FULTON MAINTENANCE BUILDING METAL SIDING & ROOF SPECIFICATIONS
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01019

CONTRACT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Schedule of values.
B. Application for payment.
C. Change procedures.
D. Alternatives.

1.2 RELATED SECTIONS

A. Section 01600 - Material and Equipment: Product substitutions.

1.3 SCHEDULE OF VALUES

A. Submit a printed schedule on Contractor's standard form. Electronic media printout will be considered.

B. Submit Schedule of Values in duplicate within 20 days after date of Owner-Contractor Agreement.

C. Revise schedule to list approved Change Orders, with each Application For Payment.

1.4 APPLICATIONS FOR PAYMENT

A. Submit four copies of each application on Contractor's electronic media driven form.
B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
C. Payment Period: 30 days.
D. Include an updated construction progress schedule.
E. Certified payroll records.

1.5 CHANGE PROCEDURES

A. The Architect/Engineer/Designer may issue a Notice of Change that includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required.

B. The Contractor may propose changes by submitting a request for change to the Architect/Engineer/Designer describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, the effect on the Contract Sum/Price and Contract Time, and a statement describing the effect on Work by the MoDOT District or other Contractors.

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

D. Construction Change Directive: Architect/Engineer/Designer may issue a directive instructing the Contractor to proceed with a 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 the change.

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

F. 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.

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

1.6 DEFECT ASSESSMENT

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

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

1.7 ALTERNATIVES

A. Accepted Alternatives will be identified in Owner-Contractor Agreement.

END OF SECTION

01039

COORDINATION AND MEETING REQUIREMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination and project conditions.
B. Field engineering.
C. Preconstruction meeting.
D. Site mobilization meeting.
E. Progress meetings.
F. Preinstallation meetings.
G. Equipment electrical characteristics and components.
H. Examination.
I. Preparation.
J. Cutting and Patching.
K. Alteration project procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of the various sections of the 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, such equipment.

C. Coordinate space requirements, supports, and installation of mechanical and electrical Work, which are 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 the 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 FIELD ENGINEERING

A. Employ a Land Surveyor registered in the State of Missouri and acceptable to Architect/Engineer/Designer.
B. Owner will locate and protect survey control and reference points.
C. Control datum for survey is that established by Owner provided survey.
D. Verify setbacks and easements; confirm drawing dimensions and elevations.
E. Provide field engineering services. Establish elevations, lines and levels, utilizing recognized engineering survey practices.

1.4 PRECONSTRUCTION MEETING

A. Architect/Engineer/Designer will schedule a meeting after Notice of Award.

B. Attendance Required: District engineer or representative, Architect/Engineer/Designer and Contractor.

C. Record minutes and distribute copies within 5 days after meeting to participants, with two copies to District Engineer, Architect/Engineer/Designer, participants and those affected by decisions made.

1.5 SITE MOBILIZATION MEETING

A. Architect/Engineer/Designer will schedule a meeting at the Project site prior to Contractor occupancy.

B. Architect/Engineer/Designer will record minutes and distributes copies within 5 days after meeting to participants, with two copies to Architect/Engineer/Designer, participants and those affected by decisions made.

1.6 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at when arranged by Architect/Engineer/Designer.

B. Architect/Engineer/Designer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, District engineer representative, Architect/Engineer/Designer, as appropriate to agenda topics for each meeting.

D. Agenda:
1. Review of Work progress.
2. Field observations, problems, and decisions.
3. Identification of problems, which impede planned progress.
4. Maintenance of progress schedule.
5. Corrective measures to regain projected schedules.
6. Coordination of projected progress.
7. Effect of proposed changes on progress schedule and coordination.

E. Record minutes and distributes copies within 5 days after meeting to participants and those affected by decisions made.

1.7 PREINSTALLATION MEETING

A. When required in individual specification sections, convene a pre-installation meeting at the site prior to commencing work of the section.

B. Notify Architect/Engineer/Designer seven days in advance of meeting date.

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

D. Record minutes and distributes copies within 5 days after meeting to participants and those affected by decisions made.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

A. Employ skilled and experienced installer to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements, which affect:
1. Structural integrity of element.
2. Integrity of weather-exposed or moisture-resistant elements.
3. Work of Owner or separate contractor.

C. Execute cutting, fitting, and patching to complete Work, and to:
1. Uncover Work to install or correct ill-timed Work.
2. Remove and replace defective and non-conforming Work.
3. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Cut masonry and concrete materials using masonry saw or core drill.

E. Fit Work tight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

F. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

G. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

H. Identify hazardous substances or conditions exposed during the Work to the Architect/Engineer/Designer for decision or remedy.

3.2 ALTERATION PROJECT PROCEDURES

A. Materials: As specified in Product sections; match existing Products and work for patching and extending work.

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

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

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

E. Finish surfaces as specified in individual Product sections.

END OF SECTION

01300

SUBMITTAL REQUIREMENTS

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.
M. Construction photographs.

1.2 RELATED SECTIONS

A. Section 01300 - Submittals
B. Section 01400 - Quality Control: Manufacturers' field services and reports.
C. Section 01700 - Contract Closeout: Contract warranties, bonds, manufacturers' certificates and closeout submittals.

