STOCKTON UNIVERSITY

PROPOSED WHITE BOX FIT-OUT
RESIDENTIAL COMPLEX
3701 Boardwalk
Atlantic City, New Jersey

Technical Specifications

INDEX OF SPECIFICATIONS

REFER TO MEP FA/FP DRAWINGS FOR ASSOCIATED TECHNICAL SPECIFICATIONS

SECTION 01 00 00

GENERAL REQUIREMENTS

1.0 **DESCRIPTION:** Work included in this project shall be for the

PROPOSED WHITE BOX FIT-OUT
RESIDENTIAL COMPLEX
STOCKTON UNIVERSITY

1.1 **LOCATION: STOCKTON UNIVERSITY, 3701 BOARDWALK, ATLANTIC CITY, NJ**

1.2 **If there are any conflicts in the specifications the University's General Conditions would take precedence.**

2.0 **CONTRACTOR'S RESPONSIBILITY:**

2.1 **Once the project has been awarded, the General Contractor, his employees including subcontractors and their employees will each be required to coordinate with the Facility of Planning and Construction of Stockton University to gain access to the site and before the start of any work.**

2.2 Verify all measurements and conditions in the field.

2.3 Before starting work, examine all adjoining work on which the work of these specifications depends. Perform corrective work to all existing conditions necessary to make these specifications perform in all respects.

2.4 **APPLICABLE DOCUMENTS:** Publications, specifications and standards listed in this Specification form a part of the Specification to the extent indicated by the reference thereto. Unless otherwise indicated, the issue of effect on the date of issuing the Invitation for bids shall apply.

2.5 **PROGRESS CHART:** Within ten (10) days of the receipt of Notice to Proceed and prior to commencement of work, the Contractor shall submit and receive approval for a Progress Chart indicating the planned starting and completion dates for all work items.

2.6 **PRICE SCHEDULE:** Along with the Progress Chart, the Contractor shall submit a price schedule for each work item, indicating his breakdown for labor, material, and equipment. Definitions applying are as follows:

2.6.1 **LABOR COST:** Direct labor wages and benefits, labor insurance, supervisory labor, small hand tools chargeable to labor, prorated cost of job expenses such as field office and telephone, prorated percentage of general (main office) overhead and percentage of profit.

2.6.2 **MATERIAL COST:** Direct material costs delivered to the site, prorated percentage of job expenses, general overhead, and profit.

2.6.3 **EQUIPMENT COST:** Plant and equipment charges, prorated percentage of job expenses, general overhead, and profit.

2.7 **INTENT OF DRAWINGS AND SPECIFICATIONS:** The intent of the drawings and specifications is to provide for the completion of the work in every detail that is described therein. The Contractor shall furnish all labor; materials, equipment, tools, transportation, and necessary supplies such as may be reasonably required to complete the work in accordance with the drawings.

2.8 **REPAIR OF EXISTING WORK:** The work shall be carefully laid out in advance. Where cutting or patching surfaces is necessary for proper installation, the work shall be carefully done by skilled mechanics. Any damage to the building or equipment caused by the Contractor shall be repaired by skilled mechanics of the trades involved, at no additional costs to the Owner. The Contractor shall patch and refinish all damaged surfaces caused by this work so as to match adjacent surfaces in material, texture, and color to the satisfaction of the Architect.

2.9 **MATERIALS APPROVED:**

2.9.1 Catalog cuts and other information shall be submitted by the Contractor as required herein and as necessary to secure approval of the material and methods to be incorporated into the work.

2.9.2 Four (4) copies of catalogs and other printed information shall be submitted. One (1) copy of printed matter will be returned to the Contractor for his use.

2.9.3 All submittals shall be made using the "Shop Drawing/Material Approval Request" form. Submittals shall be numbered sequentially and shall include the information required.

2.9.4 Within ten (10) days after receipt of Notice to Proceed, the Contractor shall submit a submittals log indicating all required submittals and dates to be submitted.

3.0 **METHODS OF MATERIAL QUALIFICATION:**

3.0.1 Each material and product can be incorporated into the work and shall conform to the specifications. The Contractor may use any of the following methods to demonstrate compliance with the specifications except as otherwise required.

3.0.2 Certificates of Compliance with specification requirements signed by an authorized officer of the manufacturer, processor or approved trade association involved. Such certificates shall show the name and address of the Contractor and the name and location of the project.

3.0.3 All materials shall be installed as per manufacturer guide specifications.

3.0.4 Labeling by the manufacturer on unbroken and unopened containers.

3.0.5 Official marking or labeling by recognized grading organization or national code association indicating compliance.

3.1 **DELIVERY, STORAGE, AND HANDLINGS:**

3.1.1 Deliver materials to the job site in the manufacturer's sealed and undamaged containers or wrappings.

3.1.2 Each product delivered shall be identified with the manufacture's name, date of manufacture, lot name and trade name.

3.1.3 Store materials up off the ground under cover, protected from weather and construction activities.

3.1.4 The Contractor shall store all material on the job site at his own risk. The Owner will not be responsible for any lost material.

3.2 **PRECONSTRUCTION MEETING:** A preconstruction meeting is required and will be arranged for some convenient date after contract award, but before the start of site work.

4.0 **INSPECTION:** The Contractor shall keep the Architect fully informed of contract operations and plans so that he may arrange to be present at various times when work is being performed.

5.0 **HOURS OF WORK:** All construction operations shall be performed between the hours of 8:00 a.m. and 4:30 p.m. local time, Monday through Friday inclusive, pending approved schedule by owner. If the Contractor desires to carry on work outside of these hours, he shall submit an application to the Owner for approval at least seventy-two (72) hours in advance. No such work outside the regular hours established above shall be undertaken without approval of the Owner and at no additional cost to the Owner.

6.0 **UTILITIES:** Electricity and water, as available, will be furnished by the Owner for construction purposes at no cost, provided that these utilities are not overloaded.

7.0 **TEMPORARY TOILET FACILITIES:** Shall be provided and maintained by the Contractor.

8.0 **REMOVAL:** All material and debris removed shall become the property of the Contractor and shall be removed from the site during and after the work. Debris and waste material shall not be discharged into surrounding area. None of the materials being removed may be reused, except as noted on the drawings. All debris removed shall be properly disposed of in approved sites.

9.0 **SAFETY BARRICADE:** Provide steel tubular scaffold system with 3" thick wood boards to allow a protected route of travel from all exits. Protective scaffolding shall extend a minimum of 8' from face of building; provide construction fencing around site – 6' high chain link.

10.0 **MANUFACTURER'S REPRESENTATIVE'S RESPONSIBILITIES:**

10.0.1 Keeping the Architect informed on a periodic basis as to the progress and quality of the work.

10.0.2 Calling to the attention of the Contractor those matters which he considers to be in violation of the contract requirements.

10.0.3 Reporting to the Architect any failure or refusal of the Contractor to correct unacceptable practices.

10.0.4 Conducting preliminary and subsequent job site meetings with the Contractor's official job representative.

10.0.5 Rendering any other inspection services which the Architect may designate.

10.0.6 Inspecting, after completion of work, the extent to which the Contractor has complied with these specifications.

10.0.7 The presence and activities of the manufacturers and the Architect shall in no way relieve the Contractor of his contractual responsibilities.

11.0 **TEMPORARY TRAILERS:** Not required.

12.0 **ENCLOSURES AND FENCING:** Not required.

13.0 **WORK PERFORMED:** The General Contractor shall certify that a minimum of 25% of the work shall be performed by his direct staff, not sub-contractors.

END OF SECTION

SECTION 01 10 00

SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contract description.

B. Work by Owner.

C. Contractor's use of site and premises.

D. Work sequence.

E. Owner occupancy.

F. Specification Conventions.

1.2 CONTRACT DESCRIPTION

A. The work to be performed under this project includes, but is not limited to;
   1. **Building** - the removal and replacement of the existing walls, ceilings, finishes. Etc. Along with the installation of new walls, doors, frames, concrete slabs, finishes, restrooms etc.
   2. **Electrical** - the relocation of existing electrical panels, transformers, etc. To dedicated electrical rooms. The removal, relocation, and modification of existing, and the installation of proposed receptacles, switches, lighting, etc. to suit the new layout.
   3. **Fire** - the removal, relocation, and modification of existing, and the installation of proposed fire alarm devices, sprinkler heads, etc. to suit the new layout.
   4. **Mechanical** - the removal, relocation, and modification of existing, and the installation of proposed HVAC units, ductwork, diffusers, thermostats, etc. to suit the new layout.
   5. **Plumbing** - the installation of new water closets, lavatories, sinks, etc., tied to exiting water, sanitary, and vent piping.
   6. **See construction drawings for entire scope of work.**

B. Perform Work of Contract under fixed cost contract with Owner in accordance with Conditions of Contract.

1.3 WORK BY OWNER

A. Work under this contract includes:
   1. See construction drawings for a list of work by Owner.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

A. Limit use of site and premises to allow:
   1. Owner occupancy.
   2. Work by Others.
   3. Use of site and premises by the public.

B. Emergency Building Exits during Construction.

1.5 WORK SEQUENCE

A. Construct Work in phases to accommodate Owner's occupancy requirements during construction period, coordinate construction schedule and operations with Owner.

1.6 OWNER OCCUPANCY

A. The Owner will occupy the premises during the entire period of the construction phase of construction.

B. Cooperate with Owner to minimize conflict, and to facilitate Owner's operations.

C. Schedule the Work to accommodate Owner occupancy.

1.7 SPECIFICATION CONVENTIONS

A. These specifications are written in imperative mood and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words “shall be” are included by inference where a colon (:) is used within sentences or phrases.

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cash allowances.

B. Contingency allowances.

C. Testing and inspection allowances.

D. Schedule of values.

E. Applications for payment.

F. Change procedures.

G. Defect assessment.

H. Unit prices.

I. Alternates.

1.2 CASH ALLOWANCES – FOR PERMITS

A. All Permit fees are by owner

B. All monies not used for permits shall be credited to the Owner as part of the last application for payment.

C. Differences in costs will be adjusted by Change Order.

D. Allowances Schedule: check bid schedule and other sections of the specification.

1.3 CONTINGENCY ALLOWANCES

A. Include in the Base Bid Contract, a stipulated sum/price, as indicated in Specification Section 01 21 00 “Allowances” for use upon Owner's instruction for unforeseen items. Any unused funds are to be credited back to the owner.

B. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Contingency Allowance.

C. Funds will be drawn from Contingency Allowance only by Change Order.

D. At closeout of Contract, funds remaining in Contingency Allowance will be credited to Owner by Change Order.

1.4 TESTING AND INSPECTION ALLOWANCES

A. Provided by owner except as noted in other sections of the specification.

B. Differences in cost will be adjusted by Change Order.

1.5 SCHEDULE OF VALUES

A. Submit printed schedule on AIA Form G703 - Continuation Sheet for G702 standard form.

B. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement established in Notice to Proceed.

C. Format: Utilize Table of Contents of this Project Manual. Identify each line item with number and title of major specification Section. Identify site mobilization, bonds and insurance, close out, and separate lines for material and labor where applicable.

D. Include in each line item, amount of Allowances specified in this section. For unit cost Allowances, identify quantities taken from Contract Documents multiplied by unit cost to achieve total for each item.

E. Include separately from each line item, direct proportional amount of Contractor's overhead and profit.

F. Revise schedule to list approved Change Orders, with each Application for Payment.

1.6 APPLICATIONS FOR PAYMENT

A. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
   1. List of subcontractors.
   2. Schedule of Values.
   3. Contractor’s Construction Schedule.
   4. Products list.
   5. Schedule of unit prices.
   6. Submittals Schedule.
   7. List of Contractor’s staff assignments.
   8. List of Contractor’s principal consultants.
   9. Copies of building permits.
   10. Initial progress report.
   11. Certificate of insurance and insurance policies.
   12. Performance and payment bonds.

B. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
   1. Evidence of completion of Project closeout requirements.
   2. Completion of punchlist items.
   3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
   4. Updated final statement, accounting for final changes to the Contract Sum.
   5. Transmittal of required Project Construction records to the Owner.
   6. Removal of temporary facilities, services, surplus materials, debris, etc.
   7. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
   8. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
   9. AIA Document G707, "Consent of Surety to Final Payment."
   10. Evidence that claims have been settled.
   11. Original County Voucher form marked "Final Payment".
   12. Final, liquidated damages settlement statement.
   13. Prevailing Wage Rate Statement.
   14. One (1) year 100% Maintenance Bond.
   15. All Operation and Maintenance Manuals, Warrantees and Guarantees.

C. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

D. Submit updated monthly construction schedule with each Application for Payment.

E. Payment Period: Submit at intervals stipulated in the Agreement.

F. Submit with transmittal letter as specified for Submittals in Section 01 33 00 - Submittal Procedures.

G. Substantiating Data: When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
   1. Current construction photographs.
   2. Partial release of liens from major subcontractors and vendors.
   3. Record documents for review by Owner which will be returned to Contractor.
   4. Affidavits attesting to off-site stored products.
   5. Construction progress schedules revised and current as specified.

H. The application for payment shall be used by the Owner as a guide for payments based on work completed, with no deviations once payments have started.

1.7 CHANGE PROCEDURES

A. Submittals: Submit name of individual authorized to receive change documents and be responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. The Architect/Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on AIA Form G710.

C. The Architect/Engineer may issue a Notice of Change including a detailed description of proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with stipulation of overtime work required and the period of time during which the requested price will be considered valid]. Contractor will prepare and submit estimate within ten days.

D. Contractor may propose changes by submitting a request for change to Architect/Engineer, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum/Price and Contract Time with full documentation [and a statement describing effect on Work by separate or other Contractors]. Document requested substitutions in accordance with specification.

E. Stipulated Sum/Price Change Order: Based on Notice of Change and Contractor's fixed price quotation or Contractor's request for Change Order as approved by Architect/Engineer.

F. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on fixed unit price basis. For unit costs or quantities of units of work, which are not pre-determined, execute Work under Construction Change Directive. Work Directive Change. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.

G. Construction Change Directive Work Directive Change: Architect/Engineer may issue directive, on AIA Form G713 Construction Change Directive signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

H. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Architect/Engineer will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.

I. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.

J. Document each quotation for change in cost or time with sufficient data to allow evaluation of quotation.

K. Change Order Forms: AIA G701 Change Order.

L. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

M. Correlation of Contractor Submittals:
1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
2. Promptly revise progress schedules to reflect change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
3. Promptly enter changes in Project Record Documents.
4. See General Conditions and Supplementary General Conditions of the Contract for Construction for further information on 1%-line item for Close Out Documentation, and Overhead, Profit and Bonding

1.8 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

B. If, in the opinion of the Architect/Engineer it is not practical to remove and replace the Work, the Architect/Engineer will direct appropriate remedy or adjust payment.

C. The defective Work may remain, but unit sum/price will be 50 percent at discretion of Architect/Engineer.

D. Defective Work will be partially repaired to instructions of Architect/Engineer and unit sum/price will be reduced 50 percent at discretion of Architect/Engineer.

E. Individual specification sections may modify these options or may identify specific formula or percentage sum/price reduction.

F. Authority of Architect/Engineer to assess defects and identify payment adjustments, is final.

G. Non-Payment for Rejected Products: Payment will not be made for rejected products for any of the following:
1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.9 UNIT PRICES:
1. Not Applicable.

1.10 ALTERNATES
1. Refer specification section 01 23 00.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.

1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. Lump-sum allowances.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

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

1.6 LUMP-SUM, UNIT-COST AND QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner under allowance and shall include freight, and delivery to Project site. Do not include taxes.

B. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and not part of the allowance.

1.7 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted. Re-stocking charges will be credited to the Contractor only upon submission to the Architect of written documentation on material supplier’s invoice or letterhead evidencing amount charged.

1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

3.3 SCHEDULE OF ALLOWANCES

A. Allowance AL-1: Contingency Allowance: The Contractor shall include Twenty-Five Thousand Dollars ($25,000.00) in its base bid to address unforeseen conditions and / or minor

scope adjustments that may be encountered or arise during the project. No work shall be billed against the Allowance without prior written approval from the Owner and the Contractor is obligated to substantiate in detail costs incurred for allowance work. Unused portions of this allowance shall be credited back to the owner against the Lump Sum Bid Amount at the completion of the project.

END OF SECTION

SECTION 01 23 00

ALTERNATES

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division Specifications Sections, apply to this section.

1.2 SECTION INCLUDES

A. Administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
   1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into project.
   1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if Alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A schedule of Alternates is included at the end of this section. Specification sections reference in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 PRODUCTS

2.1 NOT USED.

PART 3 EXECUTION

3.1 SCHEDULE OF ALTERNATES

<u>Alternate No. 1</u> – Retail Space "D" Add Alternate:

State the amount, on the bid proposal form, to be added to the base bid if all work associated with retail space "D" is added to the projects scope of work.

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination and project conditions.

B. Preconstruction meeting.

C. Site mobilization meeting.

D. Progress meetings.

E. Pre-installation meetings.

F. Cutting and patching.

G. Special procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, operating equipment.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.

F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.3 PRECONSTRUCTION MEETING

A. Owner will schedule meeting after Notice of Award.

B. Attendance Required: Owner, Architect and Contractor.

C. Agenda:
1. Execution of Owner-Contractor Agreement.
2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing parties in Contract and Architect.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with one copy to Architect, Owner and those affected by decisions made.

1.4 SITE MOBILIZATION MEETING

A. Architect will schedule meeting at Project site prior to Contractor occupancy.

B. Attendance Required: Owner, Architect, Special Consultants, and Contractor, Contractor's Superintendent and major Subcontractors.

C. Agenda:
1. Use of premises by Owner and Contractor.
2. Owner's requirements.
3. Construction facilities and controls provided by Owner.
4. Temporary utilities provided by Owner.
5. Schedules.
6. Application for payment procedures.
7. Procedures for testing.
8. Procedures for maintaining record documents.
9. Requirements for start-up of equipment.
10. Inspection and acceptance of equipment put into service during construction period.

D. Record minutes and distribute copies within two days after meeting to participants, with one copy to Architect, Owner and those affected by decisions made.

1.5 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: Job superintendent, major subcontractors and suppliers, Owner and Architect, as appropriate to agenda topics for each meeting.

D. Agenda:
1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

E. Record minutes and distribute copies within two days after meeting to participants, with one copy to Architect, Owner and those affected by decisions made.

1.6 PRE-INSTALLATION MEETINGS

A. When required in individual specification sections, convene pre-installation meetings at Project site prior to commencing work of specific section.

B. Require attendance of parties directly affecting, or affected by, Work of specific section.

C. Notify Architect/Engineer four days in advance of meeting date.

D. Prepare agenda and preside at meeting:
1. Review conditions of installation, preparation and installation procedures.
2. Review coordination with related work.

E. Record minutes and distribute copies within two days after meeting to participants, with one copy to Architect, Owner and those affected by decisions made.

PART 2 EXECUTION

2.1 CUTTING AND PATCHING

A. RELATED DOCUMENTS

1. Drawings and General Provisions of Contract, including but not limited to, General and Supplementary Conditions and other Division 1, Specification Sections, apply to work of this Section.

B. DESCRIPTION OF WORK

1. Definitions: "Cutting and Patching" includes cutting into existing construction to provide for the installation or performance of other Work and subsequent fitting and patching required to restore surfaces to their original conditions.

2. "Cutting and Patching" is performed for coordination of the Work, to uncover work for access or inspection, to obtain samples for testing, to permit alternations to be performed, or for other similar purposes.

3. Cutting and Patching performed during the manufacture of products, or during the initial fabrication, erection or installation processes is not considered to the "Cutting and Patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "Cutting and Patching".

C. QUALITY ASSURANCE

1. Requirements for Structural Work: Do not cut and patch structural work without prior approval of a structural engineer.

2. Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, including energy performance, or that would result in increased maintenance, or decreased operational life or decreased safety.

D. SUBMITTALS

1. Procedural Proposal for Cutting and Patching: Where prior approval of cutting and patching is required, submit proposed procedures for this work well in advance of the time work will be performed and request approval to proceed. Include the following information, as applicable, in the submittal.

2. List products to be used and firms that will perform work.

3. Give dates when work is expected to be performed.

4. List utilities that will be disturbed or otherwise be affected by work, including those that will be relocated and those that will be out-of-service temporarily. Indicate how long utility service will be disrupted.

5. Approval by the Design Consultant or Project Management Firm to proceed with cutting and patching work does not waive the Design Consultant's or Project Management Firm's right to later require complete removal and replacement of work found to be cut and patched in an unsatisfactory manner.

E. MATERIALS

1. General: Except as otherwise indicated, or as directed by the Design Consultant or Project Management Firm, use materials for cutting and patching that are identical to existing materials. If identical materials are not available, or cannot be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials for cutting and patching that will result in equal-or-better performance characteristics.

F. INSPECTION

1. Before cutting, examine the surface to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered notify Project Management Firm immediately. Execute cutting (including excavation) fitting or patching of work required to: make several parts fit properly; uncover work to provide for installation or ill-timed work; remove and replace defective work; remove and replace work not conforming to requirements of Contract Documents.

G. PREPARATION

1. Temporary Support: To prevent failure provide temporary support of work to be cut.

2. Protection: Protect other work during cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations.

H. PERFORMANCE

1. General: Except as otherwise indicated or as approved by the Design Consultant or Project Management Firm, proceed with cutting and patching at the earliest feasible time and complete work without delay.

2. Cutting: Cut the work using methods that are least likely to damage work to be retained or adjoining work. Where possible review proposed procedures with the original installer; comply with original installer's recommendations.

3. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such as a carborundum saw or core drill to insure a neat hole. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut or drill from exposed or finished side into concealed surfaces. Temporarily cover openings when not in use.

4. Comply with requirements of applicable Sections of Division 2 where cutting and patching require excavating and backfilling.

5. Patching: Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.

6. Where feasible, inspect and test patched areas to demonstrate integrity of work.

7. Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.

8. Where removal of walls or partitions extends one finished area into another finished area, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance, remove existing floor and wall coverings and replace with new materials.

9. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch, after patched area has received prime and base coat.

I. CLEANING

1. Thoroughly clean areas and spaces where work is performed or used as access to work. Remove completely, point mortar, oils, putty, and items of similar nature. Thoroughly clean piping, conduit, and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition

2.2 SPECIAL PROCEDURES

A. Materials: As specified in product sections; match existing with new products for patching and extending work.

B. Employ skilled and experienced installer to perform alteration work.

C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.

D. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

E. Remove debris and abandoned items from area and from concealed spaces.

F. Prepare surface and remove surface finishes to permit installation of new work and finishes.

G. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.

H. Remove, cut, and patch Work in manner to minimize damage and to permit restoring products and finishes to original condition.

I. Refinish existing visible surfaces to remain in renovated rooms and spaces, to renewed condition for each material, with neat transition to adjacent finishes. Coordinate with construction documents.

J. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

K. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect/Engineer for review.

L. Where change of plane of 1/4 inch or more occurs, request instructions from Architect/Engineer.

M. Trim existing doors to clear new floor finish. Refinish trim to original condition. Coordinate with construction documents.

N. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.

O. Finish surfaces as specified in individual product sections.

END OF SECTION

SECTION 01 32 16

CONSTRUCTION SCHEDULE

1.0 GENERAL:

1.1 DESCRIPTION:

1.1.1 Work Included: To assure adequate planning and execution of the work so that the work is completed within the number of calendar days allowed in the contract, and to assist the Owner in appraising the reasonableness of the proposed schedule and in evaluating progress of the work, prepare and maintain the schedules and reports described in this section.

1.1.2 Definitions: "Day" used throughout the contract, unless otherwise stated, means "Calendar Day".

1.2 QUALITY ASSURANCE:

1.2.1 Qualifications of Scheduling Personnel: Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data, in analyzing by use of Critical Path Method or PERT, and in preparation and issue of periodic reports as required below.

1.2.2 Reference Standards: Perform all data preparation, analysis, charting and updating in accordance with all recommendations contained in the current edition of "CPM in Construction" Manual of Associate General Contractors, or in accordance with other standards approved by the State.

1.2.3 Reliance Upon Approved Schedule:

1.2.4 The construction schedule as approved by the Owner will be an integral part of the Contract and will establish interim Contract Completion dates for the various activities.

1.2.5 Should any activity not be completed within fifteen (15) days after the stated scheduled date, the Owner shall have the right to order the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor.

1.2.6 Should any activity be thirty (30) or more days behind schedule, the Owner shall have the right to perform the activity or have activity performed by whatever method the Owner deems appropriate.

1.2.7 Costs incurred by the Owner in connection with expediting construction activity under this Article shall be reimbursed to the Owner by the Contractor.

1.2.8 It is expressly understood and agreed that failure by the Owner to exercise the option to either order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered precedent setting for any other activities.

1.3 SUBMITTALS:

1.3.1 General: Comply with the provisions of Section 013000.

1.3.2 Preliminary Analysis: Within ten (10) days after receipt of Notice to Proceed, submit one (1) reproducible copy and four (4) prints of a preliminary construction schedule, plus four (4) prints of proposed format or Materials Status Reports, prepared in accordance with Part Three of this Section.

1.3.3 Construction Schedule: Within twenty (20) days after receipt of Notice to Proceed, submit one (1) reproducible and four (4) prints of construction schedule prepared in accordance with Part Three of this Section. Update the construction schedule on a monthly basis.

1.3.4 Periodic Report:

1.3.5 On the first working day of each month following submittal described in Paragraph 1.3 above, submit four (4) prints of the construction schedule updated as described in Part Three of this Section.

1.3.6 Accompanying each periodic submittal of construction schedule, submit four (4) prints of the Materials Status Reports updated as described in Part Three of this Section.

2.0 PRODUCTS:

2.1 CONSTRUCTION ANALYSIS:

2.1.1 Diagram: Graphically show the order and interdependence of all activities necessary to complete the work, and the sequence in which each activity is to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all subcontractors whose work is shown on the diagram. Activities shown on the diagram shall include, but are not necessarily limited to:

a. Project mobilization;
b. Submittals and approvals of Shop Drawings and Samples;
c. Procurement of equipment and critical materials;
d. Fabrication of special material and equipment, and their installation and testing;
e. Final cleanup;
f. Final inspection and testing;
g. All activities by the governing agencies that affect progress, required dates for completion, or both, for all and for each part of the work.

2.1.2 The detail of information shall be such that duration times of activities shall normally range from one (1) to fifteen (15) days. The selection and number of activities shall be subject to the Owner's approval.

2.1.3 Show on the diagram, as a minimum for each activity, preceding and following event numbers, description of each activity, cost and activity duration in calendar days. Submit diagram on a sheet 75 cm (30") high by the width required.

2.2 Mathematical Analysis: Furnish a mathematical analysis of the diagram by manual or computer-aided means, including a tabulation of each activity. Show the following information as a minimum for each activity:

a. Preceding and following event number;
b. Activity descriptions;
c. Earliest start date (by calendar date);
d. Latest start date (by calendar date);
e. Earliest finish date (by calendar date);
f. Latest finish date (by calendar date);
g. Slack or float (by calendar days);
h. Monetary value of the activity;
i. Percentage of activity completed;
j. Contractor's earnings based on portion of activity completed.

2.2.1 The means used in making the mathematical analysis shall be capable of compiling the total value of completed and partially completed activities, and be capable of accepting modifications approved for time and logic adjustments.

2.3 Periodic Reports: If computer-aided means are used, list the activities in computer printout sorts as follows:

a. By the preceding event number from lowest to highest, and then in order of the following event numbers;
b. By the amount of float, then in order of preceding event numbers, and then in order of succeeding event numbers.
c. In order of preceding event numbers, and then in order of succeeding event numbers (show the dollar amount and dollars spent to date for each activity);
d. Other sorts requested by the Owner, for which the Contractor will be reimbursed in accordance with the General Conditions provisions for "Changes."

2.4 <u>MATERIAL STATUS REPORTS:</u>

2.4.1 Format: The Contractor's standard materials status report form will be acceptable if, in Architect's judgment, it provides sufficient pertinent data to determine that materials procurement flow is adequate for all needs of the work.

2.4.2 Content: Show at least the following information:

2.4.3 Item Description, listed in accordance with Specifications Section Number in which the item is called for:

2.4.4 Purchase Order Number and Date of Issue:

2.4.5 Vendor Name:

2.4.6 Date Shipped and Shipping Means Utilized:

2.4.7 Estimated Date of Arrival at Job Site.

2.4.8 Actual Date of Arrival at Job Site, and Receiving Report Number.

2.5 Data Processing: Process the data by manual or computer-aided methods, but to a degree of promptness and accuracy assuring complete display of all pertinent current information at date of each periodic report.

3.0 EXECUTION:

3.1 PRELIMINARY ANALYSIS:

3.1.1 Contents:

a. Show all activities of the Contractor under this work for the period between receipt of Notice to Proceed and Submittal of Construction Schedule required as noted above.
b. Show the Contractor's general approach to remainder of the work.
c. Show cost of all activities scheduled for performance before submittal and approval of the construction schedule.

3.1.2 Submittals shall be in accordance with Paragraphs.

3.2 CONSTRUCTION SCHEDULE: As soon as practicable after receipt of Notice to Proceed, complete the Construction Analysis described in Article 2.1 above, in preliminary form. Meet with the Architect, review contents of proposed construction schedule, and make all revisions agreed upon. Submit in accordance with Paragraph 1.3 above.

3.2.1 Schedule Information:

a. Notice to Proceed - July 9, 2020
b. Substantial Completion- August 20, 2020
c. Final Completion - August 27, 2020
d. Project Duration - 56 Calendar Days (8 Weeks)

3.3 MATERIAL STATUS REPORT: As soon as practicable after receipt of Notice to Proceed, meet with the State, review contents of proposed Materials Status Reports, and make all revisions to format agreed upon.

3.4 PERIODIC REPORTS:

3.4.1 Construction Schedule, Contents:

e. Report actual progress by updating the mathematical analysis.
f. Note on the summary report, or clearly show on a revised issue of affected portions of the detailed diagram, all revisions causing changes in the detailed program.
g. Revise the summary report as necessary for clarity.
h. Show activities or portions of activities completed during the reporting period and their actual value.
i. State the percentage of work actually completed and schedule as the report date, and the progress along the critical path in terms of days ahead of or behind the allowable dates.
j. If the work is behind schedule, also report progress along other paths with negative slack.

k. Include a narrative report which shows, but is not necessarily limited to:
   i. A description of the problem areas, current and anticipated;
   ii. Delaying factors, and their impact;
   iii. An explanation of corrective actions taken or proposed.

3.4.2 Show the date of latest revision. Submit in accordance with the provisions above.

3.5 Materials Status Reports:

3.5.1 On the letter of transmittal accompanying periodic reports, on an accompanying summary sheet, or by other means acceptable to the Architect, clearly indicate those items the delivery of which are critically overdue or otherwise hazardous to maintenance of the approved schedule.

3.5.2 Submit in accordance with the provisions above.

3.6 REVISIONS: Make only those revisions to approved Construction Schedule and approved Materials Status Reports as are approved in advance by the Architect.

4.0 SUBMISSION: A progress schedule shall be updated monthly by the General Contractor, with coordination of the other prime contractors (as required). This updated schedule shall be submitted to the Architect at the first job meeting and each meeting thereafter. If schedule is not submitted, request for payment may be withheld.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submittal procedures.

B. Construction progress schedules.

C. Proposed products list.

D. Product data.

E. Shop drawings.

F. Samples.

G. Design data.

H. Test reports.

I. Certificates.

J. Manufacturer's instructions.

K. Manufacturer's field reports.

L. Erection drawings.

1.2 SUBMITTAL PROCEDURES

A. Transmit each submittal with AIA Form G810.

B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

C. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.

D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with requirements of the Work and Contract Documents.

E. Schedule submittals to expedite Project, and deliver to Architect at business address. Coordinate submission of related items.

F. For each submittal for review, allow 15 days excluding delivery time to and from Contractor.

G. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of completed Work.

H. Allow space on submittals for Contractor and Architect review stamps.

I. When revised for resubmission, identify changes made since previous submission.

J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

K. Submittals not requested will not be recognized or processed.

1.3 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial schedules within 15 days after date of Owner-Contractor Agreement. After review, resubmit required revised data within ten days.

B. Submit revised Progress Schedules with each Application for Payment.

C. Distribute copies of reviewed schedules to Project site file, subcontractors, suppliers and other concerned parties.

D. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in schedules.

E. Submit computer generated horizontal bar chart with separate line for each section of Work, identifying first work day of each week.

F. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate early and late start, early and late finish, float dates, and duration.

G. Indicate estimated percentage of completion for each item of Work at each submission.

H. Submit separate schedule of submittal dates for shop drawings, product data and samples, including dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.

I. Revisions To Schedules:
   1. Indicate progress of each activity to date of submittal, and projected completion date of each activity.
   2. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
   3. Prepare narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect.

1.4 PROPOSED PRODUCTS LIST

A. Within 15 days after date of Owner-Contractor Agreement, submit list of major products proposed for use as indicated on drawings and specifications, with name of manufacturer, trade name, model number of each product and specification section.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation and reference standards.

1.5 PRODUCT DATA

A. Product Data: Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Submit number of copies Contractor requires, plus two copies Architect will retain.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. Indicate product utility and electrical characteristics, utility connection requirements and location of utility outlets for service for functional equipment and appliances.

E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 017000.

1.6 SHOP DRAWINGS

A. Shop Drawings: Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Indicate special utility and electrical characteristics, utility connection requirements and location of utility outlets for service for functional equipment and appliances.

C. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
1. Include signed and sealed calculations to support design.
2. Submit drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
3. Make revisions and provide additional information when required by authorities having jurisdiction.

D.
1. Submit number of opaque reproductions Contractor requires, plus two copies Architect will retain

2. Shop drawing review is based on submission of specified items as indicated in the construction documents and specifications. Product substitutions are allowed and must be substantiated and verified by filling out Yezzi Associates “Proposed Substitution Certification” form included in the bid submission package. Architects shop drawing review is limited to one submission per product - subsequent submission and review time for same product or substitution review time incurred by the architect will be billed to the general contractor at a rate of $100/hr. Additional review time due to resubmissions specifically requested by

the architect in order to finalize product submission and conformance with construction documents and design intent will not incur any additional charges.

E. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents described in Section 017000.

1.7 SAMPLES

A. Samples: Submit to Architect for review for limited purpose of checking for conformance with information given and design concept expressed in Contract Documents.

B. Samples For Selection as Specified in Product Sections:
1. Submit to Architect for aesthetic, color or finish selection.
2. Submit samples of finishes from full range of manufacturers' standard colors, textures and patterns for Architect selection.

C. Submit samples to illustrate functional and aesthetic characteristics of Products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

D. Include identification on each sample, with full Project information.

E. Submit number of samples specified in individual specification sections; Architect will retain one sample.

F. Reviewed samples which may be used in the Work are indicated in individual specification sections.

G. Samples will not be used for testing purposes unless specifically stated in specification section.

H. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes described in Section 017000.

1.8 DESIGN DATA

A. Submit for Architect's knowledge as contract administrator or for Owner.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.9 TEST REPORTS

A. Submit for Architect's knowledge as contract administrator or for Owner.

B. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.10 CERTIFICATES

A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Architect, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect/Engineer.

1.11 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting and finishing, to Architect for delivery to Owner in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.12 MANUFACTURER'S FIELD REPORTS

A. Submit reports for Architect's benefit as contract administrator or for Owner.

B. Submit report in duplicate within 5 days of observation to Architect for information.

C. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

1.13 ERECTION DRAWINGS

A. Submit drawings for Architect's benefit as contract administrator or for Owner.

B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in Contract Documents.

C. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 33 23

SHOP DRAWINGS, PRODUCT DATA, SAMPLES & PHOTOGRAPHS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary conditions and other Division-1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS

A. General: This section specifies procedural requirements for non-administrative submittals including shop drawings, product data, samples and other miscellaneous work-related submittals. Shop drawings, product data, samples and other work-related submittals are required to amplify, expand and coordinate the information contained in the Contract Documents.

B. Refer to other Division-1 Sections and other contract documents for specifications on administrative, non-work-related submittals. Such submittals include, but are not limited to the following items:

1. Permits
2. Payment applications
3. Performance and payment bonds.
4. Insurance certificates
5. Inspection and test reports
6. Schedule of values
7. Progress reports
8. Listing of subcontractors.

C. Shop drawings are technical drawings and data that have been specially prepared for this project, including but not limited to the following items:

1. Fabrication and installation drawings
2. Setting diagrams
3. Shopwork manufacturing instructions
4. Templates
5. Patterns
6. Coordination drawings (for use on-site)
7. Schedules
8. Design mix formulas
9. Contractor’s engineering calculations

D. Standard information prepared without specified reference to a project is not considered to be shop drawings.

E. Product data includes standard printed information on manufactured products that has not been specially-prepared for this project, including but not limited to the following items:

1. Manufacturer's product specifications and installation instructions.
2. Standard color charts.
3. Catalog cuts
4. Roughing-in diagram and templates
5. Standard wiring diagrams
6. Printed performance curves
7. Operational range diagrams
8. Mill reports
9. Standard product operating and maintenance manuals

F. Samples are physical examples of work, including but not limited to the following items.

1. Partial sections of manufactured or fabricated work
2. Small cuts or containers of materials
3. Complete units of repetitively-used materials
4. Swatches showing color, texture and pattern
5. Color range sets
6. Units of work to be used for independent inspection and testing

G. Mock-ups are special forms of samples, which are too large or otherwise inconvenient for handling in the manner specified for transmittal of sample submittals.

H. Miscellaneous submittals are work-related, non-administrative submittals that do not fit in the three previous categories, including, but not limited to the following:

1. Specially-prepared and standard printed warranties
2. Maintenance agreements
3. Workmanship bonds
4. Survey data and reports
5. Project photographs
6. Testing and certification reports
7. Record drawings
8. Field measurement data
9. Operating and maintenance manuals
10. Keys and other security protection devices
11. Overrun stock

1.3 SUBMITTAL PROCEDURES:

A. General: Refer to the General Conditions for basic procedures for submittal handling.

1. Coordination: Coordinate the preparation and processing of submittals with the performance of the work. Coordinate each separate submittal with other

submittals and related activities such as testing, purchasing fabrication, delivery and similar activities that require sequential activity.

Coordinate the submittal of different units of interrelated work so that one submittal will not be delayed by the Architect/Engineer's need to review a related submittal requiring coordination with other submittals until related submittals are forthcoming.

2. Coordination of Submittal Times: Prepare and transmit all submittals to the architect/Engineer within seven (7) days of Notice of Award Notice to Proceed period. Transmit different kinds of submittals for the same unit of work so that processing will not be delayed by the Architect/Engineer's need to review submittals concurrently for coordination.

3. Review Time: Allow sufficient time within the fourteen (14) days period so that the installation will not be delayed as a result of the time required to properly process submittals, including time for re-submittal, if necessary. Advise the Architect/Engineer on each submittal, as to whether processing time is critical to the progress of the work, and if the work would be expedited if processing time could be shortened.

   Allow two weeks for the Architect/Engineer's initial processing of each submittal. Allow a longer time period where processing must be delayed for coordination with subsequent submittals. The architect/Engineer will advice the contractor promptly when it is determined that a submittal being processed must be delayed for coordination.

   No extension of time will be authorized because of the contractor's failure to transmit submittals to the Architect/Engineer sufficiently in advance of the work.

4. Submittal Preparation: Mark each submittal with a permanent label for identification. Provide the following information on the label for proper processing and recording of action taken.

   a. Project name
   b. Date
   c. Name and address of Contractor
   d. Name and address of sub-contractor
   e. Name and address of supplier
   f. Name of manufacturer
   g. Number and title of appropriate specification section
   h. Drawing number and detail references, as appropriate
   i. Similar definitive information as necessary

   Provide a space on the label for the Contractor review and approval markings, and a space for the Architect/Engineer's "Action" marking.

5. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the architect/Engineer, and to other destinations as indicated, by use of a transmittal form. Submittals

received from sources other than the Contractor will be returned to the sender "without action".

6. Transmittal Form: Provide on the form places for the following information:

   a. Project name
   b. Date
   c. To
   d. From
   e. Category and type of submittal
   f. Submittal purpose and description
   g. Submittal and transmittal distribution records
   h. Signature of transmitter

   Contractor's certification stating that the information submitted complies with the requirements of the Contract Documents, with a place for the Contractor's signature.

   Record relevant information and requests for data on the transmittal form. On the transmittal form, or on a separate sheet attached to the form, record deviations from the requirements of the Contract Documents, if any, including minor variations and limitations.

1.4 SPECIFIC SUBMITTAL REQUIREMENTS:

A. General: Specific submittal requirements for individual units of work are specified in the applicable specification section. Except as otherwise indicated in the individual specification sections, comply with the requirements specified herein for each type of submittal.

Where it is necessary to provide intermediate submittals between the initial and final submittals, provide and process intermediate submittals in the same manner as for initial submittals.

B. Shop Drawings: Information required on shop drawings includes, dimensions, identification of specific products and materials, which are included in the work, compliance with specified standards and notations of coordination requirements with other work. Provide special notation of dimensions that have been established by field measurement. Deviations, modifications, additions or deletions from the contract documents must be specifically called out on the shop drawings by way of a cloud, note or request for review or clarification.

Refer to Division-23 and Division-26 sections for additional general requirements applicable to shop drawings for mechanical and electrical work, respectively.

Do not permit shop drawings copies without an appropriate final "Action" marking by the Architect/Engineer to be used in connection with the work.

Preparation: Submit newly prepared information, drawn to accurate scale on sheets not less than 8 –1/2" x 11"; except for actual pattern or template type drawings, the maximum sheet size shall not exceed 36" x 48". Indicate the name of the firm that

prepared each shop drawing and provide appropriate project identification in the title block. Provide a space not less than 20 sq. in. beside the title block for marking the record of the review process and the Architect/Engineer's "Action" marking.

Do not reproduce contract documents or copy standard printed information as the basis of shop drawings.

C. Initial Submittal: Provide one correctable translucent reproducible print and one blue-line or black-line print; the reproducible print will be returned.

D. Product Data: General information required specifically as product data includes manufacturer's standard printed recommendations for application and use, compliance with recognized standards of trade associates and testing agencies, and the application of their labels and seals (if any), special notation of dimensions which have been verified by way of field measurement, and special coordination requirements for interfacing the material, product or system with other work.

Refer to Division-23 and Division-26 sections for additional general requirements applicable to product data for mechanical and electrical work respectively.

E. Samples: Submit samples for the Architect/Engineer's visual review of general generic kind, color, pattern, and texture, and for a final check of the coordination of these characteristics with other related elements of the work. Samples are also submitted for quality control comparison of these characteristics between the final sample submittal and the actual work as it is delivered and installed.

Refer to individual work sections of these specifications for additional sample requirements, which may be intended for examination or testing of additional characteristics. Compliance with other required characteristics is the exclusive responsibility of the Contractor; such as, compliance is not considered in the Architect/Engineer's review and "Action" indication of sample submittals.

