. Execute cutting and demolition by method which will prevent damage to other Work, and will provide surface to receive installation of repairs and new Work.
1. No cutting shall be performed which will, in any way, reduce the structural strength of the building. Should such cutting be necessary, consult Architect and do not proceed with such operation unless written approval is given.
 2. Finished Surfaces: Cur or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
- C. Restore Work which has been cut or removed; install new products to provide

completed Work in accord with requirements of Contract Documents.

- D. Patching of materials and surfaces shall be in accordance with the requirements of the Contract Documents. Where not otherwise defined, patching shall match existing or adjacent surfaces and proper materials shall be provided accordingly.
1. Wherever existing walls, floors, ceilings, etc., are cut, the exposed surfaces must be neatly finished by patching, painting, wall covering, etc., as required to blend patched areas into adjacent existing surfaces. Patched areas shall not be visible when viewing entire wall surface.
 - a. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 2. Where painting or finishing of patched surfaces or application of wall or floor covering is required, finish the entire plane of surface in which patched area occurs.
 3. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

3.04 SLEEVES AND OPENINGS

- A. Where pipes, conduits, ductwork or other materials pass through new walls, partitions, floors, roof or ceilings, provide suitable sleeves in these elements or provide openings where sleeves are not practical.
- B. Close sleeves and openings to prevent passage of smoke or fire using approved methods and materials to maintain the fire rating of the construction being penetrated. See Section 07 84 00.
- [1. Unless otherwise indicated, extend floor sleeves 2" above finished floor.]
- C. Where pipes, conduit, ductwork etc., pass through, behind, or above existing construction, provide all cutting, patching, and refinishing for doing this work as specified herein.
- D. Lintels: Provide steel or precast concrete lintels to span openings in masonry walls sized in accordance with schedule shown or as detailed on structural drawings. In general, lintels are not required for openings less than the width of masonry unit in which wall is being constructed. Penetrations under beams or other concentrated loads require approval of Architect.

3.05 CLEANING

- A. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

END OF SECTION

SECTION 01 74 00

CLEANING

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

- A. Refer to General Conditions for additional requirements.
- B. Execute cleaning, during progress of the work and at completion of the work, as required by Contract Documents.

1.02 RELATED SECTIONS

- A. Cutting and Patching: Section 01 73 29.
- B. Cleaning for Specific Products or Work: Specification section for the work.

1.03 CLEANING AND DISPOSAL REQUIREMENTS

- A. Standards: Maintain project in accord with the following safety and insurance standards:
 - 1. Applicable Federal and State Requirements.
 - 2. National Fire Protection Association.
- B. Hazards Control: Each Prime Contractor shall comply with the following requirements:
 - 1. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 2. Prevent accumulation of wastes which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.
- C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
 - 1. Do not burn or bury rubbish and waste materials on project site.
 - 2. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary sewers.
 - 3. Do not dispose of waste into streams or waterways.
 - 4. Wet down dry materials and rubbish to prevent dust.
- D. Clean streets, highways, and private properties of all mud, earth, rubbish, rocks, refuse or other debris of any kind resulting from such work or related transportation to and from the work site.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Select and use cleaning materials and equipment with care to avoid scratching, marring, defacing, staining or discoloring surfaces cleaned.
- B. Use only cleaning materials recommended by manufacturer of surfaces to be cleaned.
 - 1. Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.
- C. Use cleaning materials only on surfaces recommended by the cleaning material manufacturer.

PART 3 EXECUTION

3.01 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
- B. Provide, maintain and empty 55 gallon metal and dumpster type containers for collection of waste materials, debris and rubbish. Locate containers as directed by Architect.
 - 1. Provide containers with adequate capacity to accommodate anticipated needs. If containers do not have adequate capacity, increase intervals of waste removal or capacity of containers until adequate capacity is provided.
- C. At reasonable intervals during progress of Work, but in no case less than once a week, dispose of waste materials, debris and rubbish.
- D. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- E. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- F. Clean interior surfaces before start of finish painting and continue cleaning on an

as-needed basis until painting is finished.

- G. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.
- H. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.
- I. Vacuum interior building areas where work is performed prior to painting and other finish work. Continue vacuum cleaning on an as needed basis until building is ready for occupancy.
- J. Protect interior of ductwork during construction from accumulation of dirt, dust or debris.
- K. Clean trash from all chases and concealed spaces before final enclosure.

3.01 PROGRESS CLEANING

- A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
- B. General Contractor
 - 1. Provide, maintain and empty 55 gallon metal and dumpster type containers for collection of waste materials, debris and rubbish. Locate containers as directed in General Conditions. These containers will be utilized by all Prime Contractors and their subcontractors.
 - a. Provide containers with adequate capacity to accommodate anticipated needs. If containers do not have adequate capacity, increase intervals of waste removal or capacity of containers until adequate capacity is provided.
 - 2. At reasonable intervals during progress of Work, but in no case less than once a week, dispose of waste materials, debris and rubbish.
 - 3. Direct Special Attention To:
 - a. Provide non-staining layout lines and other markings on masonry and concrete. Use chalk lines wherever possible and remove when no longer needed.
 - b. Remove all stains from concrete surfaces, including floors.
 - c. Shop marks shall not appear on exposed surfaces of any item.
 - d. Remove concrete, mortar and paint spatters.
 - e. Clean both brick and concrete unit masonry.
 - f. Protect aluminum frames during construction and thoroughly clean upon completion of the installation.
 - 4. Clean interior surfaces before start of finish painting and continue cleaning on an as-needed basis until painting is finished.
 - 5. Vacuum interior building areas where work is performed prior to painting and other finish work. Continue vacuum cleaning on an as needed basis until building is ready for occupancy.

- B. Protect interior of ductwork during construction from accumulation of dirt, dust or debris.

3.02 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
 - 1. Leave Project clean and ready for occupancy.
- B. Employ experienced workmen, or professional cleaners for final cleaning.
- C. At the completion of the work, remove all surplus material, false work, temporary structures, including foundations thereof, plants of any description and debris of every nature resulting from their operations and put the site in a neat and orderly condition.
- D. Clean exposed interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition.
- E. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
- F. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
- G. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from sight-exposed interior and exterior surfaces, including light fixtures and lenses; polish surfaces so designated to a shine finish.
 - 1. Clean finishes free of dust, stains, films and other foreign substances.
 - 2. Clean transparent and glossy materials to a polished condition; remove foreign substances. Polish reflective surfaces to a clear shine.
- H. Remove temporary protection and labels not required to remain
- I. Clean surfaces of equipment; remove excess lubrication.
- J. Remove debris, rubbish, dirt, etc. from open concealed spaces, chases and above ceilings.
- K. Repair, patch and touch-up marred surfaces to specified finish, to match adjacent surfaces.
- L. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.

- M. Remove waste, foreign matter, and debris from roofs, gutters, areaways, and drainage systems.
- N. Clean plumbing fixtures to a sanitary condition.
- O. Clean light fixtures and lamps; polish lenses.

3.02 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
 - 1. Leave Project clean and ready for occupancy.
- B. Contractor Requirements
 - 1. Conform to requirements of General Conditions.
 - 2. Employ experienced workmen, or professional cleaners for final cleaning.
 - 3. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
 - 4. Clean exposed interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition.
 - 5. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - 6. Sweep concrete floors broom clean in unoccupied spaces.
 - 7. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - 8. Remove grease, dust, dirt, stains, labels, fingerprints and other foreign materials from sight-exposed interior and exterior surfaces, including light fixtures and lenses; polish surfaces so designated to a shine finish.
 - 9. Clean finishes free of dust, stains, films and other foreign substances.
 - 10. Clean transparent and glossy materials to a polished condition; remove foreign substances. Polish reflective surfaces to a clear shine.
 - 11. Remove temporary protection and labels not required to remain
 - 12. Clean surfaces of equipment; remove excess lubrication.
 - 13. Remove debris, rubbish, dirt, etc. from open concealed spaces, chases and above ceilings.
 - 14. Repair, patch and touch-up marred surfaces to specified finish, to match adjacent surfaces.
 - 15. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
 - 16. Remove waste, foreign matter, and debris from roofs, gutters, areaways,

- and drainage systems.
17. Clean plumbing fixtures to a sanitary condition.

- C. Prior to Final Completion, or Owner occupancy, Contractor shall conduct an inspection of sight exposed interior and exterior surfaces, and all work areas, to verify that the entire work is clean.