1.3 REFERENCES

A. AGC Associated General Contractors of America publication "The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry".

1.4 SUBMITTAL PROCEDURES

A. Submit five (5) hard copies of each submittal with Architect/Engineer/Designer accepted form.

B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number and specification section number, as appropriate.

C. 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 the requirements of the Work and Contract Documents.

D. Schedule submittals to expedite the Project, and deliver to Architect/Engineer/Designer at business address. Coordinate submission of related items.

E. For each submittal for review, allow 15 days excluding delivery time to and from the contractor.

F. Identify variations from Contract Documents and Product or system limitations, which may be detrimental to successful performance of the completed Work.

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

1.5 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial schedule in duplicate within 15 days after date established in Notice to Proceed.
B. Revise and resubmit as required.
C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
D. Submit a horizontal bar chart with separate line for each major portion of Work or operation, identifying first workday of each week.

1.6 PROPOSED PRODUCTS LIST

A. Within 15 days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name and model number of each product.
B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation and reference standards.

1.7 PRODUCT DATA

A. Product Data for Review:
   1. Submitted to Architect/Engineer/Designer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
   2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

B. Product Data for Information:
   1. Submitted for the Architect/Engineer/Designer’s knowledge as contract administrator or for the Owner.

C. Product Data for Project Closeout:
   1. Submitted for the Owner's benefit during and after project completion.

D. Submit the number of copies, which the Contractor requires, plus two copies that will be retained by the Architect/Engineer/Designer.

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

F. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700 - CONTRACT CLOSEOUT.

1.8 SHOP DRAWINGS

A. Shop Drawings for Review:
   1. Submit five (5) hard copies to Architect/Engineer/Designer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
   2. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

B. Shop Drawings for Information:
   1. Submitted for the Architect/Engineer/Designer’s knowledge as contract administrator or for the Owner.

C. Shop Drawings For Project Closeout:
   1. Submitted for the Owner's benefit during and after project completion.

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

E. Submit in the form of one reproducible transparency and one opaque reproduction.

1.9 SAMPLES

A. Samples for Review:
   1. Submitted to Architect/Engineer/Designer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
   2. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

B. Samples for Information:
   1. Submitted for the Architect/Engineer/Designer’s knowledge as contract administrator or for the Owner.

C. Samples for Selection:
   1. Submitted to Architect/Engineer/Designer for aesthetic, color, or finish selection.
   2. Submit samples of finishes for Architect/Engineer/Designer selection.
   3. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

1.10 DESIGN DATA

A. Submit for the Architect/Engineer/Designer’s knowledge as contract administrator or for the Owner.
B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.11 TEST REPORTS

A. Submit for the Architect/Engineer/Designer’s knowledge as contract administrator or for the Owner.
B. Submit test reports for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.12 CERTIFICATES

A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor to Architect/Engineer/Designer, 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/Designer.

1.13 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery,

storage, assembly, installation, and start-up, adjusting and finishing, to Architect/Engineer/Designer 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.

C. Refer to Section 01400 - Quality Control, Manufacturers' Field Services article.

1.14 MANUFACTURER'S FIELD REPORTS

A. Submit reports for the Architect/Engineer/Designer's benefit as contract administrator or for the Owner.

B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.15 ERECTION DRAWINGS

A. Submit drawings for the Architect/Engineer/Designer’s benefit as contract administrator or for the Owner.

B. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

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

END OF SECTION

01400

QUALITY CONTROL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Quality assurance - control of installation.
B. Tolerances
C. References and standards.
D. Mock-up.
E. Inspecting and testing laboratory services.
F. Manufacturers' field services.

1.2 RELATED SECTIONS

A. Section 01300 - Submittals: Submission of manufacturers' instructions and certificates.
B. Section 01600 - Material and Equipment: Requirements for material and product quality.
C. Section 01650 - Starting of Systems.

1.3 QUALITY ASSURANCE - 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. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer/Designer 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 that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

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

1.4 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. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect/Engineer/Designer before proceeding.
C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.5 REFERENCES AND STANDARDS

A. For Products or workmanship specified by association, trade or other consensus standards, comply with requirements of the 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 for receiving bids or date specified in the individual specification sections, except where a specific date is established by code.
C. Neither the contractual relationships, duties or responsibilities of the parties in Contract nor those of the Architect/Engineer/Designer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.6 TESTING SERVICES

A. Contractor to provide all testing services as called out in these specifications.
B. Testing and source quality control may occur on or off the project site. Perform off-site testing as required by the Architect/Engineer/Designer or the Owner.
C. Testing does not relieve Contractor to perform Work to contract requirements.
D. Re-testing required because of non-conformance to specified requirements shall be performed by the same MoDOT personnel on instructions by the Architect/Engineer/Designer.

1.7 INSPECTION SERVICES

A. Owner will employ MoDOT Personnel to perform inspection.
B. Inspecting may occur on or off the project site. Perform off-site inspecting as required by the Architect/Engineer/Designer or the Owner.
C. Inspecting does not relieve Contractor to perform Work to contract requirements.