Documentation required specifically for sample submittals, includes a generic description of the sample, the sample source or the product name or manufacturer, compliance with governing regulations and recognized standards. In addition, indicate limitations in terms of availability, sizes, delivery time, and similar limiting characteristics.

Refer to individual sections of these specifications for samples, which, because of their relatively high cost or other special considerations, are intended to be returned to the Contractor for incorporation in the work. Such samples must be in an undamaged condition at the time of use. On the transmittal form to the Architect/Engineer, indicate such special requests regarding the disposition of sample submittals.

F. Submittal: At the Contractor's option, and depending upon the nature of the anticipated response from the Architect/engineer, the initial submittal of samples may be either a preliminary submittal or a final submittal.

G. Preliminary submittal, of a single set of samples, is required where requirements indicate the Architect/Engineer's selection of color, pattern, texture or similar characteristics from a manufacturer's range of standard choices is necessary.

Preliminary submittals will be reviewed and returned with the Architect/Engineer's "Action" marking.

H. Final Submittals: Submit 3 sets of samples in the final submittal, one set will be returned.

1.5 MISCELLANEIOUS SUBMITTALS:

A. Inspection and Test Reports: Classify each inspection and test report as being either "shop drawings" or "product data" depending on whether the report is specially prepared for the project, or a standard publication of workmanship control testing at the point of production. Process inspection and test reports accordingly.

B. Warranties: Refer to section "Products and Substitutions" for specific general requirements on warranties, product bonds, workmanship bonds and maintenance agreement. In addition to copies desired for the Contractor's use, furnish 2 executed copies of such warranties, bonds or agreements. Provide 2 additional copies where required for maintenance manuals.

C. Project Photographs: The lead Contractor shall furnish 2 prints each of 3 project photographs at monthly intervals and at completion of project 2 prints each of 4 interior and 4 exterior photographs. Comply with Architect/Engineer's direction concerning desired vantage points for shots.

Photographs shall be 8" x 10" glossy color pints on single-weight commercial grade stock, with extra ¾" wide margin punched for standard 3-ring binder and a copy of negatives. Identify each print on the backside with name and address of photographer, name of project, date of shot and description of vantage point. Also provide final photographs on compact disks, digital video disks, USB thumb drives or SD cards using JPEG file format.

D. Survey Data: Refer to Section 010000 "General Requirements" for specific general requirements on property surveys, field measurements, quantitative records of actual work, damage surveys and similar data required by the individual sections of these specifications. None of the specified copies will be returned.

E. Survey Copies: Furnish 2 copies of general survey data. Provide 10 copies of the final property survey.

F. Records of Actual Work: Furnish 4 copies of records of actual work, one of which will be returned for inclusion in the record documents as specified in Section 017000.

G. Closeout Submittals: Refer to Section 017000 and to individual sections of these specifications for specific submittal requirements of project closeout information, materials, tools, and similar items.

1.6 ARCHITECT/ENGINEER'S ACTION:

Action stamp: The Architect/Engineer will stamp each submittal to be returned with a uniform, self explanatory action stamp, approximately marked and executed to indicate whether the submittal returned is for a) unrestricted use, b) final-but-restricted use or c) must be revised and resubmitted; or d) without action (as explained on the transmittal form).

A. Final Unrestricted Release: Where the submittals are marked as follows, the work covered by the submittal may proceed provided it complies with the requirements of the contract documents; acceptance of the work will depend upon that compliance.

Marking: "NO EXCEPTIONS TAKEN"

B. Final-But-Restricted-Release: When the submittals are marked as follows, the work covered by the submittal may proceed provided it complies with both the Architect/Engineer's notations or corrections on the submittals and with the requirements of the contract documents; acceptance of the work will depend on that compliance.

Marking: "EXCEPTION TAKEN AS NOTED"

C. Returned for re-submittal: when the submittal is marked as follows, do <u>not</u> proceed with the work covered by the submittal, including purchasing, fabrication, delivery or other activity. Revise the submittal or prepare a new submittal in accordance with the Architect/Engineer's notations stating the reasons for returning the submittal; resubmit the submittal without delay. Repeat if necessary to obtain a different action marking. Do not permit submittals with the following marking to be used at the project site, or else where work is in progress.

Marking "REVISE AND RESUBMIT"

D. Other Action: Where the submittal is returned, marked with the Architect/Engineer's explanation, for special processing or other Contractor activity, or is primarily for information or record purposes, the submittal will be marked.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION.

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality control and control of installation.

B. Tolerances

C. References.

D. Mock-up requirements.

E. Testing and inspection services.

F. Manufacturers' field services.

G. Examination.

H. Preparation.

1.2 QUALITY CONTROL AND CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. When manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform Work by persons qualified to produce required and specified quality.

F. Verify field measurements are as indicated on Shop Drawings or as instructed by manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' tolerances. When manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date of Contract Documents, except where specific date is established by code.

C. Obtain copies of standards where required by product specification sections.

D. When specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

E. Neither contractual relationships, duties, nor responsibilities of parties in Contract nor those of Architect/Engineer shall be altered from Contract Documents by mention or inference otherwise in reference documents.

1.5 MOCK-UP REQUIREMENTS

A. Tests will be performed under provisions identified in this section and identified in respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Accepted mock-ups shall be comparison standard for remaining Work.

D. Where mock-up has been accepted by Architect/Engineer and is specified in product specification sections to be removed; remove mock-up and clear area when directed to do so by Architect/Engineer.

1.6 TESTING AND INSPECTION SERVICES

A. Employ and pay for services of an independent testing agency or laboratory acceptable to Owner to perform specified testing.

1. Prior to start of Work, submit testing laboratory name, address, and telephone number, and names of full time registered Engineer and responsible officer.
2. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of deficiencies reported by inspection.

B. The independent firm will perform tests, inspections and other services specified in individual specification sections and as required by Architect/Engineer and authority having jurisdiction.

1. Laboratory: Authorized to operate at Project location.
2. Laboratory Staff: Maintain full time registered Engineer specialist on staff to review services.
3. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to National Bureau of Standards or accepted values of natural physical constants.

C. Testing, inspections and source quality control may occur on or off project site. Perform off-site testing as required by Architect/Engineer or Owner.

D. Reports will be submitted by independent firm to Architect/Engineer and Contractor, in duplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
1. Notify Architect/Engineer and independent firm 36 hours prior to expected time for operations requiring services.
2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

F. Testing and employment of testing agency or laboratory shall not relieve Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

G. Re-testing or re-inspection required because of non-conformance to specified requirements shall be performed by same independent firm on instructions by Architect/Engineer. Payment for re-testing or re-inspection will be charged to Contractor by deducting testing charges from Contract Sum/Price.

H. Agency Responsibilities:
1. Test samples of mixes submitted by Contractor.
2. Provide qualified personnel at site. Cooperate with Architect/Engineer and Contractor in performance of services.
3. Perform specified sampling and testing of products in accordance with specified standards.
4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
5. Promptly notify Architect/Engineer and Contractor of observed irregularities or non-conformance of Work or products.
6. Perform additional tests required by Architect/Engineer.
7. Attend preconstruction meetings and progress meetings.

I. Agency Reports: After each test, promptly submit 3 copies of report to Architect/Engineer and to Contractor. When requested by Architect/Engineer, provide interpretation of test results. Include the following:
1. Date issued.
2. Project title and number.
3. Name of inspector.
4. Date and time of sampling or inspection.
5. Identification of product and specifications section.
6. Location in Project.

7. Type of inspection or test.
8. Date of test.
9. Results of tests.
10. Conformance with Contract Documents.

J. Limits On Testing Authority:
1. Agency or laboratory may not release, revoke, alter, or enlarge on requirements of Contract Documents.
2. Agency or laboratory may not approve or accept any portion of the Work.
3. Agency or laboratory may not assume duties of Contractor.
4. Agency or laboratory has no authority to stop the Work.

1.7 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect/Engineer 30 days in advance of required observations. Observer subject to approval of Architect/Engineer.

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. Refer to Section 01 33 00 - Submittal Procedures, MANUFACTURERS' FIELD REPORTS article.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.

B. Verify existing substrate is capable of structural support or attachment of new Work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Verify utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying new material or substance in contact or bond.

END OF SECTION

SECTION 01 60 00

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

E. Product substitution procedures.

F. Equipment electrical characteristics and components.

1.2 PRODUCTS

A. Furnish products of qualified manufacturers suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by Contract Documents.

C. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to ensure products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products in accordance with manufacturers' instructions.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of one or manufacturers named and meeting specifications, substitutions are allowed in accordance with General Conditions Section 4.15 and Section 1.6 – Product Substitution Procedures under Section 01 60 00.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit request for substitution for any manufacturer not named in accordance with General Conditions Section 4.15, the following article and filling out the "Substitution Certification" form.

1.6 PRODUCT SUBSTITUTION PROCEDURES

A. Architect/Engineer will consider requests for Substitutions only within 10 days after date of Owner-Contractor Agreement.

B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.

C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents and fill out the "Substitution Certification" form and submit with all backup data.

D. A request constitutes a representation that Bidder/Contractor:
   1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
   2. Will provide same warranty for Substitution as for specified product.
   3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension which may subsequently become apparent.
5. Will reimburse Owner and Architect/Engineer for review or redesign services associated with re-approval by authorities having jurisdiction.

E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to Contract Documents.

F. Substitution Submittal Procedure:

1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution, along with "Substitution Certification" form.
2. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
3. Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS

2.1 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Wiring Terminations: Furnish terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Include lugs for terminal box.

B. Cord and Plug: Furnish minimum 6-foot (2 m) cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Starting of systems.

D. Demonstration and instructions.

E. Testing, adjusting and balancing.

F. Protecting installed construction.

G. Project record documents.

H. Operation and maintenance data.

I. Manual for materials and finishes.

J. Manual for equipment and systems.

K. Spare parts and maintenance products.

L. Product warranties and product bonds.

M. Maintenance service.

1.2 CLOSEOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's review.

B. Provide submittals to Architect/Engineer required by authorities having jurisdiction.

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

D. Owner will occupy all portions of building as specified in Section 01 10 00 - Summary.

E. See General Conditions and Supplementary General Conditions of the Contract for Construction for further information on 5% line item for Close Out Documentation, and Overhead, Profit and Bonding

1.3 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.

D. Replace filters of operating equipment.

E. Clean debris from roofs, gutters, downspouts, and drainage systems.

F. Clean site; sweep paved areas, rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.4 STARTING OF SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Architect/Engineer and Owner seven days prior to start-up of each item.

C. Verify each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.

D. Verify tests, meter readings, and specified electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify wiring and support components for equipment are complete and tested.

F. Execute start-up under supervision of applicable manufacturer's representative or Contractors' personnel in accordance with manufacturers' instructions.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report in accordance with Section 01 33 00 - Submittal Procedures that equipment or system has been properly installed and is functioning correctly.

1.5 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion and final inspection.

B. Demonstrate Project equipment instructed by qualified manufacturer's representative who is knowledgeable about the Project.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within 4 months.

D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.

E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.

F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

G. Required instruction time for each item of equipment and system is specified in individual sections.

1.6 TESTING, ADJUSTING AND BALANCING

A. Reports will be submitted by independent firm to Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with requirements of Contract Documents. General contractor is to cover costs for all testing and reports.

1.7 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual specification sections.

B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.8 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change Orders and other modifications to the Contract.

5. Reviewed Shop Drawings, Product Data, and Samples.
6. Manufacturer's instruction for assembly, installation, and adjusting.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress, not less than weekly.

E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
1. Measured depths of foundations in relation to finish first floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract drawings.

G. Submit three (3) electronic copies of all record drawings and approved shop drawings on thumb drives to Architect/Engineer.

1.9 OPERATION AND MAINTENANCE DATA

A. Submit three (3) electronic copies of all operation and maintenance data on thumb drives to Architect/Engineer.

B. Prepare cover with title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.

C. Subdivide content with permanent divider pages, logically organized as described below; with tab titling clearly identified.

D. Drawings: Submit electronically with O&M documentation.

E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, in three parts as follows:
1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
2. Part 2: Operation and maintenance instructions arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
   a. Significant design criteria.
   b. List of equipment.

c. Parts list for each component.
d. Operating instructions.
e. Maintenance instructions for equipment and systems.
f. Maintenance instructions for all finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.

3. Part 3: Project documents and certificates, including the following:
a. Approved shop drawings and product data.
b. Air and water balance reports.
c. Certificates.
d. Originals and 2 Photocopies of warranties and bonds.

1.10 MANUAL FOR MATERIALS AND FINISHES

A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.

B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy be reviewed and returned with Architect/Engineer comments. Revise content of document sets as required prior to final submission.

D. Submit three sets of revised final volumes in final form within 10 days after final inspection.

E. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Include information for re-ordering custom manufactured products.

F. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.

G. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Include recommendations for inspections, maintenance, and repair.

H. Additional Requirements: As specified in individual product specification sections.

I. Include listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.11 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.

B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

C. Submit one copy of completed volumes 15 days prior to final inspection. Draft copy be reviewed and returned after final inspection, with Architect/Engineer comments. Revise content of document sets as required prior to final submission.

D. Submit three sets of revised final volumes in final form within 10 days after final inspection.

E. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.

F. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed, by label machine.

G. Include color coded wiring diagrams as installed.

H. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and special operating instructions.

I. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

J. Include servicing and lubrication schedule, and list of lubricants required.

K. Include manufacturer's printed operation and maintenance instructions.

L. Include sequence of operation by controls manufacturer.

M. Include original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

N. Include control diagrams by controls manufacturer as installed.

O. Include Contractor's coordination drawings, with color coded piping diagrams as installed.

P. Include charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

Q. Include list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

R. Include test and balancing reports as specified in Section 01 40 00 - Quality Requirements.

S. Additional Requirements: As specified in individual product specification sections.

T. Include listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

1.12 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.

B. Deliver to Project site and place in location as directed by Owner; obtain receipt prior to final payment.

1.13 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.

C. Verify documents are in proper form, contain full information, and are notarized.

D. Co-execute submittals when required.

E. Include Table of Contents and assemble in three D side ring binder with durable plastic cover.

F. Submit prior to final Application for Payment.

G. Time Of Submittals:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
   2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.14 MAINTENANCE SERVICE

A. Furnish service and maintenance of components indicated in specification sections for two years minimum from date of Substantial Completion.

B. Examine system components at frequency consistent with reliable operation. Clean, adjust, and lubricate as required.

C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by manufacturer of original component.

D. Do not assign or transfer maintenance service to agent or Subcontractor without prior written consent of Owner.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 71 00

CLEANING

PART 1 - GENERAL

1.01 WORK INCLUDED

Contractor shall maintain the project site and adjacent areas affected by the work as specified below.

1.02 DESCRIPTION

A. During its progress, i.e. on a daily basis and at its completion, and as required by the General Conditions, the work and the adjacent areas affected thereby shall be kept cleaned up and all rubbish, surplus materials, and unneeded construction equipment shall be removed and all damage repaired so that the Owner, the public and property owners will be inconvenienced as little as possible.

B. Requirements of Regulatory Agencies:

1. In addition to the requirements herein, maintain the cleanliness of the Work and surrounding premises within the Work limits so as to comply with federal, state, and local fire and safety laws, ordinances, codes and regulations.

2. Comply with all federal, state and local anti-pollution laws, ordinances, codes and regulations when disposing of waste materials, debris and rubbish.

C. Scheduling of Cleaning and Disposal Operations:

1. So that dust, wash water or other contaminants generated during such operations do not damage or mar pained or finished surfaces.

2. To prevent accumulation of dust, dirt, debris, rubbish and waste materials on or within the Work or on the premises surrounding the Work.

D. Waste Disposal:

1. The Contractor shall not delegate waste disposal or dumpster services to a subcontractor, but shall take charge of all cleanup disposal needs.

2. Dispose of all waste materials, debris and rubbish off the plant site at an approved disposal site.

3. Do not burn or bury rubbish or waste materials on the work site.

4. Do not dispose of volatile or hazardous wastes such as mineral spirits, oil, or paint thinner improperly.

5. Do not discharge wastes into streams or waterways.

E. Cleaning Materials:

1. Use only cleaning materials recommended by manufacturer of surface to be cleaned.

2. Use each type of cleaning material on only those surfaces recommended by the cleaning material manufacturer.

3. Use only materials which will not create hazards to health or property.

F. During Construction:

1. Keep the Work and surrounding premises within work limits free of accumulations of dirt, dust, waste materials, debris and rubbish.

2. Keep dust generating areas wetted down so as to prevent the entry of dust into surrounding equipment.

3. Provide suitable containers for storage of waste materials, debris and rubbish until time of disposal.

4. Dispose of waste, debris and rubbish off site at legal disposal areas.

G. When Project is Completed:

1. Remove and dispose of all excess or waste materials, debris, rubbish, and temporary facilities from the site structures and all facilities.

2. Repair pavement, roads, sod, and all other areas affected by construction operations and restore them to original condition or to condition specified.

3. Remove spatter, grease, stains, fingerprints, dirt, dust, labels, tags, packing materials and other foreign items or substances from interior and exterior surfaces, equipment, signs and lettering.

4. Repair, patch and touch up chipped, scratched, dented or otherwise marred surfaces to match specified finish.

5. Remove paint, clean and restore all equipment and material nameplates, labels and other identification markings.

6. Wash and shine mirrors, glazing and polished surfaces.

7. Clean all floors, slabs, pavements, and ground surfaces.

8. Maintain cleaning until acceptance and occupation by Owner.

END OF SECTION

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 – GENERAL

1.1 Related Documents

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

1.2 SUMMARY

A. Provide cutting and patching work, comply with project requirements for:

1. Demolition of existing construction as shown on plans and as required for new work. Note demolition plans illustrate generally work to be removed. **The contractor shall inspect site prior to Bid and include all demolition work required to perform new work. All demolition and patching work shall be considered in the contract scope.**

PART 2 – PRODUCTS

2.1 MATERIALS

A. Match existing materials for cutting and patching work with new materials conforming to project requirements or existing conditions if not herein specified.

PART 3 – EXECUTION:

A. Inspect conditions prior to work to identify scope and type of work required. Notify Owner of work requiring interruption to building services or Owner's operations. Conform to project requirements listed above.

B. Clean work area and areas affected by cutting and patching operations.

C. The Building will be occupied during construction, the Contractor shall conform to all OSHA Standard, protect all openings, doorways and walkways during construction.

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes all demolition work required to perform new work.

1.2 SUBMITTALS

A. Shop Drawings and Schedule: Describe demolition, removal procedures, sequence and schedule.

PART 2 EXECUTION

2.1 PREPARATION

A. Provide, erect, and maintain temporary barriers and security devices.

B. Notify owner of work, which may affect their property, potential noise, utility outage, or disruption. Coordinate all work with Owner.

C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring as required.

D. Protect existing landscaping materials and structures to remain.

E. Erect and maintain weatherproof airtight closures for exterior openings.

F. Erect and maintain temporary partitions to prevent spread of dust, odors and noise to permit continued Owner occupancy.

G. Protect existing items indicated to remain.

2.2 DEMOLITION REQUIREMENTS

A. Conduct demolition to minimize interference with adjacent building areas.

B. Conduct operations with minimum interference to public or private accesses.

C. Maintain protected egress and access at all times. Do not close or obstruct roadways or sidewalks without permits.

D. Cease operations immediately when adjacent structural components appear to be in danger. Notify authority having jurisdiction and Architect/Engineer.

2.3 SELECTIVE DEMOLITION

A. Demolish and remove components in orderly and careful manner, in sequence outlined in submitted and approved schedule.

B. Protect existing supporting structural members.

2.4 CLEAN UP

A. Remove demolished materials from site as work progresses.

B. Leave areas of work in clean condition.

C. Dispose of all debris in accordance with all State and Municipal requirements. Provide load tickets where applicable.

END OF SECTION

SECTION 02 41 26

SELECTIVE ELECTRICAL DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Removal of existing electrical equipment, wiring, and conduit in areas to be remodeled; removal of designated construction; dismantling, cutting and alterations for completion of the Work.
2. Disposal of materials.
3. Storage of removed materials.
4. Identification of utilities.
5. Salvaged items.
6. Protection of items to remain as indicated on Drawings.
7. Relocate existing equipment to accommodate construction.

B. Related Sections:
1. Section 02 41 19 - Selective Demolition.

1.2 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Shop Drawings: Indicate demolition and removal sequence and location of salvageable items; location and construction of temporary work. Describe demolition removal procedures and schedule.

1.3 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of capped utilities, conduits and equipment abandoned in place.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with local Municipality and state regulation standard.

1.5 PRE-INSTALLATION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.6 SEQUENCING

A. Section 01 10 00 - Summary: Requirements for sequencing.

1.7 SCHEDULING

A. Section 01 30 00 - Administrative Requirements, 01 32 16 - Construction Progress Schedule: Requirements for scheduling.

B. Schedule work to coincide with new construction.

C. Perform noisy, malodorous, and/or dusty work:
   1. During work.

D. Cease operations immediately when structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.

1.8 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.

B. Conduct demolition to minimize interference with adjacent and occupied building areas.

C. Coordinate demolition work with Owner.

D. Coordinate and sequence demolition so as not to cause shutdown of operation of surrounding areas.

E. Shut-down Periods:
   1. Arrange timing of shut-down periods of in service panels with Owner. Do not shut down any utility without prior written approval.
   2. Keep shut-down period to minimum or use intermittent period as directed by Owner.
   3. Maintain life-safety systems in full operation in occupied facilities.