END OF SECTION

SECTION 02 41 19

SELECTIVE BUILDING DEMOLITION

PART 1 GENERAL

1.01 SUMMARY OF WORK

- A. Work Included: The extent of demolition work is indicated on drawings, and includes, but is not necessarily limited to, the following:
1. Selective breaking up, dismantling and/or removal of existing building items.
 2. Salvage of selected existing materials to be turned over to Owner as may be determined by the Owner or to be reused in the project.
 3. Cutting and patching.
 4. Clean up.
- B. Removal of asbestos and other hazardous materials is not a part of this Contract. If asbestos or other hazardous materials are encountered during demolition, Contractor shall halt demolition operations in that area and notify Architect.

1.02 RELATED SECTIONS

- A. Cutting and Patching: Section 01 73 29.

1.03 PROJECT CONDITIONS

- A. Condition of Structures: The Owner assumes no responsibility for actual condition of structures to be demolished.
1. Conditions existing at time of inspection for bidding purposes will be maintained by Owner insofar as practicable. However, variations within the structure may occur by Owner's removal and salvage operations prior to the start of the Demolition work.
 2. It is solely the Contractor's responsibility to determine demolition procedure and sequence and to insure the safety of the building and its component parts during demolition. This includes the addition of whatever shoring, sheeting, temporary bracing, guys or tie-downs which might be necessary. Such material shall maintain the Contractor's property after completion of the project.
 3. It is solely the Contractor's responsibility to follow all applicable safety codes and regulations during all phases of the work.
 4. Existing Building: Provide temporary supports and other measures as required to prevent damage to the existing building during construction. Field verify all existing dimensions which affect the new construction.

- B. Coordination
1. Demolition sequence, phasing and methods must be approved by Architect prior to start of demolition work.
 2. Coordinate shoring with structural modifications. Shoring to be left in place until completion of structural work permits its removal.
- C. Title to Removed Property
1. All removal items, unless otherwise indicated for salvage or reuse will become the property of the Contractor and shall be removed from the Site. During the demolition operations, Owner reserves the right to add to, or delete from, the list of items designated for reuse or salvage.
 2. Items to be salvaged for the Owner or for reinstallation are as indicated on the drawings.
 3. Site storage or sale of Contractor owned removed items will not be permitted.
- D. Removed and Reinstalled Items:
1. Clean and repair items to functional condition adequate for intended reuse.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
- F. Traffic: Conduct demolition operations and removal of debris to ensure minimum interference with roads, streets, walks and other adjacent occupied or used facilities.
1. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.
- G. Protections: Ensure safe passage of persons around area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons.
- H. Damages: Promptly repair damages caused to adjacent facilities by demolition operations at no cost to Owner.

J. Utility Services

1. Locate and identify electrical and mechanical services passing through or located within affected area and serving areas outside the work limits.
2. Maintain existing utilities and protect against damage during demolition operations.
3. Shut-down periods
 - a. Arrange timing of shut-down periods of all in-service utilities with the Owner. Do not shut down any utility without prior written approval.
 - b. Keep shut-down period to a minimum or use intermittent period as directed.
 - c. Some shut-down hours may be required after normal working hours. No extra compensation will be made for Work after normal working hours, weekends or holidays.

K. Scheduling: Conduct work so as to avoid interference with operations and work in areas of building which are to remain in service.

L. Permits, Fees and Inspections: Obtain and pay for all permits, fees and inspections required by governing authorities.

PART 2 PRODUCTS

2.01 MATERIALS

- A. The Contractor shall furnish all materials, tools, equipment, supplies and labor required to perform the work in accordance with the Drawings and Specifications and within the time limits as specified. All work done under this contract shall conform to all current standards, building codes and ordinances. American National Standard for Demolition Operations – Safety Requirements, ANSI A10.6 (latest edition), is included by reference.
- B. Shoring Materials: As determined by Contractor.

PART 3 EXECUTION

3.01 PROTECTION

- A. Use water sprinkling, temporary enclosures and other approved methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level. Comply with governing regulations pertaining to environmental protection.
 1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, pollution and electrical shock.
 2. Clean adjacent structures and improvements of dust, dirt and debris caused by demolition operations, as directed by the Architect. Return adjacent areas to conditions existing prior to the start of the work.

- B. In removal of existing materials, take care not to damage work remaining in place, salvageable materials or equipment. Repair or replace any existing construction, materials or equipment damaged during demolition to Owner's satisfaction at no additional cost.
- C. Erect dust chutes and use for removal of materials, rubbish and debris.

3.02 DEMOLITION

A. Building Items Demolition

- 1. General
 - a. Items specified herein or indicated on drawings.
 - b. Where indicated to be removed and either turned over to Owner or reinstalled, use methods for removal which will provide the least potential adjacent materials to remain.
 - c. Miscellaneous Items: Material or equipment encountered during construction which must be removed to aid in construction operations or that which will not be used in completed facilities.
- 2. Junction Points: Neatly repair the point of junction after removal of parts or all of masonry walls, slabs and like work which tie into new work or existing work, so as to leave only finished edges and surfaces exposed.
- 3. Except where Contract Documents require leaving an existing floor finish in place, completely remove existing flooring from locations where new finishes are scheduled. Leave top surface of substrate completely free from materials that would interfere with bond of new materials.
- 4. Completely remove existing carpet from areas to receive new floor finishes. Also remove pad and all traces of adhesive.
- 5. Floor Preparation: See Section 01 73 00, Execution Requirements.

B. Mechanical (HVAC & Plumbing)

- 1. Disconnect or shut off service to areas where mechanical work is to be removed.
- 2. Remove all plumbing, heating, ventilating and air conditioning equipment, fixtures and related piping, ductwork and appurtenances as indicated.

C. Electrical

- 1. Disconnect or shut off service to areas where electrical work is to be removed.
- 2. Remove all electrical fixtures, equipment and related switches, outlets, conduit, wiring and appurtenances as indicated, except conduit in walls and ceilings not being removed may remain. If these conduits are left in place, cut ends are to be permanently sealed.

3.03 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Remove from site, debris, rubbish and other materials resulting from

demolition operations.

B. Removal: Transport materials removed and dispose of off site except as follows:

1. Transport material indicated to be "salvaged" to storage areas as directed by Architect. Storage areas are located on-site.
2. Store salvaged materials, protected from dirt and damage.

C. Clean Up

1. Leave interior areas "broom clean".
2. Remove barricades as directed.
3. Remove shoring.

END OF SECTION

SECTION 04 73 10

MANUFACTURED STONE VENEER

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Manufactured stone veneer and shapes, metal anchors, lath and accessories.

1.02 RELATED SECTIONS

- A. Sealant: Section 07 92 00.

1.03 REFERENCES

- A. ASTM C150 - Specifications for Portland Cement.
- B. ASTM C177 - Test Method for Thermal Conductivity by Means of the Guarded Hot Plate.
- C. ASTM C270 - Specification for Mortar for Unit Masonry.
- D. Underwriters' Laboratories, UL723 - Test for Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

- A. Product Data: Submit for all items.
- B. Samples: Submit samples for selection by Architect.
- C. Submit manufacturer's written installation instructions. Include instructions for each type of substrate and mounting conditions encountered on Project.

1.05 QUALITY ASSURANCE

- A. Applicator: Approved by manufacturer with a minimum of three years experience in the installation of manufactured veneer of the type specified.

1.06 SAMPLE PANEL

- A. Construct where approved by Architect.
- B. Panel shall be at least 4 feet long by 4 feet high and shall show full color range, joint detail, all other details of construction that will be used in the completed work.

Include at least one 90 degree corner.

- C. Construct additional panels as required by Architect if original panel construction is not acceptable.
- D. Do not start simulated masonry application until the sample panel is approved by the Architect.
- E. Retain acceptable sample as reference standard for the project.
- F. Demolish and remove panel from site after completion and acceptance of simulated masonry work.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Conform to the requirements of the stone manufacturer. Ship materials in their original cartons or wrappings.
- B. Store moisture sensitive materials in protected enclosures; handle by methods which avoid exposure to moisture.

1.08 PROJECT CONDITIONS

- A. Maintain materials and surrounding air temperature at minimum 40 degrees F prior to, during, and for 48 hours after application.
- B. Protect materials from rain, moisture, and freezing temperatures prior to, during, and for 48 hours after application.
- C. Allow no construction work on opposite side of wall to which work is being applied during and for 48 hours after application.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Basis of Design: As indicated
- B. Other Manufacturers: Subject to compliance with requirements and an acceptable match, products by the following manufacturers are acceptable:
 - 1. CORONADO PRODUCTS
 - 2. ELDORADO STONE
 - 3. BORAL STONE PRODUCTS

2.02 MATERIALS

- A. Description: Thin veneer sections comprised of noncombustible lightweight aggregates, Portland cement and natural iron oxide colorings.