1.8 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 the balancing of equipment as applicable and to initiate instructions when necessary.
B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
C. Refer to Section 01300 - SUBMITTALS, MANUFACTURERS' FIELD REPORTS article.

PART 2 EXECUTION

2.1 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.

2.2 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 any new material or substance in contact or bond.

END OF SECTION

01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROL REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Temporary Utilities: Electricity, telephone service, facsimile service and sanitary facilities.
B. Temporary Controls: enclosures and fencing, protection of the Work and water control.
C. Construction Facilities: progress cleaning and temporary buildings.

1.2 TEMPORARY ELECTRICITY

A. Cost: By Contractor; pay for temporary power service furnished by MoDOT.

1.3 TELEPHONE SERVICE

A. Provide, maintain, and pay for telephone service to field office and Architect/Engineer/Designer's field office at time of project mobilization.

1.4 TEMPORARY WATER SERVICE

A. Connect to existing water source as directed for construction operations at time of project mobilization.
B. Contractor will reimburse Owner for water used in construction as agreed upon at time of project mobilization.

1.5 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

1.6 FENCING

A. Construction: Use plastic mesh safety fencing or better.
B. Provide 48" high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.7 WATER CONTROL

A. Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment.
B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.8 EXTERIOR ENCLOSURES

A. Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.9 PROTECTION OF INSTALLED WORK

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. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
F. Prohibit traffic from landscaped areas.

1.10 SECURITY

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

1.11 ACCESS ROADS

A. Provide and maintain access to fire hydrants, free of obstructions.
B. Provide means of removing mud from vehicle wheels before entering streets.
C. Designated existing on-site roads may be used for construction traffic.

1.12 PROGRESS CLEANING AND WASTE REMOVAL

A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces, prior to enclosing the space.
C. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.
D. Collect and remove waste materials, debris and rubbish from site periodically and dispose off-site.
E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.13 FIELD OFFICES AND SHEDS

A. Office: Weather tight, with lighting, electrical outlets, heating and ventilating equipment and equipped with drawing rack and drawing display table.
B. Provide space for Project meetings, with table and chairs to accommodate 6 persons.

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

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

END OF SECTION

01600

MATERIAL AND EQUIPMENT REQUIREMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Products.
B. Transportation and handling.
C. Storage and protection.
D. Product options.
E. Substitutions.

1.2 RELATED SECTIONS

A. Instructions to Bidders: Product options and substitution procedures.
B. Section 01400 - Quality Control: Product quality monitoring.

1.3 PRODUCTS

A. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
B. Provide interchangeable components of the same manufacture for components being replaced.

1.4 TRANSPORTATION AND HANDLING

A. Transport and handle Products in accordance with manufacturer's instructions.
B. Promptly inspect shipments to ensure that 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.

1.5 STORAGE AND PROTECTION

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 a 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.

1.6 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description is acceptable.
B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

1.7 SUBSTITUTIONS

A. Architect/Engineer/Designer will consider requests for Substitutions only within 15 days after date established in Notice to Proceed.

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

C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.

D. A request constitutes a representation that the Contractor:
1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
2. Will provide the same warranty for the Substitution as for the specified Product.
3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension that may subsequently become apparent.
5. Will reimburse Owner for review or redesign services associated with re-approval by authorities.

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 the Contract Documents.

F. Substitution Submittal Procedure:
1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
2. Submit shop drawings, product data and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
3. The Architect/Engineer/Designer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

01700

CONTRACT CLOSEOUT REQUIREMENT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Closeout procedures.
B. Final cleaning.
C. Adjusting.
D. Project record documents.
E. Operation and maintenance data.
F. Spare parts and maintenance Products.
G. Warranties.

1.2 RELATED SECTIONS

A. Section 01500 - Construction Facilities and Temporary Controls: Progress cleaning.
B. Section 01650 - Starting of Systems: System start-up, testing, adjusting and balancing.

1.3 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/Designer's review.
B. Provide submittals to Owner that is required by governing or other authorities.
C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments and sum remaining due.
D. Owner will occupy portions of the building as specified in Section 01010.
E. Projects shall not be accepted by MoDOT until the vendor has completed all punch list items. The vendor will then have 30 days to submit all required paperwork necessary to close the project. Failure to submit the required paperwork within 30 days could result in the debarment or suspension of the contractor from future projects

1.4 FINAL CLEANING

A. Execute final cleaning prior to final project assessment. 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.

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

C. Clean or replace filters of operating equipment used during construction and/or adjustment.

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

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

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

1.5 ADJUSTING

A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.6 PROJECT RECORD DOCUMENTS

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

B. Record information concurrent with construction progress.

C. 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.

D. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish main 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.