F. Identify salvage items in cooperation with Owner.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

B. Verify wiring and equipment indicated to be demolished serve only abandoned facilities.

C. Verify termination points for demolished services.

3.2 PREPARATION

A. Erect, and maintain temporary safeguards, including warning signs and lights, barricades, and similar measures, for protection of the public, Owner, Contractor's employees, and existing improvements to remain.

B. Temporary egress signage and emergency lighting

3.3 DEMOLITION

A. Demolition Drawings are based on casual field observation and existing record documents. Report discrepancies to Architect/Engineer before disturbing existing installation.

B. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

C. Remove conduit, wire, boxes, and fastening devices to avoid any interference with new installation.

D. Disconnect electrical systems in walls, floors, and ceilings scheduled for removal.

E. Reconnect equipment being disturbed by renovation work and required for continue service to nearest available panel.

F. Disconnect or shut off service to areas where electrical work is to be removed. Remove electrical fixtures, equipment, and related switches, outlets, conduit and wiring which are not part of final project.

G. Install temporary wiring and connections to maintain existing systems in service during construction.

H. Perform work on energized equipment or circuits with experienced and trained personnel.

I. Remove, relocate, and extend existing installations to accommodate new construction.

J. Repair adjacent construction and finishes damaged during demolition and extension work.

K. Remove exposed abandoned grounding and bonding components, fasteners and supports, and electrical identification components, including abandoned components above accessible ceiling finishes. Cut embedded support elements flush with walls and floors.

L. Clean and repair existing equipment to remain or to be reinstalled.

M. Protect and retain power to existing active equipment remaining.

N. Cap abandoned empty conduit at both ends.

O. Perform Work in accordance with applicable code standards.

3.4 EXISTING PANELBOARDS

A. Ring out circuits in existing panel affected by the Work. Where additional circuits are needed, reuse circuits available for reuse. Install new breakers.

B. Tag unused circuits as spare.

C. Where existing circuits are indicated to be reused, use sensing measuring devices to verify circuits feeding Project area or are not in use.

D. Remove existing wire no longer in use from panel to equipment.

E. Provide new updated directories where more than three circuits have been modified or rewired.

3.5 SALVAGE ITEMS

A. Remove and protect items indicated on Drawings to be salvaged and turn over to Owner.

B. Items of salvageable value may be removed as work progresses. Transport salvaged items from site as they are removed.

3.6 REUSABLE ELECTRICAL EQUIPMENT

A. Carefully remove equipment, materials, or fixtures which are to be reused.

B. Disconnect, remove, or relocate existing electrical material and equipment interfering with new installation.

C. Relocate existing lighting fixtures as indicated on Drawings. Clean fixtures and re-lamp. Test fixture to see if it is in good working condition before installation at new location.

3.7 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements & 01 71 00 - Cleaning: Requirements for cleaning.

B. Remove demolished materials as work progresses. Legally dispose.

C. Keep workplace neat.

3.8 PROTECTION OF FINISHED WORK

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Do not permit traffic over unprotected floor surface.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes:
   1. Formwork.
   2. Reinforcement.
   3. Accessories.
   4. Cast-in-place concrete.
   5. Finishing and curing.

1.2 SYSTEM DESCRIPTION

A. Design, engineer and construct formwork, shoring and bracing in accordance with ACI 301 to conform to design and code requirements to achieve concrete shape, line and dimension as indicated on Drawings.

B. Vapor Retarder Premeance: Maximum one (1) perm when tested in accordance with ASTM E96, Procedure A.

1.3 SUBMITTALS

A. Shop Drawings:
   1. Indicate pertinent dimensioning, form materials, location of bracing and temporary supports.
   2. Indicate reinforcement sizes, spacings, locations and quantities, bending and cutting schedules, supporting and spacing devices.
   3. Indicate sidewalks and slabs-on-grade.

B. Product Data: Indicate admixtures and anchors.

C. Design Data: Submit mix designs.

1.4 QUALITY ASSURANCE

A. Construct and erect concrete framework in accordance with ACI 301.

B. Perform concrete reinforcing work in accordance with ACI 301 and CRSA Manual of Practice.

C. Perform cast-in-place concrete work in accordance with ACI 301.

D. Perform Work in accordance with governing body standard.

E. Maintain one (1) copy of each document on site.

F. Design Work under direct supervision of Professional Engineer experienced in design of this Work and licensed in New Jersey.

PART 2 PRODUCTS

2.1 FORM MATERIALS AND ACCESSORIES

A. Form Materials: At discretion of Contractor.

B. Formed Construction Joints for Slab-on-Grade: Galvanized steel, tongue-and-groove type profile, knockout holes to receive doweling..

C. Slab Edge Joint Filler: ASTM D 1751, Premolded asphaltic board, one inch (1") thick.

D. Vapor Retarder: ASTM E 1745 Class A, 6 mil thick, clear polyethylene film, type recommended for below grade application. Furnish joint tape recommended by manufacturer.

E. Void Forms: Moisture-resistant treated paper faces; biodegradable; structurally sufficient to support weight of wet concrete mix until initial set; four inches (4") thick.

2.2 REINFORCEMENT MATERIALS

A. Deformed and Plain Reinforcement: ASTM A615/A615M; 60 ksi yield strength, steel bars.

B. Welded Plain Wire Fabric: ASTM A185; in coiled rolls.

C. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for support of reinforcing; plastic tipped or non-corroding for supports in slabs forming finished ceilings or where supports are exposed to weather.

D. Fabricate concrete reinforcement in accordance with ACI 301 or local code.

E. Weld reinforcement in accordance with AWS D1.4.

2.3 CONCRETE MATERIALS

A. Cement: ASTM C150, Normal-Type I, Portland type.

B. Fine and Coarse Aggregates: ASTM C33, normal weight.

C. Water: Clean and not detrimental to concrete.

D. Air Entrainment Admixture: ASTM C260.

E. Bonding Agent: Polymer resin emulsion.

F. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.

2.4 COMPOUNDS, HARDENERS AND SEALERS

A. Curing Compound: ASTM C309 Type, chlorinated liquid rubber.

B. Absorptive Mats: ASTM C171.

C. Chemical Hardener.

D. Non-Metallic Hardener: Premised natural mineral.

2.5 CONCRETE MIX

A. Mix and deliver concrete in accordance with ASTM C94/C94M.

B. Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 3500 psi at 28 days.
2. Maximum Water-Cementitious Materials Ratio: 0.45.
3. Slump Limit: 4 inches for concrete with verified slump of 2 to 4 inches.
4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 3/4-inch nominal maximum aggregate size.
5. Air Content: Do not allow air content of trowel-finished concrete to exceed 3 percent.
6. Synthetic Micro-Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate, but not less than 1.5 lb/cu. yd.

C. Select admixture proportions for normal weight concrete in accordance with ACI 301 Method 1.

D. Add air-entraining agent to concrete mix for concrete work exposed to exterior.

PART 3 EXECUTION

3.1 FORMWORK ERECTION

A. Erect formwork, shoring and bracing to achieve design requirements.

B. Camber slabs and framing to achieve ACI 301 tolerances.

C. Provide bracing to ensure stability of formwork.

D. Apply form release agent to formwork prior to placing form accessories and reinforcement.

E. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings affected by agent.

F. Clean forms as erection proceeds to remove foreign matter.

3.2 INSERTS, EMBEDDED COMPONENTS AND OPENINGS

A. Provide formed openings where required for work to be embedded in and passing through concrete members.

B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts.

C. Install concrete accessories straight, level and plumb.

D. Install water stops continuous without displacing reinforcement.

E. Place formed construction joint device in floor slab pattern pouring sequence.

F. Place joint filler at perimeter of floor slab, isolation joints and column center lines.

G. Install void forms. Protect forms from moisture before concrete placement and from crushing during concreting.

3.3 REINFORCEMENT PLACEMENT

A. Place reinforcement, supported and secured, against displacement.

B. Ensure reinforcing is clear, free of loose scale, dirt or other foreign coatings.

C. Weld reinforcement in accordance with AWS D1.4.
   1. Do not weld crossing reinforcement bars for assembly, except as permitted by Architect/Engineer.

D. Space reinforcement bars with minimum clear spacing in accordance with ACI 301 of one bar diameter, but not less than one (1) inch.
   1. Where bars are indicated in multiple layers, place upper bars directly above lower bars.

E. Maintain concrete cover around reinforcement in accordance with ACI 301.

3.4 PLACING CONCRETE

A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.

B. Where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack with non-shrink grout.

C. Screed floors, slabs-on-grade and concrete base for toppings level.

3.5 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

B. Remove formwork progressively and in accordance with code requirements.

3.6 SEPARATE FLOOR TOPPPINGS (NOT REQUIRED)

A. Place concrete floor toppings to required lines and levels.

B. Prior to placing, roughen concrete base course and remove deleterious material. Broom and vacuum clean.

C. Place required dividers, edge strips, reinforcing and other items to be case in.

3.7 FLOOR FINISHING (NOT REQUIRED)

A. Finish concrete floor surfaces in accordance with ACI 301.

B. Uniformly spread, screed and float concrete.

C. Maintain surface flatness with maximum variation of 1/8 inch in ten (10) feet.

D. In areas with floor drains, maintain floor level at walls and slope surfaces uniformly to drains.

E. Apply concrete hardener on floor surfaces as indicated.

3.8 CURING

A. Apply sealer on floor surfaces. Place absorptive matting, moisten and keep damp.

B. Immediately after placement, protect concrete from premature drying.

C. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete for seven (7) days.

3.9 FORMED SURFACES

A. Provide concrete surfaces to be left exposes, concrete with smooth rubbed finish.

3.10 ERECTION TOLERANCES

A. Install reinforcement within tolerances required by ACI 301.

3.11 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with ACI 301. Owner will engage a qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Reinforcement Inspection:
   1. Inspect for correct materials, fabrications, sizes, locations, spacing, concrete cover and splicing.

C. Strength Test Samples:
   1. Sample concrete and make one (1) set of five (5) cylinders for every 150 cubic yards or less of each class of concrete placed each day and for every 5,000 square feet of surface area for slabs and walls.

D. Field Testing:
   1. Measure slump and temperature for each compressive strength concrete sample.
   2. Measure air content in air entrained concrete for each compressive strength concrete sample.

E. Cylinder Compressive Strength Testing:
   1. Test Method: ASTM C39.
   2. Test Acceptance: In accordance with ACI 301.
   3. Test one (1) set of two (2) specimens at seven (7) days.
   4. Test one (1) set of two (2) specimens at twenty-eight (28) days.
   5. Retain one (1) cylinder for fifty-six (56) days for testing when requested by Architect/Engineer.
   6. Dispose of remaining cylinders when testing is not required.

3.12 DEFECTION CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations as directed by Architect/Engineer.

4.0 SHOP DRAWINGS

A. Submit full shop drawings on concrete and related items.

END OF SECTION

SECTION 05 40 00

COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This Section includes the following:
   1. Interior non load-bearing wall framing.

1.3 DEFINITIONS

A. Minimum Uncoated Steel Thickness: Minimum uncoated thickness of cold-formed framing delivered to the Project site shall be not less than 95 percent of the thickness used in the cold-formed framing design. Lesser thicknesses shall be permitted at bends due to cold forming.

1.4 SUBMITTALS

A. Product Data: For each type of cold-formed metal framing product and accessory indicated.

B. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining Work.

C. Mill certificates signed by steel sheet producer or test reports from a qualified independent testing agency indicating steel sheet complies with requirements.

D. Welding Certificates: Copies of certificates for welding procedures and personnel. This document is to be included with the bid; refer to the Bid Document Checklist.

E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified. This document is to be included with the bid; refer to the Bid Document Checklist.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed cold-formed metal framing similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance. This document is to be included with the bid; refer to the Bid Document Checklist.

B. Mill certificates signed by steel sheet producer or test reports from a qualified independent testing agency indicating steel sheet complies with requirements, including uncoated steel thickness, yield strength, tensile strength, total elongation, chemical requirements, ductility, and galvanized-coating thickness.

C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

D. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code-Steel," and AWS D1.3, "Structural Welding Code--Sheet Steel."

E. AISI Specifications: Comply with AISI's "Specification for the Design of Cold-Formed Steel Structural Members" or "Load and Resistance Factor Design Specification for Cold-Formed Steel Structural Members" and the following for calculating structural characteristics of cold-formed metal framing.

1. CCFSS Technical Bulletin: "AISI Specification Provisions for Screw Connections."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.

B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering cold-formed metal framing that may be incorporated into the Work include, but are not limited to, the following:
1. Allied American Studco, Inc.
2. California Metal Systems, Inc.
3. Clark Steel Framing Industries.
4. Consolidated Systems, Inc.
5. Design Shapes in Steel.
6. Knorr Steel Framing Systems.

7. Steel Construction Systems.
8. United Metal Products, Inc.
9. Or Architect/Owner approved equal.

2.2 MATERIALS

A. Steel Sheet: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
   1. Grade: 33 for minimum uncoated steel thickness of 0.0428 inch and less; 40 for minimum uncoated steel thickness of 0.0538 inch and greater.
   2. Coating: G60.

2.3 NON-LOAD-BEARING WALL FRAMING

A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, complying with ASTM C 955, and as follows:

   1. Minimum Uncoated-Steel Thickness: 0.0428 inch.
   2. Flange Width: 1 -5/8 inches.

B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with unstiffened flanges, complying with ASTM C 955, and as follows:

   1. Minimum Uncoated-Steel Thickness: 0.0428 inch.
   2. Flange Width: 1-1/4 inches.

C. Single Deflection Track: Manufacturer's single, deep-leg, U-shaped steel track; unpunched, with unstiffened flanges, of web depth to contain studs while allowing free vertical movement, with flanges designed to support horizontal and lateral loads, and as follows:.

   1. Minimum Uncoated-Steel Thickness: 0.0428 inch.
   2. Flange Width: A minimum of 2 inches.

2.4 FRAMING ACCESSORIES

A. Fabricate steel-framing accessories of the same material and finish used for framing members, with a minimum yield strength of 33,000 psi.

B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:

   1. Supplementary framing.
   2. Bracing, bridging, and solid blocking.
   3. Web stiffeners.
   4. End clips.
   5. Foundation clips.
   6. Gusset plates.
   7. Stud kickers, knee braces, and girts.

2.5 ANCHORS, CLIPS, AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123.

B. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel hex-headed bolts and carbon-steel nuts; and flat, hardened-steel washers; zinc coated by hot-dip process according to ASTM A 153/A 153M, Class C.

C. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

D. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.

E. Mechanical Fasteners: Corrosion-resistant-coated, self-drilling, self-threading steel drill screws.

1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.

F. Welding Electrodes: Comply with AWS standards.

2.6 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: SSPC-Paint 20 or DOD-P-21035.

B. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107, with fluid consistency and 30-minute working time.

2.7 FABRICATION

A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to manufacturer's written recommendations and requirements in this Section.

1. Fabricate framing assemblies using jigs or templates.
2. Cut framing members by sawing or shearing; do not torch cut.
3. Fasten cold-formed metal framing members by welding. Wire tying of framing members is not permitted. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
4. Fasten cold-formed metal framing members by welding or screw fastening, as standard with fabricator. Wire tying of framing members is not permitted.

    a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
    b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.

5. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to Shop Drawings.

B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies' level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet (1:960) and as follows:

1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Grout bearing surfaces uniform and level to ensure full contact of bearing flanges or track webs on supporting concrete or masonry construction.

3.3 INSTALLATION, GENERAL

A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.

B. Install cold-formed metal framing according to ASTM C 1007, unless more stringent requirements are indicated.

C. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to manufacturer's written recommendations and requirements in this Section.

1. Cut framing members by sawing or shearing; do not torch cut.
2. Fasten cold-formed metal framing members by welding or screw fastening, as standard with fabricator. Wire tying of framing members is not permitted.

    a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
    b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.

D. Install framing members in one-piece lengths, unless splice connections are indicated for track or tension members.

E. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

F. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.

G. Install insulation in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.

H. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.

I. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet (1:960) and as follows:

1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 NON-LOAD-BEARING-WALL INSTALLATION

A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.

B. Fasten both flanges of studs to top and bottom track, unless otherwise indicated. Space studs as follows:

1. Stud Spacing: 16 inches.

C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.

D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.

1. Install single deep-leg deflection tracks and anchor to building structure.

E. Install horizontal bridging in curtain-wall studs, spaced in rows indicated on Shop Drawings but not more than 54 inches apart. Fasten at each stud intersection.

1. Bridging: Cold-rolled steel channel welded or mechanically fastened to webs of punched studs.

F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, fasteners, and stud girts, to provide a complete and stable curtain-wall-framing system.

3.5 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Touchup Painting: Wire brush, clean, and paint scarred areas, welds, and rust spots on fabricated and installed prime-painted, cold-formed metal framing. Paint framing surfaces with same type of shop paint used on adjacent surfaces.

C. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure cold-formed metal framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

A. Section includes blocking in wall openings; wood furring and grounds; electrical panel back boards and concealed wood blocking.

1.2 SUBMITTALS

A. Shop Drawings: Indicate framing system, loads and cambers, bearing details, framed openings.

1.3 QUALITY ASSURANCE

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

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

C. Apply label from agency approved by authority having jurisdiction to identify each fire retardant treated material.

D. Perform Work in accordance with authorities having jurisdiction.

PART 2 PRODUCTS

2.1 LUMBER MATERIALS

A. Lumber Grading Rules: WWPA G-5.

B. Sill Plate: Pressure treated .40 cca / syp.

2.2 SHEATHING MATERIALS

A. Plywood Roof Sheathing: Plywood; Exposure Durability 1; sanded.

B. Plywood Wall Sheathing: Structural I; Exposure Durability 1; sanded.

2.3 ACCESSORIES

A. Fasteners: Plain finish elsewhere.

B. Die Stamped Connectors:

C. Structural Framing Connectors: Galvanized steel, sized to suit framing conditions.

D. Anchors: Toggle bolt type for anchorage to hollow masonry. Expansion shield and lag bolt type for anchorage to solid masonry or concrete. Bolt or ballistic fastener for anchorages to steel.

E. Sill Gasket: Plate width, closed cell foam strip.

F. Sill Flashing (Under Sill Gasket): Polyethylene sheet or Galvanized steel.

PART 3 EXECUTION

3.1 FRAMING

A. Erect wood framing members in accordance with the International Building Code, latest edition. Place members level and plumb. Place horizontal members crown side up.

B. Place sill gasket directly on sill flashing.

C. Bridging to be provided and installed as per manufacturer specifications.

3.2 SHEATHING

A. Secure sheathing with ends staggered, over firm bearing.

3.3 SITE APPLIED WOOD TREATMENT

A. Treat site-sawn cuts. Brush apply two coats of preservative treatment on untreated wood in contact with cementitious materials, roofing, and related metal flashings.

B. Allow preservative to cure prior to erecting members.

END OF SECTION

SECTION 07 21 00

THERMAL INSULATION

PART 1 GENERAL

1.1 SUMMARY

A. Section includes board thermal insulation and adhesive vapor retarder at cavity wall construction, perimeter foundation wall, exterior wall behind wall finish, batt thermal insulation and vapor retarder in ceilings, exterior wall and roof construction;

1.2 SYSTEM DESCRIPTION

A. System performance to provide continuity of thermal barrier and vapor retarder at building enclosure elements in conjunction with air barrier materials.

B. Vapor Retarder Permeance: Maximum 1 perm (57 ng/Pa/s/sq m) when tested in accordance with ASTM E96, Procedure A.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's product data including thermal performance of materials.

1.4 QUALITY ASSURANCE

A. Furnish and label cellulose loose fill insulation in accordance with CPSC 16 CFR 1209 and CPSC 16 CFR 1404.

B. Insulation Installed in Concealed Locations Surface Burning Characteristics:
   1. Foam Plastic Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
   2. Cellulose Loose Fill Insulation: 450 smoke developed index when tested in accordance with ASTM E84.
   3. Other Insulation: 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

C. Insulation Installed in Exposed Locations Surface Burning Characteristics:
   1. Cellulose Loose Fill Insulation: 450 smoke developed index when tested in accordance with ASTM E84.
   2. Other Insulation Materials: 25/450 flame spread/smoke developed index when tested in accordance with ASTM E84.
   3. Attic Floor Insulation: Minimum 0.12 watt per sq cm critical radiant flux when tested in accordance with ASTM E970.

D. Apply label from agency approved by authority having jurisdiction to identify each foam plastic insulation board and cellulose loose fill insulation package.

E. Perform Work in accordance with State Building Code requirements standard.

F. Maintain one copy of each document on site.

PART 2 PRODUCTS

2.1 BUILDING INSULATION

A. Manufacturers:
   1. AFM - Molded Polystyrene Insulation;
   2. EPS - Molded Polystyrene Insulation;
   3. W.R. Grace Construction Products;
   4. DiversiFoam Products;
   5. Dow Chemical;
   6. Tenneco Foam Products;
   7. UC Industries/Owens Corning;
   8. Celotex;
   9. Substitutions: Architect/Owner Approved Equal.

2.2 COMPONENTS

A. Mineral Fiber Insulation: ASTM C612 Class 1, mineral fiber rigid board
   1. Board Edges: Square. R values as indicated on Drawings.

B. Glass Fiber Insulation, R values as indicated on Drawings.

C. Batt Insulation: ASTM C665, batt blanket, R values as indicated on Drawings

2.3 ACCESSORIES

A. Adhesive: Type recommended by insulation manufacturer for application.

B. Air Barrier: In accordance with SWRI-Sealant and Caulking Guide Specification requirements for material and installation.