- B. Metal Lath: ASTM C847; 3.4 pound flat diamond mesh, galvanized. Provide galvanized steel anchor plates (similar to RODENHOUSE Grip-Plate Lath and Plaster Washer) and galvanized fasteners as recommended by stone manufacturer for substrate conditions and insulation/sheathing thicknesses.
- C. Cleavage Membrane/Water Resistive Barrier: Provide type as recommended by stone manufacturer.

2.03 MANUFACTURED UNITS

- A. Physical Properties
 - 1. Compressive Strength: ASTM C192 and ASTM C39, 1800 psi, 5 specimen average, 1500 psi minimum for individual unit.
 - 2. Bond Between Stone Unit, Type S Mortar, and Backing: ASTM C 482, 50 psi
 - 3. Freeze-Thaw Test: ASTM C 67: Less than 3%
 - 4. Water Absorption: UBC Standard 15-5: 22 percent
 - 5. Density: ASTM C 567 (Dry density): 75 pcf
- B. Burning Characteristics
 - 1. Smoke Developed: 0.
 - 2. Fuel Contributed: 0.
 - 3. Flame Spread: 0.
- C. Colors: As selected by Architect.
- D. Provide all trim pieces as indicated
- E. Provide plaster ring at surface mounted fixtures and similar items. Type as recommended by stone manufacturer. Thickness to match stone.

2.04 MORTAR

- A. Materials
 - 1. Portland Cement: ASTM C150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated or selected.
 - 2. Masonry Cement: ASTM C91, provide non-staining type for stonework.
 - 3. Hydrated Lime: ASTM C207, Type S.
 - 4. Aggregate: ASTM C144, clean masonry sand, not over 10% to pass No. 100 sieve for general use.
 - 5. Water: Clean, fresh and free of deleterious amounts of acids, alkalis and foreign organic matter.
 - 6. Water Repellent Admixture: W. R. GRACE Dry-Block, RHEOMIX - Rheopel Mortar Admixture; MASTER BUILDERS, INC., KRETE INDUSTRIES KreteGuard 390. Manufacturer must submit certification that water repellent admixture meets or exceeds requirements specified herein.

- a. Conformance: ASTM E514.
 - b. Type: Integral polymeric water-repellents (IPWR).
 - 7. Color Additive: Inorganic pigments as required to produce colored mortar as selected by Architect. SGS Colors by SOLOMON GRIND CHEM SERVICE; DAVIS COLORS or equal.
 - a. Resistant to alkali, light and weather
 - b. Unaffected by cement and free of water soluble salts.
 - 8. Cold Weather Additive: Non-chloride, non-corrosive, accelerating admixture complying with ASTM C494, Type C or ASTM C1384 and recommended by the manufacturer for use in masonry mortar of composition indicated.
- B. Proprietary Mortar Cement: Conform to ASTM C91, containing hydrated lime.
 - 1. Certification: Submit certified laboratory data substantiating conformance with structural requirements for mortars as specified; and that no adverse chemical reaction will occur with the specified masonry accessories and reinforcing. Certification must be received and approved by Architect prior to mortar use.
 - 2. Suitable products are acceptable from the following manufacturers:
 - a. CEMEX (Richcolor)
 - b. LEHIGH HANSON
 - c. ESSROC MATERIALS, INC. (Brixment)
 - d. QUIKRETE
- C. Type N Mortar
 - a. Proportions: ASTM C270 proportions by volume. Minimum average compressive strength at 28 days of 750 psi.
 - b. Colors: As selected by Architect.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates upon which manufactured masonry will be installed.
- B. Coordinate with responsible entity to correct unsatisfactory conditions.
- C. Commencement of work by installer is acceptance of substrate conditions.

3.02 PREPARATION

- A. Protection: Protect adjacent work from contact with mortar.
- B. Surface Preparation: Prepare substrate in accordance with manufacturer's installation instructions for the type of substrate being covered.

3.03 INSTALLATION

- A. Install system complete in accordance with manufacturer's instructions and recommendations for the types of substrates encountered and the Masonry

Veneer Manufacturers Association's (MVMA) Installation Guide and Detailing Options for Compliance with ASTM C1780.

- B. Expansion and Control Joints: Locate joints in accordance with ASTM C1780.

3.04 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Provide the services of manufacturer's field representative during installation.

END OF SECTION

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SECTION 05 50 00

METAL FABRICATIONS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide miscellaneous metals as indicated on the drawings and specified herein. Work includes, but is not limited to:
 - 1. Pre - manufactured aluminum railings system.

1.02 RELATED SECTIONS

- A. Structural Steel: Section 05 12 00.

1.03 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design metal railings including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

1.04 SUBMITTALS

- A. Shop Drawings – Handrails: Indicate in detail construction, gages of metals, jointing, methods of installation, fastening and supports, location and sizes of welds, anchors, hangers and other pertinent information and data.
 - 1. In addition, submit plans and details of stairs and handrails, drawn to scale not less than 1/4 inch per foot.
 - 2. Shop drawings shall contain design, type of steel and load assumption, bearing the seal of a licensed professional engineer registered in the State of Ohio.

1.05 QUALITY ASSURANCE

- A. Fabricate and install metal items in accordance with applicable standards of AISC and NAAMM. Welding and related procedures in accordance with AWS.

- B. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry for installation of miscellaneous metal work. Provide setting drawings, templates, instructions and directions for installation of anchorage devices. Coordinate delivery with other work to avoid delay.

1.06 COORDINATION

- A. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry for installation of miscellaneous metal work. Provide setting drawings, templates, instructions and directions for installation of anchorage devices. Coordinate delivery with other work to avoid delay.

1.07 STORAGE AND HANDLING

- A. Protect from corrosion.
- B. Store materials in a weathertight and dry place until ready for use in the work.
- C. Store packaged materials in their original unbroken package or container.

PART 2 PRODUCTS

2.01 MATERIALS

A. Ferrous Metals

1. Steel Shapes, Bars and Plates: ASTM A36.
2. Steel Plates to be Bent or Cold Formed: ASTM A283, Grade C.

B. Aluminum

1. Structural Shapes, Plates and Bars: ASTM B209, 6061-T6.
2. Non-Structural Plates: ASTM B209, 3003.
3. Extruded Structural Pipe and Tube: ASTM B429, 6063-T6.
4. Aluminum Extrusions: ASTM B221, Alloy 6063-T6

2.02 FASTENERS

A. General

1. Provide fasteners of types as required for assembly and installation of fabricated items.
2. Unless otherwise indicated, provide Type 304 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941; Class Fe/Zn 5; at exterior walls.

2.03 MANUFACTURED RAILING

- A. Aluminum Railing System: Assembly of extruded aluminum top rails, bottom rails, rail inserts, brackets pickets, post and post sleeves.

1. Top Rail: 1.8" x 1.6" bread loaf profile, 0.05" thickness.
2. Bottom Rail: 1.5" x 1.25", 0.05" thickness.
3. Balusters: Rectangular .57" x .75", 0.05" thickness.
4. Posts: 3" square 0.13" thickness with .5" base plate.
5. Accessories: Provide all fasteners, rail inserts, brackets and hardware required for complete installation.
6. Basis of Design Manufacturer: AZEK Timbertech Impression Rail System.

2.04 FABRICATION

A. General

1. Workmanship
 - a. Construct all items to ensure ease of installation and minimal field adjustment.
 - b. Use materials of size and thickness shown, or, if not shown, of required size and thickness to produce strength and durability in finished product. Ease exposed edges to a radius of approximately 1/32 inch. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
 - c. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces. Grind crotches to 1/8" radius.
 - d. Form exposed connections with hairline joints, flush and smooth.
2. Exposed mill names and logos not permitted in finished work.