E. Submit documents to Architect/Engineer/Designer'swith claim for final Application for Payment.

1.7 OPERATION AND MAINTENANCE DATA

A. Submit data bound in 8-1/2 x 11 inch (A4) text pages, three D side ring binders with durable plastic covers.
B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project and subject matter of binder when multiple binders are required.
C. Internally subdivide the binder contents with permanent page dividers, logically organized; with tab titling clearly printed under reinforced laminated plastic tabs.
D. Submit 1 draft copy of completed volumes 15 days prior to final inspection. This copy will be reviewed and returned with Architect/Engineer/Designer comments. Revise content of all document sets as required prior to final submission.
E. Submit two sets of revised final volumes, within 10 days after final inspection.

1.8 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Provide spare parts, maintenance, and extra Products in quantities specified individual specification sections.
B. Deliver to Project site; obtain receipt prior to final payment.
C. Examine system components at a frequency consistent with reliable operation. Clean, adjust and lubricate as required.
D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
E. Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

1.9 WARRANTIES

A. Execute and assemble transferable warranty documents from Subcontractors, suppliers and manufacturers.
B. Submit prior to final Application for Payment.
C. For items of Work delayed beyond date of Final Completion, provide updated submittal within 10 days after acceptance, listing date of acceptance as start of the warranty period.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

02050

DEMOLITION

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

A. The work to be done under these Specifications shall include all labor, materials, equipment and services necessary to complete all demolition of roofing materials and passage doors as shown on Construction Documents.

PART 2 PRODUCTS

This Section not used.

PART 3 EXECUTION

3.1 PROTECTION OF EXISTING FACILITIES

A. The contractor shall, as soon as he receives a Notice to Proceed with work, enter the premises and do any and all things necessary to protect the premises from damage by unauthorized persons. The contractor shall protect all existing equipment, pavements, tracks, poles, pipes, utilities, etc., which are not affected by demolition work. The contractor shall provide all shoring, bracing, tarps, temporary partitions, barricades, and/or other safety devices deemed necessary for protection.

3.2 OWNERSHIP OF PROPERTY

A. No right, title property or interest of any kind whatsoever in or to the land or premises upon which such buildings or structures stand, is created, assigned, conveyed, granted, or transferred to the contractor, or any other person or persons, except only the right on entry to remove such buildings and structures in strict accordance with the Contract.

B. Only such property may be salvaged by contractor as is owned by MoDOT, and in the event of any doubt respecting the ownership of any particular property, the contractor shall request from MoDOT a written statement respecting its ownership.

3.3 DEMOLITION REQUIREMENTS

The work under this contract shall consist of the following:

A. Demolition and removal of all roofing materials and passage doors as shown on Construction Documents.
B. Provide, erect, and maintain temporary barriers and security devices.
C. Protect existing landscaping and/or paving that are not to be demolished.
D. Perform all other incidental work necessary to fully complete the contract.
E. All rubbish, non-reusable fill, debris, equipment, etc., resulting from demolition work shall be removed from the premises during and-or upon completion of work, leaving the site area acceptable to the satisfaction of the owner.
F. The contractor shall furnish the disposal site for all demolition materials.
G. The contractor shall take whatever steps necessary to control dust during demolition and removal. The contractor will monitor the haul road for debris.

END OF SECTION

06112

FRAMING AND SHEATHING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Roof framing.
B. Diaphragm trusses fabricated on site.
C. Roof sheathing.
D. Miscellaneous framing and sheathing.

1.2 RELATED SECTIONS

A. Sections 08111: Door openings to receive wood blocking.

1.3 REFERENCES

A. AHA (American Hardboard Association) A135.4 - Basic Hardboard.
B. ALSC (American Lumber Standards Committee) - Softwood Lumber Standards.
C. ANSI A208.1 - Mat-Formed Wood Particleboard.
D. APA (American Plywood Association).
E. NFPA (National Forest Products Association).
F. SPIB (Southern Pine Inspection Bureau).
G. WCLIB (West Coast Lumber Inspection Bureau).
H. WWPA (Western Wood Products Association).

1.4 SUBMITTALS FOR REVIEW

A. Shop Drawings For Site Fabricated Truss Frame: Indicate dimensions, wood species and grades, component profiles, drilled holes, fasteners, connectors, erection details and sequence.

1.5 QUALITY ASSURANCE

A. In lieu of grade stamping exposed to view lumber and plywood, submit manufacturer's certificate certifying that products meet or exceed specified requirements.
B. Design structural shop fabricated trusses under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State of Missouri.

1.6 DELIVERY, STORAGE AND PROTECTION

A. Section 01600 - Material and Equipment: Transport, handle, store and protect products.
B. Protect trusses from warping or other distortion by stacking in vertical position, braced to resist movement.

PART 2 PRODUCTS

2.1 SHEATHING MATERIALS

A. Plywood Roof Sheathing: APA Rated Sheathing Structural I Exposure Durability 1; unsanded and match existing depth..

2.3 SHEATHING AND UNDERLAYMENT LOCATIONS

A. Sloped Roof Sheathing: ½" thick (verify), 48 x 96 inch sized sheets, square edges.
B. Above Grade Wall Sheathing: ½ inch thick (verify), 48 x 96 inch sized sheets, square edges.