C. Tape: Bright aluminum, mesh reinforced.

D. Insulation Fasteners: Impaling clip of galvanized steel with washer retainer and clips, to be mechanically fastened to surface to receive board insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

E. Protective Boards: Cementitious 1/4 inch (6mm) thick.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate, adjacent materials, and insulation boards are dry and ready to receive insulation and adhesive.

3.2 INSTALLATION

A. Batt Insulation:
   1. Install where indicated on drawings without gaps or voids.
   2. Fit insulation tight in spaces. Leave no gaps or voids.
   3. Install friction fit insulation tight to framing members, completely filling prepared spaces.

END OF SECTION

SECTION 07 84 00

FIRESTOPPING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes Firestopping and through-penetration protection system materials and accessories; firestopping tops of fire rated walls; and smoke sealing at joints between floor slabs and exterior walls.

1.2 REFERENCES

A. ASTM International:
   1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   2. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
   3. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
   4. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems.

B. Intertek Testing Services (Warnock Hersey Listed):
   1. WH - Certification Listings.

C. National Fire Protection Association:
   1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.

D. Underwriters Laboratories Inc.:
   1. UL 263 - Fire Tests of Building Construction and Materials.
   2. UL 723 - Tests for Surface Burning Characteristics of Building Materials.
   3. UL 1479 - Fire Tests of Through-Penetration Firestops.
   4. UL 2079 - Tests for Fire Resistance of Building Joint Systems.
   5. UL - Fire Resistance Directory.

1.3 DEFINITIONS

A. Firestopping (Through-Penetration Protection System): Sealing or stuffing material or assembly placed in spaces between and penetrations through building materials to arrest movement of fire, smoke, heat, and hot gases through fire rated construction.

1.4 PERFORMANCE REQUIREMENTS

A. Conform to applicable code for fire resistance ratings and surface burning characteristics.

B. Provide certificate of compliance from authority having jurisdiction indicating approval of materials used.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data: Submit data on product characteristics, performance and limitation criteria.

C. Schedule: Submit schedule of opening locations and sizes, penetrating items, and required listed design numbers to seal openings to maintain fire resistance rating of adjacent assembly.

D. Manufacturer's Installation Instructions: Submit preparation and installation instructions.

E. Manufacturer's Certificate: Certify products meet or exceed applicable code requirements.

F. Engineering Judgements: For conditions not covered by UL or WH listed designs, submit judgements by licensed professional engineer suitable for presentation to authority having jurisdiction for acceptance as meeting code fire protection requirements.

1.6 QUALITY ASSURANCE

A. Through Penetration Firestopping of Fire Rated Assemblies: UL 1479 or ASTM E814 with 0.10 inch water gage minimum positive pressure differential to achieve fire F-Ratings and temperature T-Ratings as per the fire rating of the assembly being penetrated, but not less than 1-hour.
   1. Wall Penetrations: Fire F-Ratings as per the fire rating of the assembly being penetrated, but not less than 1-hour.
   2. Floor and Roof Penetrations: Fire F-Ratings and temperature T-Ratings as per the fire rating of the assembly being penetrated, but not less than 1-hour.
      a. Floor Penetrations within Wall Cavities: T-Rating is not required.

B. Through Penetration Firestopping of Non-Fire Rated Floor and Roof Assemblies: Materials to resist free passage of flame and products of combustion.
   1. Noncombustible Penetrating Items: Noncombustible materials for penetrating items connecting maximum of three stories.
   2. Penetrating Items: Materials approved by authorities having jurisdiction for penetrating items connecting maximum of two stories.

C. Fire Resistant Joints in Fire Rated Floor, Roof, and Wall Assemblies: ASTM E1966 or UL 2079 to achieve fire resistant rating as per the fire rating of the assembly being penetrated in which joint is installed.

D. Fire Resistant Joints between Floor Slabs and Exterior Walls: ASTM E119 with 0.10 inch water gage minimum positive pressure differential to achieve fire resistant rating as per the fire rating of the assembly being penetrated.

E. Surface Burning Characteristics: Maximum 25/450 flame spread/smoke developed index when tested in accordance with NFPA 255.

F. Perform Work in accordance with Authorities having jurisdiction.

G. Maintain one copy of each document on site.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Applicator: Company specializing in performing Work of this section with minimum three years documented experience, and approved by manufacturer.

1.8 MOCKUP

A. Section 01 40 00 - Quality Requirements: Requirements for mockup.

B. Apply 1 linear ft of each type of linear firestopping material to representative substrate surface.

C. Apply one of each unit type of firestopping material, such as penetrations through fire rated partition, to representative application.

D. Locate where directed by Architect/Engineer.

E. Remove mockup when directed by Architect/Engineer.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Do not apply materials when temperature of substrate material and ambient air is below 60 degrees F.

C. Maintain this minimum temperature before, during, and for minimum 3 days after installation of materials.

D. Provide ventilation in areas to receive solvent cured materials.

PART 2 PRODUCTS

2.1 FIRESTOPPING

A. Manufacturers:
1. A/D Fire Protection Systems, Inc.

2. Dow Corning Corp.
3. Fire Trak Corp.
4. Hilti Corp.
5. 3M fire Protection Products
6. Substitutions: Architect/Owner Approved Equal

B. Product Description: Different types of products by multiple manufacturers are acceptable as required to meet specified system description and performance requirements; provide only one type for each similar application.
1. Silicone Firestopping Elastomeric Firestopping: Single component silicone elastomeric compound and compatible silicone sealant.
2. Foam Firestopping Compounds: Single component foam compound.
3. Formulated Firestopping Compound of Incombustible Fibers: Formulated compound mixed with incombustible non-asbestos fibers.
4. Fiber Stuffing and Sealant Firestopping: Composite of mineral or ceramic fiber stuffing insulation with silicone elastomer for smoke stopping.
5. Mechanical Firestopping Device with Fillers: Mechanical device with incombustible fillers and silicone elastomer, covered with sheet stainless steel jacket, joined with collars, penetration sealed with flanged stops.
6. Intumescent Firestopping: Intumescent putty compound which expands on exposure to surface heat gain.
7. Firestop Pillows: Formed mineral fiber pillows.

C. Color: As selected from manufacturer's full range of colors.

2.2 ACCESSORIES

A. Primer: Type recommended by firestopping manufacturer for specific substrate surfaces and suitable for required fire ratings.

B. Dam Material: Permanent:
1. Mineral fiberboard.
2. Mineral fiber matting.

C. Installation Accessories: Provide clips, collars, fasteners, temporary stops or dams, and other devices required to position and retain materials in place.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify openings are ready to receive firestopping.

3.2 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter affecting bond of firestopping material.

B. Remove incompatible materials affecting bond.

C. Install damming materials to arrest liquid material leakage.

3.3 APPLICATION

A. Install material at fire rated construction perimeters and openings containing penetrating sleeves, piping, ductwork, conduit and other items, requiring firestopping.

B. Apply primer where recommended by manufacturer for type of firestopping material and substrate involved, and as required for compliance with required fire ratings.

C. Apply firestopping material in sufficient thickness to achieve required fire and smoke rating, to uniform density and texture.

D. Compress fibered material to maximum 40 percent of its uncompressed size.

E. Dam material to remain.

3.4 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements & 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspect installed firestopping for compliance with specifications and submitted schedule.

3.5 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Clean adjacent surfaces of firestopping materials.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

B. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 07 90 00

JOINT SEALERS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes sealants and joint backing.

1.2 SUBMITTALS

A. Product Data: Submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

1.3 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by sealant manufacturer during and after installation.

PART 2 PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:
1. Dow Corning Corp.
2. GE Silicones.
3. Mameco International Inc.
4. Pecora Corp.
5. Sika Corp.
6. Substitutions: Architect/Owner Approved Equal

B. Product Description:

1. General Purpose Exterior Nontraffic Sealant: Acrylic, solvent release curing; ASTM C920, Grade NS, Class 12-1/2, Uses M, G, and A; single or multi-component.
   a. Color: Colors as selected.
   b. Applications: Use for:
      1) Control, expansion, and soft joints in masonry.
      2) Joints between concrete and other materials.
      3) Joints between metal frames and other materials.
      4) Other exterior nontraffic joints for which no other sealant is indicated.
2. General Purpose Traffic Bearing Sealant: Polyurethane; ASTM C920, Grade P, Class 25, Use T; single or multi-component.
   a. Color: Colors as selected.
   b. Applications: Use for exterior and interior pedestrian traffic bearing joints.

3. Exterior Compressible Gasket Expansion Joint Sealer: ASTM D2628, hollow neoprene (polychloroprene) compression gasket.
   a. Color: Black color.
   b. Size and Shape: As indicated on Drawings.
   c. Applications: Use for exterior wall expansion joints.
4. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, non-drying, non-skinning, non-curing.
   a. Applications: Use for concealed sealant bead in sheet metal work and concealed sealant bead in siding overlaps.
5. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
   a. Color: Colors as selected.
   b. Applications: Use for interior wall and ceiling control joints, joints between door and window frames and wall surfaces, and other interior joints for which no other type of sealant is indicated.
6. Bathtub/Tile Sealant : White silicone; ASTM C920, Uses M and A; single component, mildew resistant.
   a. Applications: Use for joints between plumbing fixtures and floor and wall surfaces, and joints between kitchen and bathroom toilet room counter tops and wall surfaces.
7. Acoustical Sealant : Butyl or acrylic sealant; ASTM C920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
   a. Applications: Use for concealed locations only at acoustically rated construction.
      1) Provide sealant bead between top stud runner and structure and between bottom stud track and floor.

2.2 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate surfaces and joint openings are ready to receive work.

B. Verify joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Remove loose materials and foreign matter impairing adhesion of sealant.

B. Clean and prime joints.

C. Perform preparation in accordance with ASTM C1193.

3.3 INSTALLATION

A. Perform installation in accordance with ASTM C1193.

B. Perform acoustical sealant application work in accordance with ASTM C919.

C. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer [, except where specific dimensions are indicated].

D. Install bond breaker where joint backing is not used.

E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

G. Tool joints concave channel shaped.

END OF SECTION

SECTION 081113

STEEL DOORS & FRAMES

PART 1 GENERAL

1.0 SUMMARY

A. Section includes non-rated and fire rated steel doors & steel door frames.

1.2 SUBMITTALS

B. Shop Drawings: Indicate door and frame elevations, fastening method, internal reinforcements, and cutouts for hardware and finishes.

C. Product Data: Submit door and frame configurations, location of cutouts for hardware reinforcement.

1.3 QUALITY ASSURANCE

D. Perform Work in accordance with the Public Work's standard.

E. Perform Work in accordance with the following:
   1. SDI-100-Standard Steel Doors and Frames.
   2. DHI - Door Hardware Institute - The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
   3. Fire Rated Doors, Panels and Frames:
      a. Product Construction: ASTM E152. NFPA 252. UL 10B.
      b. Product Installation: NFPA 80.

PART 2 PRODUCTS

2.1 STEEL DOORS AND FRAMES

A. Manufacturers:
   1. Pioneer Industries.
   2. Republic Builders Products.
   3. Substitutions: Architect/Owner Approved Equal

2.2 COMPONENTS

B. Exterior Frames: 14 gauge thick material, base metal thickness (galvanized).

C. Interior Frames: 16 gauge thick material, base metal thickness.

2.3 ACCESSORIES

D. Silencers: Resilient rubber fitted into drilled hole.

2.4 FABRICATION

E. Fabricate frames with hardware reinforcement welded in place. Protect frame hardware preparations with mortar guard boxes.

F. Configure exterior frames with profile to receive recessed weather-stripping.

G. Fabricate frames welded units for cmu walls; as knock down units for board partitions.

H. Fabricate frames to suit masonry wall coursing with 4 inches head member.

I. Prepare interior frames for silencers and install.

J. Attach fire-rating label to each fire rated doorframe.

2.5 SHOP FINISHING

K. Steel Sheet: Galvanized to ASTM A653/A653M G60.

L. Primer: Baked.

M. Shop Finish: Baked enamel.

N. Coat inside of frame profile with bituminous coating.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install doors & frames in accordance with SDI-100.

B. Coordinate installation of doors & frames with installation of hardware specified in Section 087100.

C. Coordinate doors & frames with masonry gypsum board wall construction for frame anchor placement.

D. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

E. Install door louvers plumb and level (where indicated on drawings).

F. Adjust door for smooth and balanced door movement.

G. Tolerances:
   1. Maximum Diagonal Distortion: 1/16 inch, measured with straight edge, corner to corner.

3.3 SCHEDULE

A. Refer to Drawings for Door Schedule and details.

4.0 METAL DOORS

A. Exterior Doors – 16 gauge (insulated)

B. Interior Door – 18 gauge

END OF SECTION

SECTION 08 41 00

ALUMINUM-FRAMED ENTRANCES AND STOREFRONT
(WIDE STILE DOORS)

PART 1 - GENERAL

1.01 SUMMARY

A. Related Documents: Conditions of the Contract, Division 1 - General Requirements, and Drawings apply to Work of this Section.

B. Section Includes:
1. Aluminum doors complete with hardware.

C. Related Sections:

1.	Section 06 10 00	Rough Carpentry.
2.	Section 07 92 00	Joint Sealants.
3.	Section 08 71 00	Door Hardware.
4.	Section 08 80 00	Glazing.

1.02 REFERENCES

A. Aluminum Association (AA):

1.	DAF-45	Designation System for Aluminum Finishes.

B. American Architectural Manufacturers Association (AAMA):

1.	501.2	Field Check of Metal Curtain Walls for Water Leakage.
2.	2605	Voluntary Specification for High Performance Organic Coatings on Architectural Extrusions and Panels.
3.	606.1	Specifications and Inspection Methods for Integral Color Anodic Finishes for Architectural Aluminum.
4.	607.1	Specifications and Inspection Methods for Clear Anodic Finishes for Architectural Aluminum.
5.	608.1	Specification and Inspection Methods for Electrolytically Deposited Color Anodic Finishes for Architectural Aluminum.
6.	701.2	Specifications for Pile Weatherstripping.
7.	Manual #10	Care and Handling of Architectural Aluminum from Shop to Site.
8.	SFM-1	Aluminum Storefront and Entrance Manual.

C. American National Standards Institute (ANSI):

1.	A117.1	Safety Standards for the Handicapped.

D. American Society for Testing and Materials (ASTM):

1.	A36	Structural Steel.
2.	A123	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
3.	B209	Aluminum and Aluminum - Alloy Sheet and Plate.
4.	B221	Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
5.	B308	Aluminum-Alloy 6061-T6 Standard Structural Shapes, Rolled or Extruded.
6.	E283	Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors.
7.	E330	Test Method for Structural Performance of Exterior Windows, Curtain

Walls, and Doors by Uniform Static Air Pressure Difference.

8. E331 Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

E. Federal Specifications (FS):
   1. TT-P-641G(1) Primer Coating, Zinc Dust-Zinc Oxide (For Galvanized Surfaces).
   2. TT-P-645A Primer, Paint, Zinc Chromate, Alkyd Type.

F. Steel Structures Painting Council (SSPC):
   1. Paint 12 Cold-Applied Asphalt Mastic (Extra Thick Film).

1.03 SYSTEM REQUIREMENTS

A. Design Requirements:
   1. Drawings are diagrammatic and do not purport to identify nor solve problems of thermal or structural movement, glazing, anchorage, or moisture disposal.
   2. Requirements shown by details are intended to establish basic dimension of units, sight lines and profiles of members.
   3. Provide concealed fastening.
   4. Provide entrance and storefront systems, including necessary modifications, to meet specified requirements and maintaining visual design concepts.
   5. Attachment considerations are to take into account site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing connection between units and building structure or between units themselves.
   6. Anchors, fasteners, and braces shall be structurally stressed not more than 50% of allowable stress when maximum loads are applied.
   7. Provide for expansion and contraction due to structural movement without detriment to appearance or performance.

1.04 SUBMITTALS

A. General: Submit in accordance with Section 01 30 00.

B. Product Data:
   1. Submit manufacturer's descriptive literature and product specifications.
   2. Include information for factory finishes, hardware, accessories, and other required components.
   3. Include color charts for finish indicating manufacturer's standard colors available for selection.

C. Shop Drawings:
   1. Submit shop drawings covering fabrication, installation, and finish of specified systems.
   2. Include following:
      a. Fully dimensioned plans and elevations with detail coordination keys.
      b. Locations of exposed fasteners and joints.
   3. Provide detailed drawings of:
      a. Composite members.
      b. Joint connections for framing systems and for entrance doors.
      c. Anchorage.
      d. System reinforcements.
      e. System expansion and contraction provisions.
      f. Glazing methods and accessories.
      g. Internal sealant requirements and recommended types.
   4. Schedule of finishes.

D. Samples:
   1. Submit manufacturers standard samples indicating quality of finish.
   2. Where normal texture or color variations are expected, include additional samples illustrating range of variation.
   3. Submit samples for each type of glass, 12 x 12-inch size.

E. Qualification Data:
   1. Submit installer qualifications verifying years of experience.

1.05 QUALITY ASSURANCE

A. Single Source Responsibility: To ensure quality of appearance and performance, obtain materials for systems from either a single manufacturer or from manufacturer approved by systems manufacturer.

B. Installer Qualifications: Certified in writing by system manufacturer as qualified for installation of specified systems.

C. Perform Work in accordance with AAMA SFM‑1 and manufacturer's written instructions.

D. Conform to requirements of ANSI A117.1 and local amendments.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of Section 01 65 00 - 01 66 00.

B. Protect finished surfaces as necessary to prevent damage.

C. Do not use adhesive papers or sprayed coatings which become firmly bonded when exposed to sun.

D. Do not leave coating residue on any surfaces.

E. Replace damaged units.

1.07 WARRANTY

A. Provide written warranty in form acceptable to Owner jointly signed by manufacturer, installer and Contractor warranting work to be watertight, free from deflective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components which fail within 1 year from date of Substantial Completion.

B. Warranty shall cover following:
   1. Complete watertight and airtight system installation within specified tolerances.
   2. System is structurally sound and free from distortion.

B. Provide written warranty stating organic coating finish will be free from fading more than 10%, chalking, yellowing, peeling, cracking, pitting, corroding or non-uniformity of color, or gloss deterioration beyond manufacturer's descriptive standards for 5 years from date of Substantial Completion and agreeing to promptly correct defects.

PART 2 - PRODUCTS

2.01 MANUFACTURERS AND PRODUCTS

A. Subject to compliance with requirements indicated, provide products by one of the following:
1. Oldcastle BuildingEnvelope®, Terrell, TX.

C. Substitutions: Architect/Owner approved equal.

C. Acceptable Entrance Systems:
Standard duty systems (0.125" wall thickness; 1-3/4" deep)
WS-500TC - wide stile thermal (8" (203.2mm)(10" (254mm)) bottom rail, 4" (101.6mm) top rail, 5" (127mm) verticals)

2.02 FRAMING MATERIALS AND ACCESSORIES

A. Aluminum:
1. ASTM B221, alloy 6063-T6 for extrusions; ASTM B209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.

B. Internal Reinforcing:
1. ASTM A36 for carbon steel; or ASTM B308 for structural aluminum.
2. Shapes and sizes to suit installation.
3. Steel components factory coated with alkyd type zinc chromate primer complying with FS TT-P-645.

C. Anchorage Devices:
1. Manufacturer's standard formed or fabricated steel or aluminum assemblies of shapes, plates, bars, or tubes.
2. Hot-dip galvanize steel assemblies after fabrication, comply with ASTM A123, 2.0-ounce minimum coating.

D. Fasteners:
1. Aluminum, non-magnetic stainless steel, or other non-corrosive materials compatible with items being fastened.
2. Provide concealed fasteners wherever possible.
3. For exposed locations, provide Phillips flathead screws with finish matching item fastened.
4. For concealed locations, provide manufacturer's standard fasteners.

E. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.

F. Protective Coatings: Cold-applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil thickness for each coat; or alkyd type zinc chromate primer complying with FS TT-P-645.

G. Touch-Up Primer for Galvanized Components: Zinc oxide conforming with FS TT-P-641.

H. Glazing Gaskets:
1. Compression type design, replaceable, molded, or extruded, of neoprene, polyvinyl chloride (PVC), or ethylene propylene diene monomer (EPDM).
2. Profile and hardness as required to maintain uniform pressure for watertight seal.

I. Weatherstripping:

1. Wool pile conforming to AAMA 701.2.
2. Provide EPDM or vinyl‑blade gasket weatherstripping in bottom door rail, adjustable for contact with threshold.

2.03 GLASS AND GLAZING ACCESSORIES

A. Refer to Section 08 80 00.

2.04 DOOR HARDWARE

A. Refer to Section 08 71 00

2.05 FABRICATION

A. Coordination of Fabrication:
1. Check actual frame or door openings required in construction work by accurate field measurements before fabrication.
2. Fabricate units to withstand loads which will be applied when system is in place.

B. General
1. Conceal fasteners wherever possible.
2. Reinforce work as necessary for performance requirements, and for support to structure.
3. Separate dissimilar metals and aluminum in contact with concrete utilizing protective coating or preformed separators which will prevent contact and corrosion.
4. Comply with Section 08 80 00 for glazing requirements.

D. Entrance Doors:
1. Fabricate with mechanical joints using internal steel reinforcing plates and shear blocks attached with fasteners and by welding.
2. Provide extruded aluminum glazing stops of rounded and mitered design, permanently anchored on security side and removable on opposite side.

E. Hardware:
1. Receive hardware supplied in accordance with Section 08 71 00 and install in accordance with requirements of this Section.
2. Cut, reinforce, drill, and tap frames and doors as required to receive hardware.
3. Comply with hardware manufacturer's templates and instructions.
4. Use concealed fasteners wherever possible.