B. Handrail/Guardrail:

1. Material: Prefabricated extruded aluminum system; meeting the requirements specified herein for the specific material.
2. Loadings: Steel guardrails and handrails shall meet the following load requirements:
 - a. Welded construction, fabricated, complete with connectors to structure designed for a concentrated load of 200 pounds applied at any point and in any direction on the handrail and at the top of the guardrail and in compliance with OBC.
 - b. Guardrails: Designed and constructed for a load of 50 pounds per lineal foot applied horizontally at the required guardrail height and a simultaneous load of 100 pounds per lineal foot applied vertically downward at the top of the guardrail.
 - c. Guardrails: Designed and constructed to resist a 200 pound concentrated horizontal load applied on a one foot square area at any point in the system including intermediate rails or other elements serving this purpose.
 - d. Handrails: Designed and constructed for a load of 50 pounds per lineal foot applied in any direction and in compliance with the OBC.
 - e. Loading conditions in paragraphs a, b, c and d shall not be applied simultaneously, but each shall be applied to produce maximum

- stress in each of the respective components or any of the supporting components.
3. Verify dimensions on site prior to shop fabrication.
 4. Railing system shall be assembled in a shop in largest sizes for delivery to site and for installation; to minimize field-splicing and assembly.
 - a. Rails shall be disassembled only as necessary for shipping and handling.
 - b. Rails shall be marked for re-assembly and coordinated installations.
 5. Close open ends of railings, not scheduled to be closed with finials, with close fitting steel plates welded in place and ground smooth.
 6. Brackets, Flanges and Anchors: Provide for railing posts and handrail supports. Provide inserts and sleeves as required for anchorage to concrete or masonry.
 7. Provide wall returns at ends of wall mounted rails.
- C. Accessories: Provide all clips, bolts, anchors, fasteners, etc., as required for completion of miscellaneous metal work. Type, size and strength as noted or as suitable for conditions and construction involved.

2.05 FINISHES

- A. Shop paint aluminum surfaces with baked-on organic polymer thermosetting powder coating applied over conversion coating.
1. Finish Coating Properties
 - a. Hardness: H or better in accordance with ASTM D3363.
 - b. Crosshatch Adhesion: In accordance with ASTM D3359.
 - c. Salt Spray Resistance: 1,000 hours, tested in accordance with ASTM D117.
 - d. Humidity Resistance: 1,000 hours tested in accordance with ASTM D2247.
 - e. Detergent Immersion: 1,000 hours tested in accordance with ASTM D2248.
 2. Colors: As selected by Architect.

PART 3 EXECUTION

3.01 PREPARATION

- A. Coordinate and furnish anchorages, settings drawings, diagrams, templates, instructions and directions for installation of anchorages, such as concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.02 INSTALLATION

- A. General
1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to

in-place construction; including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

2. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and level. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry or similar construction.
3. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

B. Handrail

1. Adjust railings prior to anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated or specified herein. Plumb posts in each direction. Secure posts in each direction. Secure posts and railing ends to building construction as follows.
2. Anchor posts to concrete as indicated on the drawings.
3. Weld posts to channels as indicated.
4. Secure handrails to wall with wall brackets.

3.03 ADJUSTING AND CLEANING

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

END OF SECTION

SECTION 06 20 00
EXTERIOR CARPENTRY

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide finish carpentry as indicated and specified. Work includes:
1. Composite cladding/trim.
 2. Composite exterior decking
 3. Sheathing for new vinyl siding and stone veneer.
 4. Concealed blocking for support of accessories, siding, trim, facing materials and similar type items.

1.02 RELATED SECTIONS

- A. Rough Carpentry: Section 06 10 00.
- B. Plastic Sheet Air Barriers: Section 07 27 19.
- C. Manufactured Stone Veneer: Section 04 73 10.
- D. Vinyl Siding: Section 07 46 33.

1.03 REFERENCES

- A. Standards: Wherever the following abbreviations are used herein, they shall refer to the corresponding standard:
1. ANSI: American National Standards Institute.
 2. AWI: Architectural Woodwork Institute.
 3. P.S.: U.S. Product Standard.
 4. American Plywood Association (APA): Grades and Standards

1.04 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.
- B. Submit samples of all finish materials, include the following:
1. Composite lumber
- C. Preservative Treated Wood: Submit certification by treating plant stating chemical

and process used and conformance with applicable standards.

1.05 QUALITY ASSURANCE

- A. Installation: Performed only by experienced skilled finish carpenters.
- B. Provide lumber factory marked with type, grade, mill and grading agency identification on concealed surfaces. Omit marking and submit mill certificates for materials to receive transparent finishes that cannot be marked on a concealed surface.
- C. Softwood Lumber: Grading rules and wood species shall conform with the voluntary Product Standards PS 20 including grading rules of the following associations, as applicable:
 - 1. Southern Pine: Standard Grading Rules for Southern Pine Lumber, published by Southern Pine Inspection Bureau (SPIB).
 - 2. Douglas Fir, Western Larch and Hemlock: Western Lumber Grading Rules, published by Western Wood Products Association (WWPA), Standard Grading and Dressing Rules for West Coast Lumber Inspection Bureau (WCLIB) or National Lumber Grades Authority (NLGA).
 - 3. Western Spruce, Pine and Fir: Western Spruce-Pine-Fir Association (WSPFA) and current Canadian Grading Rules by National Grades Association, Canada.
- D. Softwood Plywood: Grading rules and wood species shall conform with Product Standard PS 1.
- E. Grade Marks
 - 1. General: Identify all lumber and plywood by official grade mark.
 - 2. Lumber: Grade stamp to contain symbol of grading agency, mill number or name, grade of lumber, species or species grouping, or combination designation, rules under which graded, where applicable and condition of seasoning at time of manufacture.
 - 3. Softwood Plywood: Appropriate grade trademark of the American Plywood Association.
 - a. Type, grade, class and identification index.
 - b. Inspection and testing agency mark.
- F. Bench Mark: Construct full balcony deck; demonstrating construction, materials and general workmanship, including trim and flashing work.
 - 1. Approved bench mark will establish minimum standards of quality and workmanship for Architectural Woodwork.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Do not deliver materials until concrete, masonry and other similar wet work has been completed and is thoroughly dry, outside door openings are permanently

watertight, exterior windows are glazed and, in case of temperature dropping below 60 degrees F., until temporary heating and ventilating systems are in operation.

1. Do not store adhesives with materials that have a high capacity to absorb VOC emissions (i.e., materials which are woven, fibrous or porous in nature, such as acoustical ceilings, carpets, textiles, etc.).
 2. Do not store adhesives in occupied spaces.
- B. Protect finish carpentry during delivery, storage and handling to prevent damage, soiling and deterioration.
- C. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

1.07 PROJECT CONDITIONS

- A. Provide and maintain a constant temperature and humidity before, during and after installation as required to maintain optimum moisture content of installed materials.
- B. Obtain measurements and verify dimensions and details before proceeding with finish carpentry.
- C. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 PRODUCTS

2.01 SOFTWOOD LUMBER

- A. Species: Any commercial softwood.
1. Provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship":
- B. Moisture Content: Maximum 19% at time of manufacture.
1. Fire Retardant Treated Materials: Kiln-dry all materials after treatment to maximum 15% moisture content.
- C. Dimensions
1. Specified lumber dimensions are nominal unless otherwise indicated.

2. Actual dimensions conform to industry standards established by the American Lumber Standards Committee and the rules writing agencies.

D. Surfaces: Surface four sides (S4S) unless specified otherwise.

E. Grading: Construction grade.

2.02 SHEATHING

E. Plywood: Provide exterior grade plywood for exterior use. Formaldehyde free.

1. Concealed Use
 - a. Exterior: APA-CD-EXT.

E. OSB Panels (Oriented Strand Board): Conform to PS-2 and HUD/FHA Materials Bulletin 40C. Formaldehyde free.

1. Wall Sheathing
 - a. Exposure Durability Classification: Exposure 1.

2.03 WOOD DECKING

A. Exterior Wood Composite Decking and Cladding: Composite materials by the following manufacturers meeting the performance requirements specified and span conditions and design intent indicated on the drawings.

1. Manufacturers: Basis of Design: TIMBER TECH Terrain Collection.
2. Other Manufacturers: Products by other manufacturers will be considered during bidding. Products must meet the performance requirements specified, match colors selected as determined by the Architect, conform to details indicated on the drawings and be approved by Architect
3. Colors: As selected by Architect.
4. Size: As indicated
5. Texture:
6. Description: Composite plank consisting of high density polyethylene (HDPE) and wood flour, extruded into sizes and shapes indicated with the following physical properties
 - a. Specific Gravity: 1.2 g/cu. cm. when tested in accordance with ASTM D-792.
 - b. Flexural Properties when tested in accordance with ASTM D-6109: Solid Profiles
 - 1) Modulus of Elasticity (MOE): 542,200 psi.- Ultimate
 - 2) Modulus of Rupture (MOR): 3157 psi. - Ultimate
 - c. Hardness when tested in accordance with ASTM D-143: 225 lb
 - d. Water Absorption when tested in accordance with ASTM D-1037, %vol. <1.35%, %mass <1.29%.
 - e. Flame Spread Index when tested in accordance with ASTM E-84: 75

7. Concealed Fasteners: Hot dip galvanized steel, stainless steel, composite wood screws and clips of length and sizes recommended by composite wood manufacturer for profile being fastened.