2.4 ACCESSORIES

A. Fasteners and Anchors:
   1. Fasteners: Hot dipped galvanized steel for high humidity and treated wood locations, unfinished steel elsewhere.
B. Sill Flashing (Under Sill Gasket): Galvanized steel.
C. Subfloor Glue: APA AFG-01, waterproof of solvent base, air cure type, cartridge dispensed.
D. Building Paper: No.15 asphalt felt.
E. Termite Shield: Galvanized sheet steel.

PART 3 EXECUTION

3.1 FRAMING

A. Set structural members level and plumb, in correct position.
B. Make provisions for erection loads and for sufficient temporary bracing to maintain structure safe, plumb and in true alignment until completion of erection and installation of permanent bracing.
C. Place horizontal members, crown side up.
D. Construct load bearing framing members' full length without splices.
E. Double members at openings over 24 inches wide. Space short studs over and under opening to stud spacing.
F. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists. Framed rigidly into joists.
G. Bridge joists or other framing in excess of 8 feet span at mid-span. Fit solid blocking at ends of members.
H. Place full width continuous sill flashings under framed walls on cementitious foundations. Lap flashing joint 4 inches.
I. Coordinate installation of wood decking, wood chord metal joists, glue laminated structural units, prefabricated wood trusses or plywood web joists.

3.2 SHEATHING

A. Secure roof sheathing with longer edge perpendicular to framing members and with ends staggered and sheet ends over bearing.
B. Use sheathing clips between sheets between roof framing members. Provide solid edge blocking between sheets. Fully engage tongue and groove edges.
C. Secure wall sheathing with long dimension parallel to wall studs, with ends over firm bearing and staggered.
D. Place plywood or structural-use panel sheeting at building corners for a horizontal distance of 48 inches.
E. Place building paper sheathing; weather lap edges and ends.
F. Secure sheathing with longer edge perpendicular to framing and with end joints staggered and sheet ends over bearing. Attach with glue and screws.

3.3 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

END OF SECTION

07212

BOARD INSULATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Board insulation attached with adhesive to exterior of existing CMU walls on both buildings.

1.2 REFERENCES

A. ASTM C208 - Insulating Board (Cellulosic Fiber), Structural and Decorative.
B. ASTM C240 - Testing Cellular Glass Insulating Block.
C. ASTM C578 - Preformed, Cellular Polystyrene Thermal Insulation.
D. ASTM C612 - Mineral Fiber Block and Board Thermal Insulation Board.
E. ASTM C578 - Preformed Cellular Polystyrene Thermal Insulation.
F. ASTM D2842 - Water Absorption of Rigid Cellular Plastics.
G. ASTM E96 - Test Methods for Water Vapor Transmission of Materials.

1.3 SYSTEM DESCRIPTION

A. Materials of This Section: Provide continuity of thermal barrier at building enclosure elements.
B. Materials of This Section: Provide thermal protection to vapor retarder in conjunction with vapor retarder materials.
C. Materials of This Section: Provide thermal protection to air seal materials at building enclosure elements in conjunction with air barrier materials.

1.4 ENVIRONMENTAL REQUIREMENTS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

1.5 COORDINATION

A. Coordinate work under provisions of Section 01039.
B. Coordinate the work with installation of vapor retarder and air seal materials.

1.6 ACCESSORIES

A. Building wrap: Equal to Tyvek.
B. Insulation Fasteners: Apply adhesive to adhere to surface to receive board insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

PART 2 PRODUCT

2.1 MATERIALS

A. Provide the following perimeter insulation where shown on the Drawings or otherwise needed to achieve the degree of insulation required under pertinent regulations of governmental agencies having jurisdiction.
   1. 1-1/2" rigid insulation board (blue) that has a minimum R - Value of 7.5.
   a. Acceptable Products:
      (1) "Styrofoam" brand, Square Edge as manufactured by Dow Chemical Company, 2020 Willard H. Dow Center, Midland, Michigan 48674, (800) 232-2436.

(2) Similar products may be substituted with prior approval from the Architect.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify site conditions under provisions of Section 01039.
B. Verify that substrate, adjacent materials and insulation boards are dry and ready to receive insulation and adhesive.
C. Verify substrate surface is flat, free of honeycomb, fins, irregularities or materials or substances that may impede adhesive bond.

3.2 INSTALLATION

A. See Construction Documents.

3.3 PROTECTION OF FINISHED WORK

A. Protect finished Work under provisions of Section 01500.
B. Do not permit work to be damaged prior to covering insulation.

END OF SECTION

07411

METAL ROOF AND WALL PANELS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: Factory-formed metal roof and wall panels, including fascia, soffit and liner panels and includes:

1. Factory-formed panels in vertical installation.
2. Factory-formed panels in horizontal installation.
3. Metal flashings and trim.

1.1 REFERENCES

A. American Society for Testing and Materials (ASTM):
1. ASTM A653/A653M Standard specification for steel sheets, zinc-coated (galvanized) or zinc-iron alloy-coated (galvannealed) by the hot-dip process.
2. ASTM A792/A792M Standard specification for steel sheet, 55% aluminum-zinc alloy coated by the hot-dip process.
3. ASTM B209 Standard specification for aluminum and aluminum-alloy sheet and plate.
4. ASTM D2247 Standard practice for testing water resistance of coatings in 100% relative humidity.
5. ASTM E1680 Standard test method for determining the rate of air leakage through exterior metal roof systems under specified pressure differences across the specimen.
6. ASTM E1646 Standard test method for water penetration of metal roof systems by uniform static air pressure difference.
7. ASTM G90 Standard practice for performing accelerated outdoor weathering of non-metallic materials using concentrated natural sunlight.