F. Welding:
1. Comply with recommendations of the American Welding Society.
2. Use recommended electrodes and methods to avoid distortion and discoloration.
3. Grind exposed welds smooth and flush with adjacent surfaces; restore mechanical finish.

G. Flashings: Form from sheet aluminum with same finish as extruded sections. Material thickness as required to suit condition without deflection or "oilcanning".

2.06 FINISHES

A. Anodized, color as selected by Owner:
1. Conforming to AA-M12C22A31 and AAMA 607.1.
2. Architectural Class II, etched, medium matte, clear anodic coating, 0.4 mil minimum thickness.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine conditions and proceed with Work in accordance with Section 01 40 00.

3.02 INSTALLATION

A. Erection Tolerances:
   1. Limit variations from plumb and level:
      a. 1/8 inch in 10'-0" vertically.
      b. 1/8 inch in 20'-0" horizontally.
   2. Limit variations from theoretical locations: 1/4 inch for any member at any location.
   3. Limit offsets in theoretical end-to-end and edge-to-edge alignment: 1/16 inch from flush surfaces not more than 2 inches apart or out-of-flush by more than 1/4 inch.

B. Install doors and hardware in accordance with manufacturer's printed instructions.

D. Set units plumb, level and true to line, without warp or rack of frame.

E. Anchor securely in place, allowing for required movement, including expansion and contraction.

F. Separate dissimilar materials at contact points, including metal in contact with masonry or concrete surfaces, with bituminous paint or preformed separators to prevent contact and corrosion.

G. Set sill members in bed of sealant. Set other members with internal sealants and baffles to provide weathertight construction.

H. Coordinate installation of perimeter sealant and backing materials between assemblies and adjacent construction in accordance with requirements of Section 07 92 00.

H. Glazing: Refer to requirements of Section 08 80 00.

3.03 ADJUSTING

A. Test door operating functions. Adjust closing and latching speeds and other hardware in accordance with manufacturer's instructions to ensure smooth operation.

3.04 CLEANING

A. Clean surfaces in compliance with manufacturer's recommendations; remove excess mastic, mastic smears, foreign materials, and other unsightly marks.

B. Clean metal surfaces exercising care to avoid damage.

END OF SECTION

SECTION 08 44 13

GLAZED ALUMINUM CURTAIN WALL
(RELIANCE™ UNIT WALL)

PART 1 - GENERAL

1.01 SUMMARY

A. Related Documents: Conditions of the Contract, Division 1 - General Requirements, and Drawings apply to Work of this Section.

B. Section Includes:
1. Aluminum curtain wall systems, complete with reinforcing, shims, and anchors.
2. Accessories necessary to complete Work.

C. Related Sections:

1.	Section 06 10 00	Rough Carpentry.
2.	Section 07 92 00	Joint Sealants.
3.	Section 08 41 00	Aluminum-Framed Entrances and Storefront.
5.	Section 08 71 00	Door Hardware
6.	Section 08 80 00	Glazing

1.02 SYSTEM REQUIREMENTS

A. General Standard: In addition to requirements shown or specified, comply with applicable provisions of Aluminum Curtain Wall Design Guide Manual for design, materials, fabrication, and installation of component parts.

B. Design Requirements:
1. Unitized curtainwall with exterior captured and non-captured appearance .
2. Operable vent with minimal sight line viewed from the exterior.
3. System manufacturer shall provide low profile entrance frames as an integral part of the curtain wall system.
4. System manufacturer shall provide curtainwall systems, including necessary modifications to meet specified requirements and maintaining visual design concepts.
5. Fabricate glazing systems for exterior glazing at vision areas and exterior glazing at spandrel areas. A heal bead 3" around perimeter of the corners of glass is required to prevent water / air infiltration. Note: Glass replacement will be from exterior.
6. Perimeter conditions shall allow for installation tolerances, expansion and contraction of adjacent materials, and sealant manufacturer's recommended joint design.
7. Drawings are diagrammatic and do not purport to identify nor solve problems of thermal or building structural movement, glazing, anchorage, or moisture disposal. Proposed curtain wall system shall be designed to accommodate such movements. It is the responsibility of the design team to provide this information to the curtain wall contractor. Proper stack joint sizes will be largely dependent on the amount of the slab live-load, and thermal temperature range.
8. Requirements shown by details are intended to establish basic dimension of unit, sight lines and profiles of members.
9. Do not assume glass, sealants, and interior finishes contribute to framing member strength, stiffness, or lateral stability.
10. Attachment considerations are to take into account site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening or fracturing

connection between units and building structure or between units themselves.

11. Allow for expansion and contraction due to structural movement without detriment to appearance or performance.
12. System shall drain to exterior face of wall, water entering rain screen joints and condensation occurring within system by drain holes and gutters of adequate size to evacuate water without infiltration to interior.
13. Provide acceptable color range and profile appearance at components exposed to view.
14. Provide continuous EPDM air seal gaskets. Primary air / water seal gasket to be SCR-900. Provide silicone sheet material acting as splice from unit to unit to provide continuous gutter around each floor line.
15. Provide 22-gauge galvanized steel back pan @ spandrel areas. Spandrel area to include insulation with project specific R-value requirements. Spandrel areas should be properly vented and / or weeped to prevent condensation in this area.
16. Provide shadow box details. The shadow box detail assembly should include non-visible ventilation and / or weep holes to exterior of the curtain wall. These vents will not be directly exposed to the exterior environment. Exposed fasteners will not be permitted.
17. Not Permitted: Vibration harmonics, wind whistles, noises caused by thermal movement, thermal movement transmitted to other building elements, loosening, weakening, or fracturing of attachments or components of system.
18. Stresses placed on structural glazing tapes shall be kept within 3M's™ recommended maximum. Mandatory project review by 3M is required before ordering 3M™ VHB™ Structural Glazing Tape. Please contact 3M at 1-800-336-9847 to initiate the project review and for ordering 3M™ VHB™ Structural Glazing Tape B23F (black tape) or G23F (gray tape) through authorized 3M Distributors.
19. Cleaning and preparation of materials to be in contact with structural glazing tape must be cleaned properly as recommended by sealant manufacture.
20. Proper compatibility and adhesion analysis of substrates to be provided by glazing tape manufacturer.
21. As a minimum, aluminum shapes to be in contact with structural silicone to receive an alodine finish. Structural sealant directly attaching to mill finished aluminum is not acceptable.

C. Performance Requirements:

1. Air infiltration: Air leakage shall not exceed 0.06 cfm per square foot (0.0003 m3/s-m2 @ 300 Pa) of surface area when tested in accordance with ASTM E283 at differential static pressure of 6.24 psf (300 Pa).
2. Water Resistance (static): No uncontrolled leakage when tested in accordance with ASTM E331 at test pressure of 15.0 psf (720 Pa) as defined in AAMA 501.
3. Water Resistance (dynamic): No uncontrolled leakage when tested in accordance with ASTM E331 at test pressure of 15.0 psf (720 Pa) as defined in AAMA 501.
4. Uniform Load: A static air design load shall be applied in a positive and negative direction in accordance with ASTM E 330. At structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.

D. Structural Requirements:

1. Wind loading: 130 MPH
2. Deflection under uniform loading: When tested in accordance with ASTM E330 at design pressure, maximum deflection of exterior member shall not exceed L/175 for spans up to 13'-6" (4.115m), or L/240 + 1/4" (6.4mm) for spans greater than 13'-6" (4.115m), or maximum ¾" (19.1mm) over individual glass lite.
3. Parallel to wall deflections: For horizontal framing members which support glass, deflection of those members in the direction parallel to the plane of the wall should not

exceed an amount which will reduce the glass bite below 75% of the design dimension nor an amount which would infringe upon necessary glazing clearances below. Deflection should also be limited in the direction to provide at least 1/8" (3mm) minimum clearance between the member and the top of the fixed glazed pane, glass or other fixed part immediately below. Clearance between the member and an operable window or door below should be at least 1/16" (1.5mm).

4. Compression flanges of flexural members may be assumed to receive effective lateral bracing only from:
   a. Anchors to building structure and
   b. Horizontal glazing rails or interior trim.
   c. Interlocking channels with continuous locking mechanism in front and back of member.
   d. Intermittent internal anti-buckling clips.
5. Do not regard points of contra-flexure as lateral braces or as end points of un-braced length; un-braced length is actual distance between effective lateral braces as defined above.
6. Where framing member reaction is resisted by continuous element, maximum assumed effective length of the resisting element is 4 times bearing length, but not more than 12 inches (305mm).

E. Thermal Requirements: Framing systems shall accommodate expansion and contraction movement due to surface temperature differential of 180°F (82.2°C) without causing buckling, stress on glass, failure of joint seals, excessive stress on structural elements, reduction of performance or other detrimental effects.

F. Thermal Transmittance (U-factor): When tested to AAMA Specification 1503, the thermal transmittance (U-Factor) shall not be more than .36 for captured and .34 for non-captured.

G. Condensation Resistance (CRF): When tested to AAMA Specification 1503, the condensation resistance factor for the frame shall not be less than 72 for captured and 74 for non-captured.

H. Seismic: When tested to AAMA 501.4, system must meet design displacement of 0.010 x the story height, ultimate displacement of 0.015 x the story height, and fall out displacement of 0.025 x the story height.

I. Interstory (vertical live load movement) in accordance with the project specs and the AAMA 501.7 method. The intermediate chamber beam supporting the mock-up shall be lifted and lowered 1/2". The system shall be cycled three (3) times. One (1) cycle shall consist of the chamber beam supporting the system being lifted to the noted dimension, back to start point, then lowered to the noted dimension and back to the start point. Project criteria required the system be left in the full open position and remain at the setting for the remainder of all subsequent testing.

J. Thermal cycle testing per AAMA 501.5 This test method consists of sealing the thermal chamber onto a selected section of the mock-up and conducting three (3) thermal cycles per project specified high and low temperatures. Specified temperatures shall be hot 180° (+/-5°F) and cold 10° (+/-5°F) with an interior ambient temperature of 75° (+/-5°F).

K. Sound Transmission:
   1. When tested to ASTM E90-09, the Sound Transmission Class (STC) shall not be less than 37 (RUW captured framing) and 38 for (RUW and Non-captured framing) based upon 1" (25mm) insulating laminated glass (1/4" (6mm) Lam, 1/2" (12.7mm) AS, 1/4" (6mm) Lam).
   2. When tested to ASTM E90-09, the Sound Transmission Class (STC) shall not be less

than 34 (RUW captured or Non-captured framing) based upon 1” (25mm) insulating laminated glass (1/4” clear temp, 1/2” (12.7mm) AS, 1/4” clear temp).

L. Outdoor Indoor Transmission:
1. When tested to ASTM E90-09, the Outdoor Indoor Transmission Class (OITC) shall not be less than 30 (RUW captured or Non-captured framing) based upon 1” (25mm) insulating laminated glass (1/4” (6mm) Lam, 1/2” (12.7mm) AS, 1/4” (6mm) Lam).
2. When tested to ASTM E90-09, the Outdoor Indoor Transmission Class (OITC) shall not be less than 28 (RUW captured or Non-captured framing) based upon 1” (25mm) insulating laminated glass (1/4” clear temp, 1/2” (12.7mm) AS, 1/4” clear temp.

M. Laboratory Testing: Refer to Section 01 40 00 for requirements.

N. Interface:
1. Furnish inserts and anchoring devices, which need to be preset and built into structure to appropriate trade.
2. Supply on timely basis to avoid delay in Work.
3. Instruct other trades of proper location and position.
4. Furnish setting drawings, diagrams, templates, and installation instructions.
5. Anchor design to accommodate 1” (25.4mm) building structure tolerance in all directions

1.03 SUBMITTALS

A. General: Submit in accordance with Section 01 30 00.

B. Product Data:
1. Submit manufacturer's descriptive literature for each manufactured product.
2. Include information for factory finishes, accessories, and other required components.
3. Include color charts for finish indicating manufacturer's standard colors and range available for selection.

C. Shop Drawings:
1. Submit drawings indicating elevations, detailed design, dimensions, member profiles, joint locations, arrangement of units, member connections, and thickness of various components.
2. Show following items:
a. Details of special shapes.
b. Reinforcing.
c. Drainage details and flow diagrams.
d. Anchorage system.
e. Interfacing with building construction.
f. Provisions for system expansion and contraction.
g. Thermal breaks.
4. Indicate glazing details, methods, locations of various types and thickness of glass, emergency breakout locations, and internal sealant requirements.
5. Clearly indicate locations of exposed fasteners and joints for Architect's acceptance.
6. Clearly show where and how manufacturer's system deviates from Contract Drawings and these Specifications.

D. Samples:
1. Submit manufactures samples indicating quality of finish in required colors and range.
2. Where normal texture or color variations are expected, include additional samples

illustrating range of variation.
3. Submit samples of structural glazing gaskets, 12-inch (305mm) lengths.
4. Submit samples of sealants for color selection.

E. Test Reports: Submit certified copies of previous tests reports by independent laboratory substantiating performance of system. Include other supportive data, as necessary.

F. Manufacturer's Instructions: Submit manufacturer's printed installation instructions.

G. Warranty: Submit specified warranties.

1.04 QUALITY ASSURANCE

A. Single Source Responsibility:
1. Provide curtain wall systems that are products of a single manufacturer.

B. Engineer Qualifications: Professional Engineer registered licensed in State where Project is located.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of Sections 01 60 00.

B. Protect finished surfaces to prevent damage.

C. Do not use adhesive papers or sprayed coatings, which become firmly bonded when exposed to sun.

D. Do not leave coating residue on surfaces.

E. Ensure labels indicate glass thickness, unit location, glass strength and orientation of units in vertical position.

1.06 PROJECT CONDITIONS

A. Ensure ambient and surface temperatures and joint conditions are suitable for installation of materials.

1.07 WARRANTY

A. Provide written warranty in form acceptable to Owner jointly signed by manufacturer, installer and Contractor warranting work to be watertight, free from defective materials, defective workmanship, glass breakage due to defective design, and agreeing to replace components which fail within 1 year from date of Substantial Completion.

B. Warranty shall cover following:
1. Complete watertight and airtight system installation within specified tolerances.
2. Glazing sealants and gaskets will remain free from abnormal deterioration or dislocation due to sunlight, weather, or oxidation.

C. Provide written warranty stating organic coating finish will be free from fading more than 10%, chalking, yellowing, peeling, cracking, pitting, corroding or non-uniformity of color, or gloss deterioration beyond manufacturer's descriptive standards for 5 years from date of Substantial

Completion and agreeing to promptly correct defects.

PART 2 - PRODUCTS

2.01 MANUFACTURERS AND PRODUCTS

A. Subject to compliance with requirements indicated, provide products by one of the following:
   1. Oldcastle BuildingEnvelope®, Terrell, TX, USA, Newnan, and GA, USA.

B. Substitutions: Architect/Owner approved equal.

C. Acceptable curtain wall systems:
   Reliance Unit Wall - Structurally TAPE Glazed unit wall system for 1” (25mm) Glazing. Captured - 2 1/2" (63.5mm) x 7" (177.8)

2.02 FRAMING MATERIALS AND ACCESSORIES

A. Aluminum:
   1. ASTM B221, alloy 6063-T6 for extrusions; ASTM B209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.

B. Internal Reinforcing:
   1. ASTM A36 for carbon steel (260W – Canada); or ASTM B308 for structural aluminum.
   2. Shapes and sizes to suit installation.
   3. Shop coat steel components after fabrication with alkyd type zinc rich primer complying with FS TT-P-645.

C. Inserts and Anchorage Devices:
   1. Manufacturer's standard formed or fabricated assemblies, steel, or aluminum, of shapes, plates, bars, or tubes.
   2. Hot-dip galvanize steel assemblies after fabrication, comply with ASTM A123, 2.0-ounce minimum coating.
   3. Shop coat steel assemblies after fabrication with alkyd type zinc rich primer complying with FS TT-P-645.

D. Fasteners:
   1. Non-magnetic stainless steel or other non-corrosive plating, compatible with materials being fastened for non-exposed locations.
   2. Series 300 stainless steel for exposed locations.
   3. Provide nuts or washers of design having the means to prevent disengagement; deforming of fastener threads is not acceptable.
   4. Provide concealed fasteners wherever possible.

E. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.

F. Shims: Non-staining, non-ferrous, type as recommended by system manufacturer.

G. Protective Coatings: Cold applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil thickness for each coat; or alkyd type zinc rich primer complying with FS TT-P-645.

H. Glazing Gaskets:
   1. Comply with ASTM C509 or C864.
   2. Profile and hardness as necessary to maintain uniform pressure for watertight seal.

3. Manufacturer's standard black color.

I. Structural Glazing Tape: 3M™ VHB™ B23F or G23F (SGT) closed cell, double sided acrylic foam tape required for application of interface to the insulating glass unit.

J. Internal Sealants: Types recommended by system manufacturer to remain permanently non-hardening, non-migrating and weather-tight.

K. Spandrel Panels and Exterior Column Covers [Soffits and Metal Ceilings]:
1. Type: Aluminum sheet, 1/8 inch (3mm) thick, suitably reinforced on concealed surface for surface flatness, or prefabricated sandwich panels at manufacturer's option.
2. Anchorage: Allow for expansion and contraction, to minimize oil canning and distortion.

2.03 GLASS AND GLAZING ACCESSORIES

A. Refer to Section 08 80 00.

2.04 SYSTEM FABRICATION

A. Fabricate components in accord with approved shop drawings. Remove burrs and ease edges. Shop fabricate to greatest extent practicable to minimize field work.

B. Steel Components:
1. Clean surfaces after fabrication and immediately prior to application of primer in accord with SSPC-SP2 or SSPC-SP3 at manufacturer's option.
2. Apply specified shop coat primer in accord with manufacturer's instructions to provide 2.0 mil minimum dry film thickness.

C. Fabricate components true to detail and free from defects impairing appearance, strength, or durability. Fabricate custom extrusions indicated and as necessary for complete installation.

D. Fabricate components to allow for accurate and rigid fit of joints and corners. Match components carefully ensuring continuity of line and design. Ensure joints and connections will be flush and weather-tight. Ensure slip joints make full, tight contact and are weather-tight.

E. Reinforce components as required at anchorage and support points, at joints, and at attachment points for interfacing work.

F. Provide structural reinforcing within framing members where required to maintain rigidity and accommodate design loads.

G. System design and sealants to accommodate internal weep and drainage system not visible to the exterior.

H. Head and sill extrusions act as gutter and weep water to exterior; do not penetrate sections with fasteners.

I. Allow for adequate clearance around perimeter of system to enable proper installation and for thermal movement within system.

J. Separate dissimilar metals with protective coating or preformed separators to prevent contact and corrosion.

2.05 FINISH

A. Anodized, color as selected by Owner:
   1. Conforming to AA-M12C22A41 (class II) or AA-M12C22A31 (class I) and AAMA 611.
   2. Architectural Class I, etched, medium matte, clear anodic coating, 0.7 mil minimum thickness.
   3. Architectural Class II, etched, medium matte, clear anodic coating, 0.4 mil minimum thickness.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine conditions and proceed with Work in accordance with Section 01 40 00.

B. Verify dimensions, tolerances, and method of attachment with other Work.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions and applicable provisions of AAMA Aluminum Curtain Wall Design Guide Manual.

B. Align assemblies' plumb and level, free of warp or twist, aligning with adjacent Work.

C. Tolerances per AAMA CWG-1-89 guidelines.

D. Provide attachments and shims to permanently fasten system to building structure.

E. Anchor securely in place, allowing for required movement, including expansion and contraction.

F. Separate dissimilar materials at contact points, including metal in contact with masonry or concrete surfaces, with protective coating or preformed separators to prevent contact and electrolytic action.

G. Set sill members in bed of sealant. Set other members with internal sealants and baffles to provide weather-tight construction.

H. Water Drainage: Water to drain down verticals to the horizontal stack below where water is diverted to the exterior of the building.

I. Glazing:
   1. Install glazing gaskets and sealants in accordance with manufacturer's instructions without exception; including surface preparations. Refer to Section 08 80 00 for additional requirements.
   2. Factory glazed and held in place with structural silicone.

J. Fire-Safing and Curtain Wall Insulation:
   1. Install fire safing and curtain wall insulation specified in Section 07 20 00 and 07 27 00.

3.03 FIELD QUALITY CONTROL

A. Field Tests: Contractor to hire independent testing laboratory to perform air infiltration, water infiltration, and hose test.

3.04 CLEANING:

A. Clean surfaces in compliance with manufacturer's recommendations; remove excess mastic, mastic smears, and other foreign materials.

B. Clean metal surfaces exercising care to avoid damage.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes hardware for exterior doors, thresholds, weather-stripping, seals and door gaskets.

1.2 SYSTEM DESCRIPTION

A. Provide door hardware listed by UL or Warnock Hersey, or other testing laboratory approved by applicable authorities.
   1. Hardware: Tested in accordance with NFPA 252.

1.3 SUBMITTALS

A. Shop Drawings: Indicate locations and mounting heights of each type of hardware, electrical characteristics and connection requirements.

B. Samples: Submit hinge, latchset, lockset, and closer, illustrating style, color, and finish. Incorporate into the work.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with the following requirements:
   1. ANSI/BHMA A156 series.
   2. NFPA 80 - Fire Doors and Windows.
   3. NFPA 101 - Life Safety Code.

B. Coordination: Coordinate work of this section with other directly affected sections requiring integral reinforcement for door hardware.

C. Supplier: Company specializing in supplying commercial door hardware with minimum three years documented experience, approved by primary hardware manufacturers.