2.04 PRESERVATIVE WOOD TREATMENT

- A. Preservative Treatment by Pressure Process: AWWPA U1; Use Category UC3b.
 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
 2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark each piece of treated lumber with AWPB Quality Mark designation denoting conformance to the appropriate specification.
 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
- D. Application: Treat items indicated on Drawings, and the following:
 1. Exterior wood nailers, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers.
 2. Exterior wood sleepers, blocking, furring, and similar concealed members in contact with masonry or concrete.

2.05 ACCESSORIES

- A. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.
 1. Adhesive shall have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

PART 3 EXECUTION

3.01 PREPARATION

- A. Condition carpentry materials and products to average prevailing humidity conditions in installation areas before installing.

- B. Install blocking and anchoring devices built into substrates for anchorage of finish carpentry items.
- C. Verify mechanical, electrical, and building items affecting this Section are placed and ready to receive this work.
- D. Verify field dimensions.

3.02 INSTALLATION

- A. Align and anchor blocking with countersunk bolts, washers, nuts, or nails, as applicable.
- B. Locate blocking to facilitate installation of finishing materials, fixtures, specialty items and trim.
- C. Preservative Treated Wood Products: Provide pressure treatment for all lumber and plywood as specified hereinbefore.

3.02 SHEATHING

- A. Wall Sheathing, Roof Sheathing and Subflooring: Provide where indicated. Comply with applicable recommendations contained in Form No. E30R "APA Engineered Wood Construction Guide", for types of plywood products and applications indicated.
 - 1. General
 - a. Install panels across supports, using panels continuous over two or more spans, with end joints staggered and located over center of supports. Provide 1/8" space at edges for expansion/contraction.
 - b. Nail at 6" on center along panel ends and 12" on center at intermediate supports.

3.04 CLEANING AND PROTECTION

- A. Repair damaged and defective finish carpentry materials to eliminate functional and visual defects. Where not possible to repair properly, replace finish carpentry as directed by the Architect.
- B. Protect installed work during remaining construction operations.
- C. Clean woodwork on exposed and semi-exposed surfaces. Touch-up shop applied finishes to restore damaged or soiled areas.

END OF SECTION

SECTION 07 27 19

PLASTIC SHEET AIR BARRIERS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide plastic film air barrier at exterior stud walls. Materials to bridge and seal the following air leakage pathways and gaps:
1. Connections of the walls to the roof air barrier or membrane.
 2. Connections of the walls to the foundation or structure.
 3. Expansion joints.
 4. Openings and penetrations of all window frames, storefront, curtain wall.
 5. Door frames.
 6. Piping, conduit, duct and similar penetrations.
 7. Masonry ties, screws, bolts and similar penetrations.
 8. All other air leakage pathways in the building envelope.

1.02 SUBMITTALS

- A. Product Data: Submit material Manufacturer's Product Data, material manufacturer's instructions for evaluating, preparing, and treating substrate, temperature and other limitations of installation conditions, Technical Data, and tested physical and performance properties.
- B. Submit manufacturer's instructions and details for installation over sheathing and related methods approved and recommended by air barrier manufacturer for Architects approval and comments. Details to include but not limited to:
1. Opening for windows, doors, storefronts, louvers and related openings.
 2. Penetrations
 3. Transitions
 4. Terminations
 5. Fastening methods and patterns
 6. Tapes and seaming.
- C. Compatibility: Submit letter from primary material manufacturer stating that materials proposed for use are permanently chemically compatible and adhesively compatible with adjacent materials proposed for use.

1.03 QUALITY CONTROL

- A. Pre-installation Conference: Conduct to review conditions and review installation requirements and all detailing.

1. Attendance is required by representatives of related trades including covering materials, substrate materials and adjacent materials.
- B. All tapes, fasteners and accessories to be approved by air barrier manufacturer for complete continuous assembly.
- C. Representative: Provide air barrier manufacturer representative to attend job site to inspect installation to verify compliance with manufacturer's standard installation requirements.

1.04 PROJECT CONDITIONS

- A. Do not install membrane air barriers until substrate construction and all penetrating items and features are completed.
- B. Sequencing. Do not install air barrier material before the roof assembly has been sufficiently installed to prevent a buildup of water in the interior of the building
- C. Field Conditions: Do not install air barrier in snow, rain, fog, or mist. Do not install air barrier when the temperature of substrate surfaces and surrounding air temperatures are below those recommended by the primary material manufacturer.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Flexible Plastic Sheet Air Barrier: Tyvek Commercial Wrap by DuPONT or equal by GLOBAL WRAP, STEGO, RAVEN INDUSTRIES or HENRY COMPANY meeting the following performance requirements:
 1. Air Penetration – ASTM E1677: Type I
 2. Water Vapor Transmission – ASTM E96 Method B: 200.
 3. Water Penetration Resistance – AATCC-127: >280.
 4. Tear Resistance – ASTM D882 Method A: 38/35.
 5. Surface Burning Characteristics – ASTM E84: Class A for flame spread and smoke developed.
 6. Water Vapor Transmission: ASTM E96-05 Method B (perms) 30
- B. Mechanical Fasteners, Flashings and Tape: Types as recommended by film manufacturer.
 1. Steel Frame Fasteners: Corrosion resistant, gasketed with washer in sufficient length(s).
 2. Wood Frame Fasteners: Corrosion resistant nail with plastic cap or plastic cap staple in sufficient length(s).
 3. Flashings and Tapes: Self adhering for substrates encountered.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are suitable prior to commencing work of this section. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Verify substrate is visibly dry.
- C. Ensure that the following conditions are met:
 - 1. Surfaces are sound, dry, even, and free of contaminants.
 - 2. Inspect surfaces to be smooth without large voids or sharp protrusions.
- D. Verify sealants are compatible with flexible sheet air barrier proposed for use.

3.02 INSTALLATION

- A. Install air barrier in a way that provides continuity throughout the building envelope. Install materials in accordance with manufacturer's instructions and the following (unless manufacturer requires other procedures in writing based on project conditions or particular requirements of their recommended materials):
 - 1. Install head flashing material over all doors, windows and similar openings which to be later covered by air barrier material for proper drainage of water away from the window.
 - 2. Install building wrap over sheathing board, rigid insulation or other fully-supported continuous substrates as per manufacturer's instructions.
 - 3. Ensure air barrier material is plum and level on foundation, and unroll extending over window and door openings.
 - 4. Ensure air barrier material is applied over back edge of weep screed for proper water drainage.
 - 5. Unroll the air barrier material with the printed side facing out, wrapping the entire building, including door and window openings.
 - 6. Attach into wood stud framing, through insulated sheathing board or into metal stud framing with plastic cap nails or fasteners specified by air barrier material manufacturer. The fasteners must penetrate the framing member a minimum of 1/2 inch on every vertical stud line.
 - 7. Fasteners need to be installed along every stud vertically and 12" or closer together as specified by the material manufacturer apart horizontally to maintain integrity of air barrier assembly to ensure the material is fastened to building when negative and positive pressures are exerted.
 - 8. Install with drainage plane surface pattern in horizontal position. Install lower level air barrier material ensuring the upper layers of air barrier material lap the bottom layer to ensure proper shingling and water drainage.
 - 9. Overlap at all corners of building by a minimum of 12 inches.
 - 10. Overlap vertical seams by a minimum of 6 inches.
 - 11. Prepare each window and door rough opening as recommended by the air barrier manufacturer or prepare by cutting a modified "I" pattern and

wrap excess material to the inside of the rough opening and fasten securely to a framing member. At the window header, make a 6 to 8 inch diagonal cut at the corners of the air barrier and fold the material up above the rough opening, exposing the underlying sheathing. If windows are already in place when installing air barriers, trim as close to them as possible and tape all edges with manufacturer approved sealant tape.

12. Detail remaining terminations and penetrations with accessory materials as per manufacturer's instructions for air leakage and ensuring lapping of the material for proper shingling and drainage of bulk water.
13. When the end of a roll is reached, fold the edge of the building wrap under itself and attach to the structural sheathing or through non-structural sheathing to the nearest framing member.
14. Tape all horizontal and vertical seams with manufacturer approved construction tape.
15. Seal top and bottom edges of rolled out material to substrate with manufacturer approved construction tape.
16. Seal all tears and cuts with manufacturer approved construction tape.