1.2 SYSTEM DESCRIPTION

A. Panel Performance requirements: Provide panels, which have been manufactured, fabricated and installed to withstand structural and thermal movement, wind loading and weather exposure to maintain manufacturer's performance criteria without defects, damage, failure or infiltration of water.

B. Finish Performance Requirements:
1. Color change and fade resistance: No cracking, peeling, blistering or loss of adhesion when tested in accordance with ASTM G23; color change, after removal of surface deposits sucha s dirt or chalk, maximum 5 Hunter units.
2. Humidit resistance: No blistering peeling, or loss of adhesion after 2000 hours testing in accordance with ASTM D2247.

1.3 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 submittal procedures section.
B. Product Data: Submit manufacturer's product data for specified products.
C. Shop Drawings: Submit shop drawings showing layout, profiles, and product components, including anchorage, accessories, finish colors and textures.
1. Indicate layout of panels and panel sizes, including custom-fabricated panels if indicated: indicate each item of trim and accessories.
2. Indicate in detailed drawings profile and gauge of interior and exterior sheets, and location

and types of fasteners; indicate locations, gauges, shapes and methods of attachment of panels, trim and accessory items.

3. Indicate products/materials required for construction activities of this section not supplies by manufacturer of products of this section.

D. Samples: Submit selection and verification samples for finishes, colors and textures.
   1. Selection Samples: For each product requiring color selection, 2 sets of manufacturer's sample chips representing full range of colors and finishes available.
   2. Verification Samples: For each color and finish selected, 2 chips indicating match to selected color and finish.

E. Quality Assurance Submittals: Submit the following
   1. Contractor Certificates: Contractor's certification that:
      a. Manufacturer of products of this section meets specified qualifications.
      b. Installer of products of this section meets specified qualifications.
   2. Manufacturer Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and physical requirements.
   3. Manufacturer's Instructions: Manufacturer's installation instructions.

F. Closeout Submittals: Submit the following
   1. Warranty: Warranty documents specified herein.
   2. Record Documents: Project record documents for installed materials in accordance with Division 1 Closeout submittals (project record documents) section.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in the installation of work similar to that required for this project.
   1. Certificate: When requested, submit certificates indicating qualification.

B. Sheet Metal Industry Standard: Comply with Sheet Metal and Air Conditioning Contractors National Association (SMACNA) Architectural Sheet Metal Manual.

C. Preinstallation Meetings: Conduct preinstallation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination, Project Meetings Section.

1.1 DELIVERY, STORAGE & HANDLING

A General: Comply with Division 1 Product Requirements Sections.
   1. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Deliver: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Indentify fabricated components with UL 90 label where appropriate.

C. Packing, Shipping, Handling, and Unloading:
   1. Bundle panels in waterproof wrapping paper when nested, or wooden crates when panels cannot be nested.
   2. Package trim and accessories in waterproof wrapping paper.

D. Storage and Protection: Store materials protected from exposure to harmful conditions. Store material in dry, above-ground location.
   1. Stack prefinished material to prevent twisting, bending, abrasion, scratching and denting. Elevate one end of each skid to allow for moisture run off.
   2. Store products of this section in manufacturer's unopened packaging until installation of products.
   3. Maintain dry, heated storage area for products of this section until installation of products.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurement before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

1.7 WARRANTY

A. Project warranty: Refer to conditions of the contract for project warranty provisions.
B. Manufacturer's Warranty: Submit for Owner's acceptance manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not a limitation of other rights Owner may have under the Contract Documents.
   1. Warranty Period: one year commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.1 METAL WALL AND ROOF PANELS

A. Manufacturer: McElroy Metal, Inc.
   1. Contact: 1500 Hamilton Road, Bossier City, LA 71111; Telephone (800) 950-6531, (318) 747-8000; Fax (318) 747-8059; Email marketing@mcelroymetal.com; website www.mcelroymetal.com
   2. Proprietary products: McElroy Preformed Wall and Roof Panels.

B. Or Equal.

2.2 MANUFACTURED UNITS

A. McElroy Max-rib panel
   1. Profile: 26 gauge major longitudinal ribs 3/4" (45 mm) deep, spaced 9" (229 mm) on center; minor longitudinal ribs centered between major ribs.
   2. Size: 36" (914 mm) cover width, lengths indicated on drawings.
   3. Material Galvalume steel sheet conforming to ASTM A792, AZ55 coating ; [-] gauge sheet thickness.
   4. Finish: Polyvinylidene fluoride color coat, minimum 70 % polyvinylidene fluoride resin content, applied to sight-exposed face of sheet after pretreatment and priming in accordance with coating manufacturer's recommendations.
      a. Color: Selected from full range of manufacturer's standard colors.
      b. Color:
      c. Color: in schedule at end of section.