1.6 WARRANTY

A. Furnish five year manufacturer warranty for door hardware.

1.7 MAINTENANCE SERVICE

A. Provide service and maintenance services of door closers for one year from Date of Substantial Completion.

B. Provide special wrenches and tools applicable to each different or special hardware component.

PART 2 PRODUCTS

2.1 DOOR HARDWARE – TO MEET OWNERS GUIDE

A. Manufacturers:
1. Basis of Design:
   a. Hinges: McKinley, Stanley
   b. Locksets: Stanley BEST BASIS V Magnetic (Electronic Locks) Sargent (Mechanical Locks)
   c. Latch Sets: Stanley (Electronic) Sargent (Mechanical)
   d. Cylinders: Best SFIC (Electronic) Sargent LFIC (Mechanical)
   e. Exit Device: Precision PHI Best
   f. Closers: Stanley D-4550
   g. Operators: Stanley Magic Force Operator

2. Substitutions: Architect/Owner Approved Equal

2.2 COMPONENTS

A. General Hardware Requirements: Where not specifically indicated, comply with applicable ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
3. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
   a. Finish: Match hardware item being fastened.
4. Electrical Devices: Make provisions and coordinate requirements for electrical devices and connections for hardware.

B. Hinges: ANSI A156.1, Ball Bearing 4.5 x 4.5 ,complying with following general requirements unless otherwise scheduled.
1. Widths: Sufficient to clear trim projection when door swings 180 degrees.
2. Number: Furnish hinges for each door leaf at all doors.

C. Locksets and Latchsets: Furnish locksets compatible with specified cylinders. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames.
1. Bored Cylindrical Locksets and Latchsets: ANSI/BHMA A156.2, Series 4000, Grade 1 unless otherwise indicated.
2. Interconnected Locksets: ANSI/BHMA A156.12, Series 5000, Grade 1 unless otherwise indicated.
3. Auxiliary Locksets: ANSI/BHMA A156.5, Grade 1, rim locks unless otherwise indicated.

D. Exit Devices: ANSI/BHMA A156.3, Grade 1 rim type, with push pad , unless otherwise indicated. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames.
   1. Basis of Design: Precision APEX 2000 series exit devices with specified trim.

E. Cylinders: ANSI/BHMA A156.5, Grade 1, removable cylinders interchangeable core type cylinders in compliance with the Universities keying system.
   1. Keying: Cylinders and keying to be purchased by the Contractor and coordinated with the Owner. 7 -pin for Best Cylinders and 6-pin for Sargent cylinders.
   2. Supply keys in the following minimum quantities:
      a. (2) Change Keys for each core type.

F. Closers: ANSI/BHMA A156.4 , surface mounted closers; full rack and pinion type with steel spring and non-freezing hydraulic fluid; closers required for fire rated doors unless otherwise indicated.
   1. Adjustability: Furnish controls for regulating closing, latching, speeds, and back checking.
   2. Arms: Type to suit individual condition; parallel-arm closers at reverse bevel doors and where doors can swing full 180 degrees.
   3. Location: Mount closers on inside of exterior doors, room side of interior doors typical; mount on pull side of other doors.
   4. Operating Pressure: Maximum operating pressure as follows.
      a. Interior Doors: Maximum 5 pounds
      b. Exterior Doors: Maximum 10 pound
      c. Fire Rated Doors: As required for fire rating, maximum 15 pounds

G. Door Controls and Overhead Holders: Furnish with accessories as required for complete operational installation.
   1. Manual Door Holders and Overhead Stops: ANSI/BHMA A156.8, Grade 1

H. Push/Pulls, Manual and Automatic Bolts, Protection Plates, Gaskets, Thresholds, and Trim: Furnish as indicated in Schedule, with accessories as required for complete operational door installations.
   1. Push/Pulls: ANSI/BHMA A156.6; Furnish straight push-pull
   2. Manual Bolts: ANSI/BHMA A156.16 Grade 1 top and bottom flush bolts, with dust-proof floor strike.
   3. Kickplates, Mop Plate, Armor Plate: ANSI/BHMA A156.6, metal; height indicated in Schedule by 1 inch less than door width; stainless steel.
   4. Weatherstripping: Furnish continuous weatherstripping at top and sides of exterior doors.
   5. Thresholds: Maximum 1/2 inch height; requirements to ensure accessibility for persons with disabilities.
   6. Wall Stops: ANSI/BHMA A156.1, Grade 1, 3 inch wall stop, concave pad wall stop with no visible screws.
   7. Floor Stops: ANSI/BHMA A156.1 Grade 1 standard floor type with no visible screws; furnish with accessories as required for applications indicated.

2.3 ACCESSORIES

A. Lock Trim: Furnish levers with escutcheon plate as indicated in Schedule as selected from manufacturer's full range of levers and roses.

B. Through Bolts: Through bolts and grommet nuts are not permitted on door faces in occupied areas unless no alternative is possible.

2.4 FINISHING

A. Finishes: ANSI/BHMA A156.18; with following finishes except where otherwise indicated in Schedule.
   1. Hinges and Pivots:
      a. BHMA 626, satin finish.
   2. Typical Exterior Exposed and High Use Interior Door Hardware:
      a. BHMA 626, satin chromium.
      b. BHMA 626, satin chromium.
      c. BHMA 626, satin chromium.
   3. Closers: Finish appearance to match door hardware on same face of door.
      a. BHMA 689, aluminum painted.
      b. EN finish for Sargent.
   4. Thresholds: Finish appearance to match door hardware on exterior face of door.
      a. BHMA 628, satin aluminum, clear anodized.
   5. Other Items: Provide manufacturer's standard finishes to match similar hardware types on same door, and maintain acceptable finish considering anticipated use and BHMA category of finish.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify doors and frames are ready to receive work and dimensions are as indicated.

B. Verify electric power is available to power operated devices and is of correct characteristics.

3.2 INSTALLATION

A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.

B. Mounting Heights From Finished Floor to Center Line of Hardware Item: Comply with manufacturer recommendations and applicable codes.

3.3 SCHEDULE

Refer to Schedule on Drawings.

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.1 SUMMARY

A. Section includes glass, glazing for metal frames, doors, and windows.
   1. Glass and glazing materials and installation requirements are included in this section for other sections referencing this section.

1.2 SYSTEM DESCRIPTION

A. System performance to achieve continuity of building enclosure air barrier and vapor retarder with glass and glazing materials of this section.

B. Design Tolerances: Size glass to withstand dead loads and positive and negative wind loads acting normal to plane of glass.

1.3 SUBMITTALS

A. Product Data on Glass Types Specified: Submit physical and environmental characteristics, size limitations, and special installation requirements.

B. Product Data on Glazing Compounds: Submit chemical characteristics, limitations, special application requirements. Identify available colors.

C. Samples: Submit two (2) samples, illustrating glass.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual, GANA Sealant Manual, GANA Laminated Glass Design Guide and SIGMA for glazing installation methods.

1.5 WARRANTY

A. Furnish ten year manufacturer warranty including coverage for sealed glass units from seal failure, interpane dusting, misting, and replacement of defective glass.

B. Furnish ten year warranty to include coverage for delamination of laminated glass and replacement of defective glass.

PART 2 PRODUCTS

2.1 GLAZING

A. Manufacturers:
   1. TGP Technical Glass Products.
   2. Arch Aluminum & Glass LC.

3. Glass Unlimited Inc / Ambiance.
4. Graham FRP Composites.
5. Inkan Ltd.
6. PPG Industries.
7. Substitutions: Architect/Owner Approved Equal.

2.2 COMPONENTS

A. Flat Glass (Type FG): Total composite unit thickness 1 inch (1/4 inch glazing + 1/2 inch air space + 1/4 inch glazing) (Each glazing pane thickness minimum 1/4 inch).
1. Clear Float Glass (Type FG-CF): ASTM C1036, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select.
2. Clear Heat Strengthened Glass (Type FG-CH): ASTM C1048, Kind HS, heat strengthened, Condition A uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select.
3. Low E Clear Float Glass (Type FG-EC): Clear float glass Type FG-CF, with low emissivity coating on inner surface.
4. Low E Clear Heat Strengthened Glass (Type FG-EHC): Clear heat strengthened glass Type FG-CH, with low emissivity coating on inner Number 2 surface.
5. Low E Tinted Heat Strengthened Glass (Type FG-EHT) (exterior application): Tinted heat strengthened glass Type FG-TH, with low emissivity coating on inner surface.
a. Tint: As selected.

B. Safety Glass (Type SG): Conform to ANSI Z97.1, minimum thickness 1/4 inch unless otherwise indicated.
1. Clear Tempered Glass (Type SG-CT): ASTM C1048, Kind FT Fully tempered, Condition A, uncoated, Type 1 transparent flat, Class 1 clear, Quality q3 glazing select; with horizontal tempering.
a. Tinted Tempered Glass (Type FG-TT): ASTM C1048, Kind FT Fully tempered, Condition A, uncoated, Type 1 transparent flat.

C. Fire Rated, safety-rated, wired glass: (basis of design)
1. Manufacturer: “TGP Technical Glass Products”
2. Model: WireLite NT
3. Thickness: 1/4"
4. Fire rated for 20, 45, 60 and 90 minutes.
5. Impact safety-rated per ANSI Z97.1 and CPSC 16CFR1201 (Cat. I and II).
6. Wired glass with high performance surface-applied fire rated film.
7. 3-year warranty.
8. Install as per manufacturers specifications and requirements.
9. Submit complete shop drawings for review and approval prior to construction.
10. Substitutions: Architect/Owner Approved Equal.

2.3 ACCESSORIES

A. Elastomeric Glazing Sealants: Materials compatible with adjacent materials including glass, laminated glass core, insulating glass seals and glazing channels.

1. Silicone Glazing Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component; solvent curing;

capable of water immersion without loss of properties; non-bleeding, non-staining, cured Shore A hardness of 15 to 25.
   a. Color: As selected.
   b. Structural Silicone: Furnish high-modulus structural silicone glazing materials where sealant bonds glass to substrate.
2. Polysulfide Glazing Sealant: ASTM C920, Type M, Grade NS, Class and Use suitable for glazing application indicated; two component; chemical curing, non-sagging type; cured Shore A hardness of 15 to 25.
   a. Color: As selected.
3. Polyurethane Glazing Sealant: [ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component, chemical curing, non-staining, non-bleeding, Shore A Hardness Range 20 to 35.
   a. Color: As selected.
4. Acrylic Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component, solvent curing, non-bleeding; cured Shore A hardness of 15 to 25.
   a. Color: as selected.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify openings for glazing are correctly sized, within tolerance, and glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.

3.2 PREPARATION

A. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

B. Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

A. Perform installation in accordance with GANA Glazing Manual.
   1. Glazing Sealants: Comply with ASTM C1193.
   2. Fire Rated Openings: Comply with NFPA 80

3.4 CLEANING

A. Remove glazing materials from finish surfaces.

B. Remove labels after Work is complete.

C. Clean glass and adjacent surfaces.

END OF SECTION

SECTION 09 21 16

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes gypsum board with joint treatment.

1.2 SYSTEM DESCRIPTION

A. Conform to applicable code for fire rated assemblies and in conjunction with Drawings.

1.3 SUBMITTALS

A. Product Data: Submit data on gypsum board, joint tape and joint compound.

1.4 QUALITY ASSURANCE

A. Perform Work in accordance with ASTM C840.; GA-201 - Gypsum Board for Walls and Ceilings; GA-214 - Recommended Specification: Levels of Gypsum Board Finish.; GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

PART 2 PRODUCTS

2.1 GYPSUM BOARD ASSEMBLIES

A. Manufacturers:
   1. G-P Gypsum Corp.
   2. National Gypsum Co.
   3. United States Gypsum Co.
   4. Substitutions: Architect/Owner Approved Equal.

2.2 COMPONENTS

A. Gypsum Board Types: 5/8 inch thick, type “X” fire rated, and impact resistant, maximum available length in place; ends square cut, tapered edges; unless noted otherwise as follows:
   1. Moisture Resistant Type: ASTM C630.
   2. Abuse-Resistant Type (Category 3): ASTM D4977; ASTM D5420 (Category 2).
   3. Cement Board: ASTM D2394
   4. Exterior Sheathing – Dens-Glass Gold (or equal): ASTM D3273

2.3 ACCESSORIES

A. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board.

B. Corner Beads: Metal.

C. Edge Trim: GA-216, Type LC bead.

D. Joint Materials: ASTM C475; GA-201 and GA-216, reinforcing tape, joint compound, adhesive, and water.

E. Fasteners: ASTM C1002 Type S12 hardened screws. and GA-216.

F. Adhesive: ASTM C557. GA-216.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify site conditions are ready to receive work.

3.2 INSTALLATION

A. Gypsum Board:
1. Install gypsum board in accordance with GA-216 and GA-600.
2. Fasten gypsum board to furring or framing with screws.
3. Place control joints consistent with lines of building spaces as directed by Architect.
4. Place corner beads at external corners as indicated on Drawings. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
5. Seal cut edges and holes in moisture resistant gypsum board with sealant.

B. Joint Treatment:
1. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
2. Feather coats onto adjoining surfaces so camber is maximum 1/32 inch

C. Tolerances: Maximum Variation from Flat Surface: 1/8inch in 10 feet in any direction.

PART 4 PAPER TYPE

A. Paperless type gypsum board. All Gypsum Board is to be paper type only.

END OF SECTION

SECTION 09 22 16

NON-LOAD BEARING METAL FRAMING SYSTEM

PART 1 GENERAL

1.1 SUMMARY

A. Section includes metal stud framing and accessories at interior locations.

B. Related Sections:
1. Section 054000 - Cold-Formed Metal Framing.
2. Section 092116 - Gypsum Board Assemblies.

1.2 REFERENCES

A. ASTM International:
1. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
2. ASTM A591/A591M - Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for Light Coating Mass Applications.
3. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
4. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members.
5. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
6. ASTM C1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases.

B. National Association of Architectural Metal Manufacturers:
1. NAAMM ML/SFA 540 - Lightweight Steel Framing Systems Manual.

C. SSPC: The Society for Protective Coatings:
1. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).

1.3 SYSTEM DESCRIPTION

A. Exterior Wall: Metal stud framing system infill, with batt insulation and interior gypsum board indicated on wall types.

B. Interior Walls: Metal stud framing system with batt type acoustic insulation and interior gypsum board indicated on wall types.

C. Maximum Allowable Deflection: 1: 120 span.

D. Wall System:
1. Design to provide for movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.

2. Design system to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings:
1. Indicate prefabricated work, component details, stud layout, framed openings, anchorage to structure, type and location of fasteners, and accessories or items required of other related work.
2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement to framing connections.

C. Product Data: Submit data describing standard framing member materials and finish, product criteria, load charts, limitations.

D. Manufacturer's Installation Instructions: Submit special procedures, perimeter conditions requiring special attention.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with ASTM C754.

B. Form, fabricate, install, and connect components in accordance with NAAMM ML/SFA 540.

C. Furnish framing materials in accordance with SSMA - Product Technical Information.

D. Maintain one copy of each document on site.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
1. Framing Manufacturer: Current member of Steel Stud Manufacturers Association.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

C. Design structural elements under direct supervision of Professional Engineer experienced in design of this Work and licensed at Project location.

1.7 PRE-INSTALLATION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.8 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

PART 2 PRODUCTS

2.1 METAL FRAMING SYSTEM

A. Manufacturers:
   1. Clark Steel Framing Systems
   2. Dietrich Industries, Inc.
   3. Harrison Manufacturing Co.
   4. Marino/Ware
   5. Unimast Incorporated
   6. Substitutions: Architect/Owner Approved Equal.

2.2 COMPONENTS

A. Framing System Components: ASTM C645.

B. Studs: ASTM A653/A653M, non-load bearing rolled steel, channel shaped, punched for utility access, as indicated on wall types.

C. Tracks and Headers: Same material and thickness as studs, bent leg retainer notched to receive studs [with provision for crimp locking to stud. Ceiling Runners: With extended leg retainer.

D. Furring and Bracing Members: Of same material as studs; thickness to suit purpose.

E. Fasteners: ASTM C1002, self drilling, self tapping screws.

F. Sheet Metal Backing: 0.03 galvanized steel for reinforcement.

G. Anchorage Devices: Power actuated.

H. Acoustic Sealant: As specified in Section 09 21 16.

I. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type II Organic.

2.3 FABRICATION

A. Fabricate assemblies of framed sections to sizes and profiles required.

B. Fit, reinforce, and brace framing members to suit design requirements.

C. Fit and assemble in largest practical sections for delivery to site, ready for installation.

2.4 SHOP FINISHING

A. Studs: Galvanize to G90, Z275 coating class.

B. Tracks and Headers: Galvanize to G90, Z275 coating class.

C. Accessories: Same finish as framing members.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify rough-in utilities are in proper location.

3.2 INSTALLATION

A. Align and secure top and bottom runners at 24 inches oc.

B. Place two beads of acoustic sealant between runners and substrate, studs and adjacent construction to achieve vapor seal and acoustic seal.

C. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.

D. Install studs vertically at 16 inches oc.

E. Align stud web openings horizontally.

F. Secure studs to tracks using fastener method. Do not weld.

G. Stud splicing not permissible.

H. Fabricate corners using minimum of three studs.

I. Double stud at wall openings, door and window jambs, not more than 2 inches (50 mm) from each side of openings.

J. Brace stud framing system rigid.

K. Coordinate erection of studs with requirements of door frames, window frames, install supports and attachments.

L. Coordinate installation of wood bucks, anchors, and wood blocking with electrical and mechanical work to be placed within or behind stud framing.

M. Blocking: Secure wood blocking to studs. [Secure steel channels to studs. Install blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware, opening frames.

N. Refer to Drawings for indication of partitions extending to finished ceiling only and for partitions extending through ceiling to structure above. Maintain clearance under

structural building members to avoid deflection transfer to studs. Install extended leg ceiling runners.

O. Coordinate placement of insulation in stud spaces after stud frame erection.

3.3 ERECTION TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Maximum Variation From Indicated Position: 1/8 inch in 10 feet.

C. Maximum Variation From Plumb: 1/8 inch in 10 feet.

END OF SECTION

SECTION 09 51 13

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes suspended metal grid ceiling system and acoustic tile.

1.2 SYSTEM DESCRIPTION

A. Provide system capable of supporting imposed loads with deflection limited to 1:360.

B. Installed System: Conform to UL rating for ceiling assemblies.

C. Conform to applicable code for fire rated assembly and combustibility requirements.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's product data.

B. Samples: Submit ceiling tile suspension and all related accessories, including seismic struts.

1.4 QUALITY ASSURANCE

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience, and with service facilities within 100 miles of Project.

B. Installer: Company specializing in performing Work of this section with minimum three years documented experience, approved by manufacturer.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Maintain uniform temperature of minimum 60 degrees F and maximum humidity acoustic unit installation.

PART 2 PRODUCTS

2.1 SUSPENDED ACOUSTICAL CEILINGS

A. Manufacturers:
1. Armstrong (Basis of design)
2. Substitutions: Architect/Owner Approved Equal.

2.2 COMPONENTS

A. ACT-1, Acoustic Tiles: ASTM E1264 conforming to the following:
1. Manufacturer: USG
2. Model #: Radar Basic Acoustical Panels 2310.
3. Nominal Size: 24 x 48 inches.
4. Thickness: 5/8”
5. NRC: 0.55
6. CAC: 33
7. Fire Resistance: Class A
8. Color: White.
9. Substitutions: Architect/Owner Approved Equal.

B. ACT-2, Acoustic Tiles: ASTM E1264 conforming to the following:
1. Manufacturer: USG
2. Model #: Radar Basic Acoustical Panels 2110.
3. Nominal Size: 24 x 24 inches.
4. Thickness: 5/8”
5. NRC: 0.55
6. CAC: 33
7. Fire Resistance: Class A
8. Color: White.
9. Substitutions: Architect/Owner Approved Equal.

C. Grid System:
1. Fire Rated Grid: DONN DXL Fire rated Grid System 15/16”.
   a. USG Interiors (Basis of Design)
   b. Substitutions: Architect/Owner Approved Equal
   c. Install as per manufacturer specifications.
2. Seismic: Installation to be in compliance with the manufacturer’s requirements for a Standard Seismic Application, IBC Category “C”.
3. Accessories: Stabilizer bars, clips, splices, edge moldings, hold down clips, etc, as required for suspended grid system, seismic application.
4. Grid Materials: Commercial quality cold rolled steel with galvanized coating.
5. Grid Finish: Color as selected by Architect/Owner from all available standard & advantage colors.
6. Support Channels and Hangers: Galvanized steel, size and type to suit application and ceiling system flatness requirement specified.

D. See information on security ceilings in Miscellaneous Section of specifications.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify layout of hangers does not interfere with other work.

3.2 INSTALLATION

A. Suspension System:
   1. Install system in accordance with ASTM C636, AND UL.
   2. Coordinate location of hangers with other work. Where components prevent regular spacing of hangers, reinforce system to span extra distance.
   3. Hang system independent of walls, columns, ducts, pipes and conduit.
   4. Locate system on room axis leaving equal border units according to reflected plan.
   5. Install edge molding at intersection of ceiling and vertical surfaces, using longest practical lengths.
   6. Install only in conditioned spaces.

B. Acoustic Units:
   1. Install acoustic units' level, free from damage, twist, warp or dents.

C. Tolerances: Variation from Flat and Level Surface: 1/8 inch in 10 feet.

END OF SECTION

SECTION 09 68 13

CARPET TILE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes carpet tile, fully adhered, self-stick adhesive backed.

1.2 REFERENCES

A. Carpet and Rug Institute:
   1. CRI 104 - Standard for Installation of Commercial Carpet.

B. Consumer Products Safety Commission:
   1. CPSC 16 CFR 1630 - Standard for the Surface Flammability of Carpets and Rugs.