3.02 PROTECTION

- A. Protect installed air barrier from damage until installation of covering materials. Seal all cuts, punctures, and penetrations with tape.

END OF SECTION

SECTION 07 46 33

VINYL SIDING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide vinyl siding, corner board trim, window trim and miscellaneous trim as indicated on drawings or required for a complete installation. Provide 3 types as indicated.
 - 1. Vertical siding
 - 2. Board and batten profile.
 - 3. Sheets.

1.02 RELATED SECTIONS

- A. Air Barrier: Section 07 27 19.

1.03 REFERENCES

- A. ASTM: American Society for Testing and Materials.

1.04 SUBMITTALS

- A. Samples: Submit minimum 9" long by full width sample of siding showing finish, pattern, color, gage and profile.

1.05 HANDLING AND STORAGE

- A. Exercise care so as not to damage or deform material.
- B. Stack on platforms or pallets and cover to protect from weather.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Basis of Design:
 - 1. Horizontal Siding: CERTAINTEED Monogram Double 5" Rough Cedar Clapboard
 - a. Color: Granite Gray
 - 2. Board & Batten: CERTAINTEED. Single 7" Rough Cedar
 - a. Color: Granite Gray
 - 3. Sheet: CERTAINTEED. TrueTexture Woodgrain Smooth

- b. Color: Natural White
- 4. Other Manufacturers: Subject to compliance with requirements and an acceptable match, products by other manufacturers are acceptable.

2.02 SIDING AND TRIM

- A. General Requirements: Polyvinyl chloride products with the following characteristics:
 - 1. Siding: Comply with ASTM D 3679, Class 2.
 - 2. PVC cell classification in accordance with ASTM D 1784: 13334.
 - 3. Coefficient of linear expansion in accordance with ASTM D 696: .000029 inch per inch per degree F.
 - 4. Tensile strength when tested in accordance with ASTM D 638: Minimum 7,100 pounds per square inch.
 - 5. Modulus of elasticity when tested in accordance with ASTM D 638: Minimum 360,000 pounds per square inch, average.
 - 6. Izod impact, standard 1/8 inch bar when tested in accordance with ASTM D 256: 3.30 foot-pounds per inch, average.
 - 7. Shore D Hardness: Minimum 73.
 - 8. Specific Gravity: Minimum 1.39.
 - 9. Deflection temperature when tested in accordance with ASTM D 648: 170 degrees F, 264 pounds per square inch.
 - 10. Smoke density rating when tested in accordance with ASTM D 2843: 48 percent, average.
 - 11. Horizontal flammability, when tested in accordance with ASTM D 635:
 - a. Burn distance: 20 mm.
 - b. Burn time: Less than 5 seconds.
 - 12. Surface burning characteristics when tested in accordance with ASTM E 84: Flame spread less than 20, fuel contribution 0, smoke density 400.
 - 13. Fire Resistance - Siding: 1 hour, when tested in accordance with ASTM E 119, with siding applied over gypsum sheathing.
 - 14. Flammability - Siding: Comply with requirements of UBC Std 26-9.
- B. Corner Board Trim and Window Trim: Provide nominal 4" wide corner trim and window surrounds; materials per manufacturer's requirements.

PART 3 EXECUTION

3.01 INSPECTION

- A. Commencement of siding installation implies acceptance of the substrate as suitable to accept siding.

3.02 INSTALLATION

- A. Install in accordance with the latest edition of the "Rigid Vinyl Siding Application Manual", published by the Vinyl Siding Institute of the Society of the Plastics Industry, Inc.
- B. Provide "J -Blocks" at all siding areas where light fixtures, hose bibs, outlets and

similar type items occur.

3.03

CLEAN UP

- A. Clean all siding surfaces of dirt, grime, and other surface blemishes.
- B. Remove from the site all excess material, shipping packaging, debris and etc., related to the siding work.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide flashing and sheet metal work as shown and specified. Work includes:
 - 1. Flashing and counterflashing.
 - 2. Fasteners, sealants, solder and accessories to complete the work.

1.02 QUALITY ASSURANCE

- A. Comply with Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) "Architectural Sheet Metal Manual" recommendations for fabrication and installation of the work.
- B. Reference Standards
 - 1. American Society for Testing and Materials (ASTM).
 - 2. American Architectural Manufacturers Association (AAMA)
 - a. AAMA 2605; Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing High Performance Organic Coatings on Architectural Extrusions and Panels.
 - 3. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA):
 - a. SMACNA "Architectural Sheet Metal Manual".

1.03 SUBMITTALS

- A. Shop Drawings and Product Data: Submit on all sheet metal work specified herein. Drawings to show all expansion joint details, joint details, waterproof connections to adjoining work and at obstructions and penetrations, methods of attaching to building and all formed sections.
- B. Submit full width by 8" long samples of all manufactured and fabricated items. Provide with specified finish and color.

1.04 PROJECT CONDITIONS

- A. Do not proceed with the installation of flashing and sheet metal work until substrate construction, blocking and other construction to receive the work are completed.
 - 1. Metal roofing work is to follow progress of substrate as close as practical to limit exposure of insulation and wood materials.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Miscellaneous Flashing - Not Exposed to View: Galvanized steel, ASTM A653 G60. Mill phosphatized for paint adhesion. 0.0276". minimum unless otherwise indicated.
- B. Fasteners: Provide same metal as sheet metal or other non-corrosive compatible metal recommended by sheet metal manufacturer.
- C. Joint Sealants: See Section 07 92 00. Color matched to factory finished materials at roofing, cornice, fascia, coping and similar type systems.
- D. Metal accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of work; matching or compatible with material installed, non-corrosive, size and gage as required for performance.
- E. Underlayment
 - 1. Membrane: Bituthene Ice and Water Shield by W. R. GRACE; Polyken 640 Underlayment Membrane by POLYKEN TECHNOLOGIES; Polyguard Deck Guard by POLYGUARD PRODUCTS; Weather Watch by GAF; Winterguard by CERTAINTEED, a modified bituminous membrane, minimum 40 mils thick, self-adhering, self-sealing moisture barrier.
 - 2. Slip sheet: 4 lb./100 sq. ft., rosin-sized building paper.
- L. Wood members: Comply with requirements of Rough Carpentry, Section 06 10 00.

2.03 FABRICATION

- A. Shop fabricate sheet metal work to comply with standard industry standards as shown by SMACNA in the "Architectural Sheet Metal Manual."
- B. Form sections square, true and accurate to size and profile, free from distortion and other defects detrimental to appearance or performance.
 - 1. Make all lines, edges, angles and moldings straight, sharp and true; reinforce for rigidity and strength.
- C. Fabricate for watertight and weatherproof performance with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form exposed sheet metal work with exposed edges folded back to form hems.
 - 1. Fabricate with seams overlapping in the direction of water flow.
- D. Fabricate non-moving seams in sheet metal with flat lock or butt hairline joints

except as otherwise indicated. Fabricate corners mitered, soldered and sealed as one piece. Locate corner joints 2'-0" from corners and intersections.

- E. Seal movable non-expansion type joints with joint sealant. Form joints as indicated, when not indicated, in compliance with industry standards to receive joint sealants.
- F. Provide for separation of metal from non-compatible or corrosive substrates by coating concealed surfaces with bituminous coating or other permanent separation as recommended by the sheet metal manufacturer.

PART 3 EXECUTION

3.01 PREPARATION

- A. Examine substrates and installation conditions. Do not install flashing and sheet metal work until unsatisfactory conditions have been corrected.
- B. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.
- C. Coordinate flashing and sheet metal work with other work for the correct sequencing of items which make up the entire membrane or system of weatherproofing and rain drainage.

3.02 INSTALLATION

- A. Comply with SMACNA "Architectural Sheet Metal Manual" recommendations, and drawing details for installation of the work.
- B. Install prefabricated items in accordance with manufacturer's instructions and recommendations.
- C. Anchor units securely in place by methods indicated, providing for thermal expansion. Conceal fasteners and expansion provisions whenever possible. Install joint sealants where indicated.
- D. Set units true to lines and levels indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 GENERAL

1.01 SCOPE

- A. General: Prepare joints and apply sealant at all locations which normally require sealing to prevent infiltration of air, water, and insects and to reduce transmission of sound.
- B. Apply sealants to exterior and interior non-static joints. Do not seal normal drainage points or weep holes. Include the following:
 - 1. around exterior trim, door and other penetrations or openings in exterior walls
 - 2. joints between different wall materials and flashings
 - 3. termination joints between wall materials and adjacent materials
 - 4. other applications indicated
- C. Sealing of all exterior locations where materials or equipment do not fit together or against the adjoining surface with a hairline joint.