B. Trim
   1. Manufacturer's standard 26 gauge sheet metal matching panel material and finish, break-formed, to profiles indicated on drawings, and including, but not limited to:
      a. Copings.
      b. Gravel stops.
      c. Gutters and downspouts.
      d. Termination and transition strips.
   2. Color: Match panel finish.
   3. Color: Selected from full range of manufacturer's standard color.

C. Clips and Fasteners: Supply items required for installation of panels in accordance with manufacturer's installation instructions and other indicated items; supply galvanized clips and fasteners.

2.3 MATERIALS

A. Galvanized Steel Sheet: ASTM A653, G90 steel sheet, zinc coated (galvanized) by hot dip process, structural quality.

2.4 RELATED MATERIALS

A. General: Coordinate use of related materials:
   1. Sealants: Refer to Division 7 Joint Sealants Section.

2.5 SOURCE QUALITY

A. Source Quality: Obtain metal panel products from a single manufacturer.

2.6 A. Closure Strips/Rat Guard: Equal to Midwest Manufacturing Economy Vented Closure Strips.

PART 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, recommendations and installations instructions for substrate verification, preparation requirements and installation.

1. Verification of Conditions:
   a. Panel support systems are ready for construction activities of this section and within specified tolerances.
   b. Rough-in utilities are in correct locations.
2. Installer's Examination:
   a. Have installer of this section examine conditions under which construction activities of this section are to be performed, then submit written notification if such conditions are unacceptable.
   b. Transmit 2 copies of installer's report to Architect within 24 hours of receipt.
   c. Delay construction activities of this section until unacceptable conditions have been corrected.
   d. Beginning construction activities of this section indicates installer's acceptance of conditions.

3.2 PREPARATION

A. Coordination: Coordinate metal roofing with other work including drainage, flashing and trim, deck substrates, parapets, copings, walls and other adjoining work to provide a noncorrosive and leakproof installation.

B. Dissimilar Metals: Prevent galvanic action of dissimilar metals.

3.3 INSTALLATION

A. General: Install metal roofing panels to profiles, patterns and drainage indicated and required for leakproof installation. Provide for structural and thermal movement of work. Seal joints for leakproof installation.

1. Seams: Provide uniform, neat seams.
2. Fasteners: Conceal fasteners where possible in exposed work. Cover and seal fasteners and anchors for watertight and leakproof installation.
3. Sealant-Type Joints: Provide sealant-type joint where indicated. Form joints to conceal sealant. Comply with Division 7 Joint Sealants Section for sealant installation.

B. Panel Installation:

1. Install panels plumb, true in correct alignment with structural framing, in accordance with shop drawings and manufacturer's printed installation instructions.
2. Install panels in horizontal installations using manufacturer's concealed fastening system only; sight-exposed fasteners are prohibited.
3. Install panels in vertical installations using manufacturer's concealed fastening system or noncorroding fasteners color-match to panel.
4. Install trim using concealed fasteners where possible; sight-exposed noncorroding fasteners color-matched to trim are permitted on vertical surfaces only.

C. Installation Tolerances:

1. Variation from Plumb: Maximum 1/8" (3.2 mm) in 20 feet (6.096m).
2. Variation from Level: Maximum 1/8" (3.2 mm) in 20 feet (6.096m).
3. Variation from True Plane: Maximum 1/8" (3.2 mm) in 20 feet (6.096m).

3.4 FIELD QUALITY REQUIREMENTS

A. Site Tests (Post-Installation Testing): Owner reserves right to perform post-installation testing of installed metal panel installation.

B. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

3.5 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and leaglly dispose of the debris.

1. Remove strippable coating from perform dry wipe-down cleaning of panels as erected.

3.6 PROTECTION

A. Protection: Protect installed product's finish surfaces from damage during construction.

1. Protect installed products from damage by subsequent construction activities.
2. Replace products having damage other than minor finish damage.
3. Repair products having minor damage to finish in accordance with panel manufacturer's recommendations.
4. Architect shall be sole judge of acceptability of repair to damaged finishes; replace products having rejected repairs.

END OF SECTION

07465

ALUMINUM SOFFIT PANELS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preformed aluminum soffit panels, trim, and accessories for enclosing exterior roof overhangs.

1.2 RELATED SECTIONS

A. Section 06112 – Framing and Sheathing.
B. Section 07900 – Joint Sealers.

1.3 REFERENCES

A. AAMA 1402-86 – Aluminum Siding, Soffit, and Fascia.
B. ASTM B 209 – Aluminum and Aluminum-Alloy Sheet and Plate.
C. ASTM D 226 – Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
D. ASTM E 84 – Surface Burning Characteristics of Building Materials.

1.4 PERFORMANCE REQUIREMENTS

A. Soffits shall be fabricated and installed to withstand positive and negative wind pressure loads in accordance with applicable codes.
B. Soffit system to accommodate without damage to components or failure of weather barrier movement caused by seasonal temperature cycling and deflection of structural support framing.
C. Moisture entering or condensation occurring within soffit system shall drain to exterior.