C. National Fire Protection Association:
   1. NFPA 253 - Standard Method of Test for Critical Radiant Flux for Floor Covering Systems Using a Radiant Heat Energy Source.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate layout of joints, direction of carpet pile, and location of edge moldings.

C. Product Data: Submit data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

D. Samples:
   1. Submit two carpet tiles illustrating color and pattern design for each carpet color selected. Matching roll carpet samples.
   2. Submit two 12 x 12 inch long samples of edge strip, base cap.

E. Manufacturer's Installation Instructions: Submit special procedures, perimeter conditions requiring special attention.

1.4 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.

B. Operation and Maintenance Data: Submit maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.5 QUALITY ASSURANCE

A. Surface Burning Characteristics:
   1. Floor Finishes: Refer to Interior Finishes notes on drawings.

B. Perform Work in accordance with State International Building Code standard.

C. Maintain one copy of each document on site.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing work of this section with minimum 3 years documented experience approved by manufacturer.
   1. FCIB or IFCI certified carpet installers.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Store materials in area of installation for 48 hours prior to installation.

1.8 EXTRA MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

B. Supply 5% of carpet tiles of each color and pattern selected.

PART 2 PRODUCTS

2.1 CARPET TILE

A. Basis of design:
   1. Shaw Contract
   2. Mod #: Disperse 24x24 59576
   3. Size: 24”x24”
   4. Color: As selected by Owner/Architect from all available standard colors and patterns.

B. Manufacturers:
   1. Shaw Contract **(Basis of design)**
   2. Tandus Centiva | Tarkett
   3. Milliken Carpet
   4. Chambridge
   5. Collins & Aikman Floor Coverings
   6. Interface Flooring Systems, Inc.

7. Mannington Commercial Carpet
8. Substitutions: Permitted, Architect approved equal based on substitution Certification Form Submittal.

2.2 ACCESSORIES

A. Sub-Floor Filler: Type recommended by flooring material manufacturer.

B. Base Molding:
1. 4" vinyl wall base as manuf. by "Johnsonite" **(Basis of Design)**
2. Color as selected by Owner from all available colors.
3. Submit complete shop drawings and related items as required for a complete and finished installation.
4. Substitutions: Architect/Owner Approved Equal

C. Contact Adhesive: Recommended by carpet manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify floor surfaces are smooth and flat within tolerances specified by Carpet Manufacturer and are ready to receive work.

3.2 PREPARATION

A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

C. Clean substrate.

3.3 INSTALLATION

A. Install carpet tile in accordance with CRI 104.

B. Do not mix carpet from different cartons unless from same dye lot.

C. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

D. Install carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines or as indicated on drawings.

E. Locate change of color or pattern between rooms under door centerline.

F. Fully adhere carpet tile to substrate.

3.4 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

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

C. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09 90 00

PAINTS AND COATINGS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes surface preparation and field application of paints and other coatings.

1.2 SUBMITTALS

A. Product Data: Submit data on finishing products and special coating.

B. Samples: Submit two (2) paper chip samples, 2 inches x 2 inches in size illustrating range of colors and textures available for each surface finishing product scheduled.

1.3 CLOSEOUT SUBMITTALS

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

1.4 QUALITY ASSURANCE

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

B. Perform Work in accordance with State of New Jersey Public Work's standard.

C. Maintain one copy of each document on site.

1.5 ENVIRONMENTAL REQUIREMENTS

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

PART 2 PRODUCTS

2.1 PAINTS AND COATINGS

A. Manufacturers:
   1. Sherwin Williams.
   2. Benjamin Moore.
   3. Coronado Paints.
   4. Pratt and Lambert.
   5. Devoe Paint Co.
   6. MAB Paints.
   7. PPG Architectural Finishes.
   8. Cabot
   9. Substitutions: Architect/Owner Approved Equal.

2.2 COMPONENTS

A. Coatings: Ready mixed except field catalyzed coatings of good flow and brushing properties, capable of drying or curing free of streaks or sags.

B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials required to achieve finishes specified.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify substrate conditions are ready to receive Work.

B. Measure moisture content of porous surfaces using electronic moisture meter. Do not apply finishes unless moisture content is less than 15 percent.

3.2 PREPARATION

A. Correct minor defects and clean surfaces affecting work of this section.

B. Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or applying finishes.

C. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.

D. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

E. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish: Remove foreign matter. Remove oil and grease with solution of tri-sodium phosphate, rinse well and allow to dry.

F. Uncoated Steel and Iron Surfaces: Remove scale by wire brushing, sandblasting, and clean by washing with solvent. Apply treatment of phosphoric acid solution. Prime paint after repairs.

G. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Clean surfaces with solvent. Prime bare steel surfaces.

H. Exterior Wood Scheduled to Receive Paint Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior paintable caulking compound after prime coat has been applied.

3.3 APPLICATION

A. Sand wood surfaces lightly between coats to achieve required finish.

B. Where clear finishes are required, tint fillers to match wood.

C. Prime concealed surfaces of exterior woodwork with primer paint.

D. Cleaning: As work proceeds, promptly remove finishes where spilled, splashed, or spattered.

3.4 SCHEDULE - EXTERIOR SURFACES

A. Wood - Painted (Opaque):
   1. One coat of alkyd primer sealer.
   2. Two coats of acrylic semigloss.

B. Concrete, Concrete Block, Restored Masonry:
   1. One coat of primer sealer latex.
   2. One coat of latex flat.

C. Gypsum Board Cement Plaster Soffits:
   1. One coat of primer sealer latex.
   2. One coat of latex flat.

D. Steel - Shop Primed:
   1. Touch-up with zinc rich primer.
   2. Two coats of alkyd enamel, semi-gloss.

E. Steel - Galvanized:
   1. One coat of galvanize primer.
   2. Two coats of alkyd enamel, semi-gloss.

3.5 SCHEDULE - INTERIOR SURFACES

A. Concrete, Concrete Block:
   1. One coat of primer sealer latex.
   2. Two coats latex, Eggshell.

B. Steel - Galvanized:
   1. Touch-up with one coat of galvanize primer.
   2. Two coats of alkyd enamel, semi-gloss.

C. Plaster, Gypsum Board:
   1. One coat of alkyd primer sealer.
   2. Two coats latex enamel, Eggshell.

PART 4 MANUFACTURER PREPARATION & COATING RECOMMENDATIONS

4.1 SURFACE PREPARATION

A. All existing painted areas should be thoroughly cleaned using the most practical and efficient method to remove dirt, dust, oils, fingerprints, graffiti and all other surface contaminants. Utilize proper and suitable cleaners as necessary to accomplish the task. Both the KrudKutter Gloss Off and KrudKutter Graffiti Remover can be considered as possible choices or architect approved equal.

B. All painted block wall and metal frame areas should be further inspected, and possible loose or loosely adhering paint should be properly prepared and removed back to a firm substrate.

C. The above recommendations supersede any conflicting items in PART 3.2 above.

4.2 SCHEDULE OF COATINGS

A. Interior Block Walls- Existing and painted with unknown coatings, possible peeling / bare block areas:
   1. Spot primer for bare masonry ONLY: S-W Loxon Concrete & Masonry Primer A24 or Architect approved equal.
   2. Full overall primer for painted wall areas ONLY: S-W Adhesion Primer B51W8050 or Architect approved equal.
   3. Finish with (2) two coats of S-W Promar 200 Zero VOC Interior Latex Egg-Shell B20-2600, (2) two coats of S-W Promar 200 Zero VOC Interior Latex Lo Sheen Egg-Shell B24-2600, or Architect/Owner approved equal.

B. Interior Metal Door Frames- Existing and painted with unknown coatings, possible peeling / bare metal areas.
   1. Spot primer for bare metal ONLY: S-W Pro Industrial Pro-Cryl WB Universal Primer B66-310 or Architect approved equal.
   2. Full overall primer for painted areas ONLY: S-W Adhesion Primer B51W8050 or Architect approved equal.
   3. Finish with (2) two coats of S-W ProClassic Interior WB Acrylic-Alkyd Semi-Gloss B34W850 or Architect/Owner approved equal.

C. The above recommendations supersede any conflicting items in PART 3.5 above.

END OF SECTION

SECTION 09 90 01

INDUSTRIAL FLOOR COATINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Industrial floor coating system including surface preparation.

1.2 RELATED SECTIONS

A. Section 03 30 00 - Cast-in-Place Concrete.

B. Section 06 10 00 - Rough Carpentry.

1.3 REFERENCES

A. Steel Structures Painting Council (SSPC):
   1. SSPC-SP 1 - Solvent Cleaning.
   2. SSPC-SP 2 - Hand Tool Cleaning.
   3. SSPC-SP 3 - Power Tool Cleaning.
   4. SSPC-SP5/NACE No. 1, White Metal Blast Cleaning.
   5. SSPC-SP6/NACE No. 3, Commercial Blast Cleaning.
   6. SSPC-SP7/NACE No. 4, Brush-Off Blast Cleaning.
   7. SSPC-SP10/NACE No. 2, Near-White Blast Cleaning.
   8. SSPC-SP11, Power Tool Cleaning to Bare Metal.
   9. SSPC-SP12/NACE No. 5, Surface Preparation and Cleaning of Metals by Waterjetting Prior to Recoating.
   10. SSPC-SP 13 / NACE No. 6 Surface Preparation for Concrete.

B. Material Safety Data Sheets / Environmental Data Sheets: Per manufacturer's MSDS/EDS for specific VOCs (calculated per 40 CFR 59.406). VOCs may vary by base and sheen.

C. California Department of Public Health (CDPH):
   1. CDPH v1.1-2010 and V1.2-2017

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: For each paint system indicated, including.
   1. Product characteristics.
   2. Surface preparation instructions and recommendations.
   3. Primer requirements and finish specification.
   4. Storage and handling requirements and recommendations.
   5. Application methods.
   6. Cautions for storage, handling, and installation.

C. Selection Samples: Submit a complete set of color chips that represent the full range of manufacturer's products, colors, and sheens available.

D. Verification Samples: For each finish product specified, submit samples that represent actual product, color, and sheen.

E. One must also comply with the regulations regarding VOCs (CARB, OTC, SCAQMD, LADCO). To ensure compliance with district regulations and other rules, businesses that perform coating activities should contact the local district in each area where the coating will be used.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A firm or individual experienced in applying industrial floor coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

B. Paint exposed surfaces. If a color of finish, or a surface is not specifically mentioned, Architect will select from standard products, colors, and sheens available.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels unless indicated.

D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   1. Finish surfaces for verification of products, colors, and sheens.
   2. Finish area designated by Architect.
   3. Provide samples that designate primer and finish coats.
   4. Do not proceed with remaining work until the Architect approves the mock-up.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver manufacturer's unopened containers to the work site. Packaging shall bear the manufacturer's name, label, and the following list of information.
   1. Product name, and type (description).
   2. Application and use instructions.
   3. Surface preparation.
   4. VOC content.
   5. Environmental handling.
   6. Batch date.
   7. Color number.

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

C. Store materials in an area that is within the acceptable temperature range, per manufacturer's instructions. Protect from freezing.

D. Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

1.7 PROJECT CONDITIONS

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

1.8 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and, in

the quantities, described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.

B. Furnish Owner with an additional one percent of each material and color, but not less than 1 gal (3.8 l) or 1 case, as appropriate.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Sherwin-Williams, which is located at: 101 Prospect Ave.; Cleveland, OH 44115; Toll Free Tel: 800-524-5979; Tel: 216-566-2000; Fax: 440-826-1989; Email: request infospecifications@sherwin.com; Web:www.swspecs.com.

B. Substitutions: Architect/Owner approved equal.

2.2 COATING MATERIALS - GENERAL

A. Coatings:
1. Unless otherwise indicated, provide factory-mixed coatings. When required, mix coatings to correct consistency in accordance with manufacturer's instructions before application. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
2. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color. Or follow manufactures product instructions for optimal color conformance.

B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

C. Coating Application Accessories: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required, per manufacturer's specifications.

D. Color: As selected by Architect/Owner from all available colors.

2.3 INDUSTRIAL FLOOR COATING SYSTEMS

A. Concrete - (Floors, non-vehicular):
1. Waterbased Epoxy Floor Coating System:
a. Concrete Floors, uncoated:
1) 1st Coat: S-W Armor Seal 8100 Waterbased Epoxy Satin Finish (mix with one pine of water per Gallon).
2) 2nd Coat: S-W. Armor Seal 8100 Waterbased Epoxy Satin Finish (dry mils 2.0-5.0).
3) 3rd Coat: S-W. Armor Seal 8100 Waterbased Epoxy Satin Finish (dry mils 2.0-5.0).
b. Concrete Floors, previously coated:
1) 1st Coat: Spot prime bare areas with S-W Armor Seal 8100 Waterbased Epoxy Satin Finish.
2) 2nd Coat: S-W. Armor Seal 8100 Waterbased Epoxy Satin Finish (dry mils 2.0-5.0).
3) 3rd Coat: S-W. Armor Seal 8100 Waterbased Epoxy Satin Finish (dry mils 2.0-5.0).

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared; notify Architect of unsatisfactory conditions before proceeding. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

B. Proceed with work only after conditions have been corrected and approved by all parties, otherwise application of coatings will be considered as an acceptance of surface conditions.

C. Previously Coated Surfaces: Verify that existing painted surfaces do not contain lead based paints, notify Architect immediately if lead based paints are encountered.

3.2 SURFACE PREPARATION

A. General: Surfaces shall be dry and in sound condition. Remove oil, dust, dirt, loose rust, peeling paint, or other contamination to ensure good adhesion.
   1. Prior to attempting to remove mildew, it is recommended to test any cleaner on a small, inconspicuous area prior to use. Bleach and bleaching type cleaners may damage or discolor existing paint films. Bleach alternative cleaning solutions are advised.
   2. Remove mildew before painting by washing with a solution of 1 part liquid household bleach and 3 parts of warm water. Apply solution and scrub the mildewed area. Allow solution to remain on the surface for 10 minutes. Rinse thoroughly with clean water and allow surface to dry before painting. Wear protective glasses or goggles, waterproof gloves, and protective clothing. Quickly wash off any of the mixture that comes in contact with your skin. Do not add detergents or ammonia to the bleach/water solution.
   3. Remove items including but not limited to thermostats, electrical outlets, switch covers and similar items prior to painting. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
   4. No exterior coating should be done immediately after a rain, during foggy weather, when rain is predicted, or when the temperature is below 50 degrees F (10 degrees C), unless products are designed specifically for these conditions. On large expanses of metal siding, the air, surface, and material temperatures must be 50 degrees F (10 degrees F) or higher to use low temperature products.

B. Block (Cinder and Concrete): Remove all loose mortar and foreign material. Surface must be free of laitance, concrete dust, dirt, form release agents, moisture curing membranes, loose cement, and hardeners. Concrete and mortar must be cured at least 30 days at 75 degrees F (24 degrees C). The pH of the surface should be between 6 and 9 unless the products are designed to be used in high pH environments. On tilt-up and poured-in-place concrete, commercial detergents and abrasive blasting may be necessary to prepare the surface. Fill bug holes, air pockets, and other voids with a cement patching compound.

C. Concrete, SSPC-SP13 or NACE 6: This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems. The requirements of this standard are applicable to all types of cementitious surfaces including cast-in-place concrete floors and walls, precast slabs, masonry walls, and shotcrete surfaces. An acceptable prepared concrete surface should

be free of contaminants, laitance, loosely adhering concrete, and dust, and should provide a sound, uniform substrate suitable for the application of protective coating or lining systems.

NOTE: Coating and sealing applications from 4 to 15 mils in thickness, the surface profile shall be CSP 1, 2, or 3, typically accomplished through decontamination of the concrete surface as defined in 3. above, followed by grinding.

Concrete, Poured (Exterior or Interior) – The preparation of new concrete surfaces is as important as the surface preparation of steel. The following precautions will help assure maximum performance of the coating system and satisfactory coating adhesion:

Curing – Concrete must be cured prior to coating. Cured is generally defined as concrete poured and aged at a material temperature of at least 75°F for at least 28 days.

Moisture – Reference ASTM F1869-98 Moisture Test by use of Calcium Chloride or ASTM D4263 Plastic Sheet Method. Concrete must be free from moisture as much as possible (it seldom falls below 15%). Vapor pressures, temperature, humidity, differentials, and hydrostatic pressures can cause coatings to prematurely fail. The source of moisture, if present, must be located, and the cause corrected prior to coating.

Temperature – Air, surface and material temperatures must be in keeping with requirements for the selected product during and after coating application, until coating is cured.

Contamination – Remove all grease, dirt, paint, oil, laitance, efflorescence, loose mortar, and cement by the recommendations listed in the surface preparation section.

Surface Condition – Hollow areas, bug holes, voids, honeycombs, fin form marks, and all protrusions or rough edges are to be ground or stoned to provide a continuous surface of suitable texture for proper adhesion of the coating. Imperfections may require filling, as specified, with a recommended Sherwin-Williams product.

Concrete Treatment – Hardeners, sealers, form release agents, curing compounds, and other concrete treatments should be removed to ensure adequate coating adhesion and performance.

3.3 INSTALLATION

A. Apply all coatings and materials with the manufacturer's specifications in mind. Mix and thin coatings according to manufacturer's recommendations.

B. Do not apply to wet or damp surfaces. Wait at least 30 days before applying to new concrete or masonry. Or follow manufacturer's procedures to apply appropriate coatings prior to 30 days. Test new concrete for moisture content. Wait until wood is fully dry after rain or morning fog or dew.

C. Apply coatings using methods recommended by manufacturer.

D. Uniformly apply coatings without runs, drips, or sags, without brush marks, and with consistent sheen.

E. Apply coatings at spreading rate required to achieve the manufacturers recommended dry film thickness.

F. Regardless of number of coats specified, apply as many coats as necessary for complete hide, and uniform appearance.

G. Inspection: The coated surface must be inspected and approved by the Architect just prior to the application of each coat.

3.4 PROTECTION

A. Protect finished coatings from damage until completion of project.

B. Touch-up damaged coatings after substantial completion, following manufacturer's recommendation for touch up or repair of damaged coatings. Repair any defects that will hinder the performance of the coatings.

END OF SECTION

SECTION 10 14 00

INTERIOR SIGNAGE

PART 1 GENERAL

1.1 SUMMARY

A. Section includes interior signs.

1.2 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures.

B. Shop Drawings: Indicate sign styles, lettering font, foreground and background colors, locations, overall dimensions of each sign.

C. Samples: Submit two signs of each sign type, to match specified sign sizes, illustrating type, style, letter font, and colors specified; method of attachment.

D. Manufacturer's Installation Instructions: Submit installation template and attachment devices.

1.3 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements.

B. Package signs, labeled in name groups.

C. Store adhesive attachment tape at ambient room temperatures.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements: Environmental conditions affecting products on site.

B. Do not install signs when ambient temperature is lower than recommended by manufacturer.

C. Maintain this minimum temperature during and after installation of signs.

PART 2 PRODUCTS

2.1 INTERIOR SIGNS – Provide 1 sign per door; all doors, new and existing, are to receive a minimum of 1 sign each.

A. Manufacturers:
1. AC Display Studios **(Basis of Design)**
Contact: Bob Boyd 609-345-0814
2. Substitutions: Architect/Owner Approved Equal

B. Product Description: Refer to drawings for additional information & requirements.

2.2 COMPONENTS

A. Signs:
1. Face Color: Color as selected by Owner
2. Core Color: Color as selected by Owner
3. Total Thickness: 1/8" minimum
4. Sign Dimensions: Restrooms: 6" x 8" ADA Room Sign
All other rooms: 5" x 5" ADA Room Sign
3.4" x 5" Business Card Sign
5. Character Font: As selected by Owner
6. All signs to have Grade II Braille Translation
7. All Signs to conform to ICC/ANSI A117.1 -2009
8. Coordinate with Owner for exact room names, numbers, & locations prior to construction.
9. Submit color choices and letter styles to Architect for selection
10. Refer to construction drawings for additional information & requirements.

2.3 ACCESSORIES

A. Mounting Hardware: Chrome screws.

B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Verification of existing conditions before starting work.

3.2 INSTALLATION

A. Install signs after doors surfaces are finished; locations to be determined with Owner and Architect.

B. Signs are to be wall mount, level, located adjacent to corresponding door location.

END OF SECTION

SECTION 10 28 00

TOILET AND BATH ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

A. Section includes toilet and washroom accessories.

1.2 SUBMITTALS

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

B. Samples: Submit two samples of each accessory, illustrating color and finish.

PART 2 PRODUCTS

2.1 TOILET AND BATH ACCESSORIES

A. Manufacturers:

B.
1. Bradley Washroom Accessories
2. Bobrick Washroom Accessories
3. Bay West Washroom Accessories
4. Rubbermaid Washroom Accessories
5. Substitutions: Architect/Owner Approved Equal.

2.2 COMPONENTS

A. Products listed on Drawings

B. Furnish 3 sets of keys for each accessory to Owner. (as applicable)

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify exact location of accessories for installation.

3.2 PREPARATION

A. Deliver inserts and rough-in frames to site. Provide templates and rough-in measurements.

3.3 INSTALLATION

A. Install plumb and level, securely and rigidly anchored to substrate.

B. Mounting Heights and Locations: As required by accessibility regulations; ICC/ANSI A117.1 - 2009
   1. Coordinate with Drawings.
   2. Coordinate all clearances and mounting locations prior to accessory installation and report any dimensional discrepancies or conflicts to the architect for review.

3.4 SCHEDULES

A. Refer to Drawings for Schedule of accessories; model numbers and mounting heights.

END OF SECTION