1.02 GENERAL PERFORMANCE

- A. Except as otherwise indicated, joint sealant is required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application.
- B. Failures of installed sealant to comply with this requirement will be recognized as failures of both materials and workmanship.

1.03 SUBMITTALS

- A. Submit manufacturer's product data and installation instructions.
 - 1. Certification, in the form of manufacturer's standard data sheet or by letter, stating that each type of compound and sealant to be furnished complies with these specifications.
 - 2. Statement that each product to be furnished is recommended for the application shown and is compatible with all materials to which applied.
 - 3. Instructions for handling, storage, mixing, priming, installation, curing and protection for each type of sealant.
- B. Submit manufacturer's color chart for color selections.

- C. Submit cured sealant samples in colors required for the work. Architect's approval will be for color only. Compliance with other requirements is the Contractor's responsibility.

1.05 STORAGE AND HANDLING

- A. Prevent inclusion of foreign matter or the damage of materials by water or breakage.
- B. Procure and store in original containers until ready for use.
- C. Materials showing evidence of damage shall be rejected.

1.06 WARRANTY

- A. Installer's Warranty: Contractor and joint sealant applicator shall jointly warranty joint sealant work for two (2) years from date of final acceptance. Warranty shall include replacing joints which fail to perform as airtight; or fail in adhesion, cohesion, abrasion resistance, weather resistance, extrusion resistance, migration and stain resistance, general durability or any other form of apparent deterioration (excluding inherent qualities and limitations clearly specified in the manufacturer's submitted product data).
- B. 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 for ten (10) years from date of final acceptance
- C. Warranties specified in this article exclude deterioration or failure of joint sealants from the following:
 - 1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 - 3. Mechanical damage caused by individuals, tools, or other outside agents.
- C. Comply with these specifications for repair or replacement of work.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Definition: The term "sealant" will be understood to be an elastomeric type. The term "caulk" will be understood to be a synthetic resin base of highest quality acrylic latex compound.

- B. General
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. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Architectural Sealants: 250 g/L.
 - b. Sealant Primers for Nonporous Substrates: 250 g/L.
 - c. Sealant Primers for Porous Substrates: 775 g/L.
 3. Colors: As selected by Architect from manufacturer's full range; selected colors to match adjacent materials.
- C. Manufacturers: BOSTIK; DOW CORNING CORPORATION; EUCLID CHEMICAL; TREMCO MANUFACTURING COMPANY; GENERAL ELECTRIC COMPANY/MOMENTIVE; SIKA CHEMICAL CO.; MAMECO INTERNATIONAL; BASF BUILDING SYSTEMS; VULCHEM.
1. Manufacturer's listed under the following applications are for basis of design. Equal products by above listed manufacturers are acceptable.
- D. Exterior Vertical and Overhead Joints: Single-component neutral curing silicone sealant meeting ASTM C920, Type S, Grade NS, Class 50.
1. DOW 791
 2. GE SCS9000 Silpruf NB
 3. TREMCO Spectrum 2
 4. PECORA 895 NST

2.02 ACCESSORIES

- A. Joint Primer/Sealer: Non-staining type, recommended by sealant manufacturer; compatible with joint forming material.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming material.
- C. Bond Breaker Tape: Pressure sensitive polyethylene or plastic tape, recommended by sealant manufacturer, to suit applications where bond to substrate should be avoided for proper joint sealant performance.
- D. Joint Backing: Compressible rod stock conforming to ASTM C1330, Type B; material 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
- E. Solvents: Cleaning agent recommended by the manufacturer of the sealant in

writing to Architect.

PART 3 EXECUTION

3.01 INSPECTION

A. Pre-Installation Meeting

1. Prior to sealant installation, and at the Contractor's direction, meet at project site to review material selections, joint preparations, installation procedures, weather conditions and coordination with other trades.
2. Include sealant installer, Contractor, Architect, manufacturer's representative and representatives of other trades or subcontractors affected by the sealant installation.

B. Examine substrates and installation conditions. Do not proceed with joint sealant work until unsatisfactory conditions have been corrected.

C. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.02 PREPARATION

A. Clean, seal and prime surfaces in accordance with manufacturer's recommendations. Confine primer/sealant to areas of sealant bond.

B. Remove dust, dirt, loose coatings, moisture and other substances which could interfere with sealant bond.

C. Remove lacquers and protective films from metal surfaces.

D. Architectural Concrete and Stone: Apply masking around joints to protect adjacent surfaces from defacement and staining during sealing operations. Repair damaged masking until sealant is installed.

3.03 INSTALLATION

A. Apply joint sealant as late as possible in construction, preceding painting and following cleaning operations. Do not apply sealant during inclement weather conditions or when temperature is above or below manufacturer's limitations for installation.

B. Install joint sealant materials and accessories in strict accordance with manufacturer's installation instructions.

C. Set joint filler units at depth or position in joint as indicated to coordinate with other work. Do not leave voids or gaps between ends of joint filler units.

D. Install sealant backer rod, except where recommended to be omitted by sealant manufacturer for application indicated. Use rod diameter that will cause

compression when installed.

- E. Install bond breaker tape and where required by manufacturer's recommendations to ensure that sealants will perform as intended.
- F. Apply joint sealants in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of joint bond surfaces on both sides. Fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. At horizontal joints between a horizontal surface and vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt. Hand tool and finish all joints.
- G. Install joint sealants within recommended temperature ranges and to depths indicated or when not indicated, as recommended by sealant manufacturer. For normal moving vertical and horizontal joints, fill joints to a depth equal to 50% of joint width, but not more than 1/2" deep nor less than 1/4" deep, measured at the center section of bead.
- H. Confine materials to joint areas with masking tapes or other acceptable methods. Remove excess sealant materials promptly as work progresses and clean adjoining surfaces.

3.04 CLEANING

- A. Upon completion, remove and dispose of masking materials; remove all excess sealing materials; clean adjacent materials of all soil and stain resulting from sealing operations.
 - 1. Replace damaged material and material which cannot be properly cleaned.

END OF SECTION

SECTION 10 73 13

AWNINGS

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Provide awning cover as indicated on drawings. Reuse existing frame.

1.02 SUBMITTALS

- A. Shop Drawings: Submit manufacturer's product data and layout drawings.
 - 1. Include engineering calculations showing wind load requirements of the local Building Department and include fastener and erection details, signed and sealed by the qualified professional engineer responsible for their preparation.
- B. Color Samples: Submit for selection.

1.03 QUALITY ASSURANCE

- A. Have been in continuous operation as a professional fabric awning manufacturer for a minimum of ten (10) years prior to this contract.
- B. Welder Qualifications: The personnel manufacturing the metal awning frames must certified welders.

1.04 WARRANTY

- A. Provide manufacturer's five (5) year warranty against failure of frame materials and failure or fading of fabric.

PART 2 PRODUCTS

2.01 AWNING

- A. Type: Stationary standard, with fabric covered top, front and sides.
- B. Frame: Reuse existing.
- C. Fabric: Vinyl laminated polyester. Consisting of vinyl top and bottom layers with woven polyester scrim middle layer.
 - 1. Weight: Minimum 14 ounce per square yard.
 - 2. Provide flame resistant.

3. Colors/Pattern: As selected by Architect.
 4. Seams: No horizontal seams permitted within sloped surface of awning.
- D. Manufacturer: Subject to the specified requirements, products manufactured by CAPITAL CITY AWNING; GLAWE MFG. CO. or THE ASTRUP CO. are acceptable.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Field verify all conditions and dimensions prior to fabrication.
- B. Install in accordance with manufacturer's instructions and approved shop drawings.

END OF SECTION



4 - ELEVATION



2 - ELEVATION



3 - ELEVATION



1 - ELEVATION

GENERAL NOTES BUILDING EXTERIOR

- A. AT ALL BUILDINGS; EXISTING ASPHALT SHINGLE ROOFS, GUTTERS, AND DOWNSPOUTS TO REMAIN, TYP.
- B. AT ALL BUILDINGS, EXISTING BRICK TO REMAIN. UNO.
- C. AT ALL BUILDINGS, EXISTING VINYL WINDOW SYSTEM TO REMAIN, TYP.
- D. AT ALL BUILDINGS, EXISTING DOOR SYSTEM TO REMIAN.

CODED NOTES BUILDING EXTERIOR

1. REMOVE EXISTING SIDING AND REPLACE WITH BOARD AND BATTEN SIDING.
2. REPLACE EXISTING SIDING WITH NEW VINYL SIDING (HORIZONTAL), ENTIRE BUILDING.
3. REPLACE CANVAS CANOPY. FRAMING TO REMAIN.
4. REMOVE EXISTING SIDING AND INSTALL CULTURED STONE IN THIS AREA UPTO SLOPING SILL.
5. EXISTING BRICK TO REMAIN.
6. REMOVE EXISTING WOOD BALCONY DECK AND RAILING, TYPICAL ENTIRE BUILDING.
7. NOT USED.
8. PAINT METAL COPING.
9. EXISTING ASPHALT SHINGLE ROOF TO REMAIN, TYP.
10. EXISTING GUTTER & DOWNSPOUT SYSTEM TO REMAIN, TYP.
11. EXISTING BRICK TO REMAIN. CLEAN ANY GRAFFITTI, TYP.
12. EXISTING WINDOW SYSTEM TO REMAIN, TYP.
13. EXISTING BALCONY DOORS TO REMAIN.
14. INSTALL CULTURED STONE UP TO 3'-0" AFF AROUND BUILDING.
15. EXISTING STOREFRONT SYSTEM. BOTH SIDES OF BUILDING.



BUILDING R
SG-01

Project No. - 14090.08
05/30/2018
CONSTRUCTION
DOCUMENTS

SUGAR GROVE BALCONY & FACADE IMPROVEMENTS
530 S STATE STREET
WESTERVILLE, OH 43081

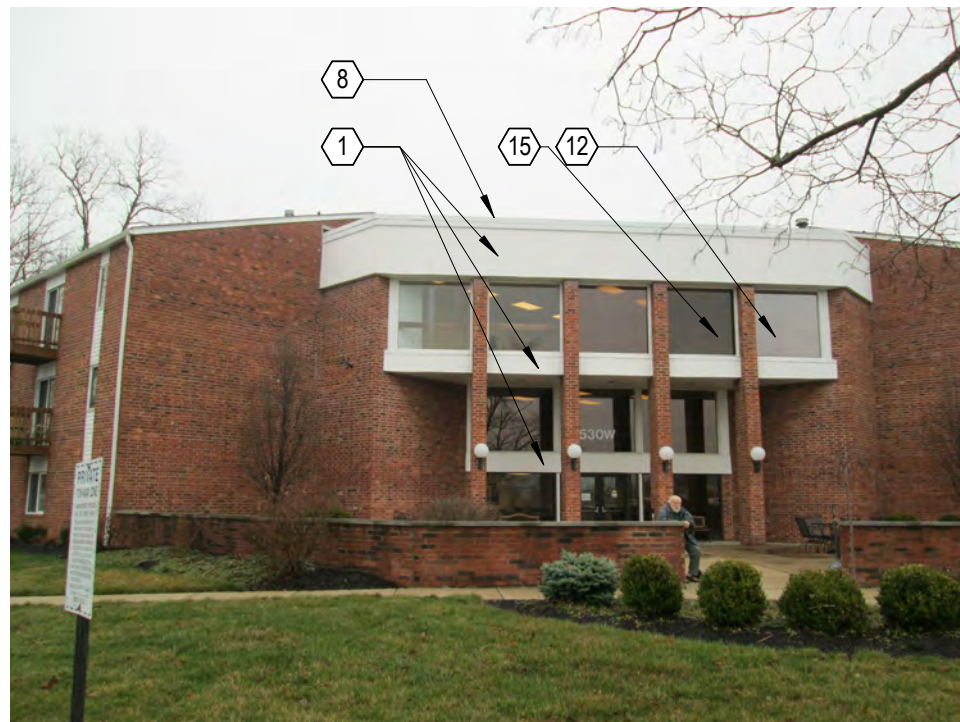




4 - ELEVATION



2 - ELEVATION



3 - ELEVATION



1 - ELEVATION

GENERAL NOTES BUILDING EXTERIOR

- A. AT ALL BUILDINGS; EXISTING ASPHALT SHINGLE ROOFS, GUTTERS, AND DOWNSPOUTS TO REMAIN, TYP.
- B. AT ALL BUILDINGS, EXISTING BRICK TO REMAIN. UNO.
- C. AT ALL BUILDINGS, EXISTING VINYL WINDOW SYSTEM TO REMAIN, TYP.
- D. AT ALL BUILDINGS, EXISTING DOOR SYSTEM TO REMIAN.

CODED NOTES BUILDING EXTERIOR

- 1. REMOVE EXISTING SIDING AND REPLACE WITH BOARD AND BATTEN SIDING.
- 2. REPLACE EXISTING SIDING WITH NEW VINYL SIDING (HORIZONTAL), ENTIRE BUILDING.
- 3. REPLACE CANVAS CANOPY. FRAMING TO REMAIN.
- 4. REMOVE EXISTING SIDING AND INSTALL CULTURED STONE IN THIS AREA UPTO SLOPING SILL.
- 5. EXISTING BRICK TO REMAIN.
- 6. REMOVE EXISTING WOOD BALCONY DECK AND RAILING, TYPICAL ENTIRE BUILDING.
- 7. NOT USED.
- 8. PAINT METAL COPING.
- 9. EXISTING ASPHALT SHINGLE ROOF TO REMAIN, TYP.
- 10. EXISTING GUTTER & DOWNSPOUT SYSTEM TO REMAIN, TYP.
- 11. EXISTING BRICK TO REMAIN. CLEAN ANY GRAFFITTI, TYP.
- 12. EXISTING WINDOW SYSTEM TO REMAIN, TYP.
- 13. EXISTING BALCONY DOORS TO REMAIN.
- 14. INSTALL CULTURED STONE UP TO 3'-0" AFF AROUND BUILDING.
- 15. EXISTING STOREFRONT SYSTEM. BOTH SIDES OF BUILDING.



BUILDING A
SG-02

Project No. - 14090.08
05/30/2018
CONSTRUCTION
DOCUMENTS

SUGAR GROVE BALCONY & FACADE IMPROVEMENTS
530 S STATE STREET
WESTERVILLE, OH 43081



COLUMBUS METROPOLITAN HOUSING AUTHORITY
COMMUNITY. COMMITMENT. COLLABORATION.

GENERAL NOTES BUILDING EXTERIOR

- A. AT ALL BUILDINGS; EXISTING ASPHALT SHINGLE ROOFS, GUTTERS, AND DOWNSPOUTS TO REMAIN, TYP.
- B. AT ALL BUILDINGS, EXISTING BRICK TO REMAIN. UNO.
- C. AT ALL BUILDINGS, EXISTING VINYL WINDOW SYSTEM TO REMAIN, TYP.
- D. AT ALL BUILDINGS, EXISTING DOOR SYSTEM TO REMIAN.

CODED NOTES BUILDING EXTERIOR

1. REMOVE EXISTING SIDING AND REPLACE WITH BOARD AND BATTEN SIDING.
2. REPLACE EXISTING SIDING WITH NEW VINYL SIDING (HORIZONTAL), ENTIRE BUILDING.
3. REPLACE CANVAS CANOPY. FRAMING TO REMAIN.
4. REMOVE EXISTING SIDING AND INSTALL CULTURED STONE IN THIS AREA UPTO SLOPING SILL.
5. EXISTING BRICK TO REMAIN.
6. REMOVE EXISTING WOOD BALCONY DECK AND RAILING, TYPICAL ENTIRE BUILDING.
7. NOT USED.
8. PAINT METAL COPING.
9. EXISTING ASPHALT SHINGLE ROOF TO REMAIN, TYP.
10. EXISTING GUTTER & DOWNSPOUT SYSTEM TO REMAIN, TYP.
11. EXISTING BRICK TO REMAIN. CLEAN ANY GRAFFITTI, TYP.
12. EXISTING WINDOW SYSTEM TO REMAIN, TYP.
13. EXISTING BALCONY DOORS TO REMAIN.
14. INSTALL CULTURED STONE UP TO 3'-0" AFF AROUND BUILDING.
15. EXISTING STOREFRONT SYSTEM. BOTH SIDES OF BUILDING.

4 - ELEVATION



3 - ELEVATION



2 - ELEVATION



1 - ELEVATION



BUILDING B AND R
SG-03

Project No. - 14090.08
05/30/2018
CONSTRUCTION
DOCUMENTS

SUGAR GROVE BALCONY & FACADE IMPROVEMENTS
530 S STATE STREET
WESTERVILLE, OH 43081