1.5 SUBMITTALS

A. Provide in accordance with Section 01300:
   1. Product data including material descriptions, dimensions, and profiles.
   2. Shop drawings showing layout, location of vents, dimensions, penetrations, trim, and installation methods.
   3. 4 inch long minimum samples of soffit panel and trim in color selected.
   4. Certificates documenting soffit system complies with requirements specified.
   5. Manufacturer's installation instructions.
   6. Copy of warranty for review by Architect.

1.6 QUALITY ASSURANCE

A. Manufacturer: Company with a minimum 5 years' successful experience manufacturing aluminum soffit.
B. Single Source Responsibility: To ensure functional and appearance compatibility, soffit panels and all trim pieces shall be products of single manufacturer.
C. Aluminum soffit system shall be fabricated and installed to comply with:
   1. AAMA 1402-86.
   2. International Code Council-ES Legacy – Report No. 97-64.
   3. International Conference of Building Officials (ICBO): Report No. 2027.

1.7 PRODUCT HANDLING

A. Deliver components in manufacturer's protective cartons clearly labeled as to specific products contained.

B. During delivery and storage keep cartons flat and supported along entire length.
C. Store material off ground, out of weather, in dry place. Provide ventilation. Protect from falling objects and construction activities.
D. Handling: Avoid gouging, scratching, and denting.

1.8 WARRANTY

A. Provide under provisions of section 01780 – Closeout Submittals: Fifty (50) year lifetime limited, non-prorated, transferable warranty.

PART 2 PRODUCTS

2.1 MATERIALS

A. Fabricate soffit panels and trim from sheet aluminum complying with ASTM B 209, AA3000 Alloy:
B. Minimum Aluminum Properties:
1. Ultimate Strength: 25 KSI.
2. Yield Strength: 22 KSI.
3. Modulus of Elasticity: 10,000 KSI.
4. Coefficient of Linear Thermal Expansion: 1.31 x 10(-5) inch/inch/degree F.
5. Melting Range: 1175 to 1210 degrees F.

2.2 SOFFIT PANELS

A. Type: Fully vented, hi-tensil, double V-groove soffit panel with installation flanges along both edges.
1. Dimensions: 12 inches exposed width by 144 inches long.
2. Thickness: 0.016 inches.
3. Profile: V-grooves forming three (3) 4-inch wide panels with all panels vented.
4. Net Free Open Area: 11.6 square inches per linear foot.
5. Surface: Smooth.
6. Finish Color: ???

2.3 TRIM

A. Provide trim pieces as detailed on manufacturer's installation manual and as required for complete, weathertight, functional installation.
B. Aluminum Trim: Fabricate from same material as soffit to shape, dimensions, and profile required to accommodate soffit panel and project conditions. Provide with channels to receive panels, flanges for concealed weathertight attachment, and slotted attachment holes. Color shall match or coordinate with soffit color. In order to eliminate or minimize visible joints, form in longest possible lengths with 10 feet being minimum.
1. J-channel: ½ inch wide channel to receive soffit panels with ½ inch attachment flange.
2. Reverse Frieze Molding: F-shaped piece with ½ inch wide channel to receive aluminum soffit panels.
3. Soffit T-Bar: Double channel to receive two soffit panels with exposed face.

2.4 ACCESSORIES

A. Fasteners: Weather and corrosion resistant nails of type, size, and spacing as recommended by soffit manufacturer.
1. Plain Shank Nails: Use for wood studs, furring, and other framing with minimum lengths of 1-1/2 inches. Allow ¾ inch minimum penetration into wood framing.
2. Screw Shank Nails: Use for plywood sheathing.
3. Exposed Nails: Trim nails that match soffit and trim.
B. Sealants: Silicone type as recommended by soffit manufacturer.

PART 3 EXECUTION

3.1 GENERAL

A. Prepare substrate and install soffit in accordance with manufacturer's instructions, approved shop drawings, and manufacturer's soffit installation manual.
B. Coordinate work with provisions and installation of exterior insulation finish system to ensure compatibility and weathertight, neat transition from vertical surface to horizontal soffit panels.

3.2 PREPARATION

A. Inspection: Verify that soffit support framing is rigid, level, and spacing does not exceed 24 inches. Do not proceed until deficiencies are addressed.

3.3 INSTALLATION

A. Field Cutting: Accurately measure and cut soffit panels and trim. Use power circular saw with 10-point aluminum cutting blade, duckbill sheet metal snips, or hacksaw as recommended by manufacturer for specific cutting operation.
B. Trim: Prior to installing soffit panels, locate and anchor perimeter to receive channels.
C. Soffit Panels:
    1. Layout panels as detailed on approved shop drawings. Provide vented panels to provide sufficient ventilation of space above soffit.
    2. Insert panel into receiver channel, flex panel, and insert other end into opposing receiver channel. Ensure panels are perpendicular to perimeter and aligned. Fasten panel to supports by nailing through attachment flanges.
    3. Oerlap, engage, and lock subsequent panels over preceding ones.
    4. At corners, miter cut soffit panels and install with soffit T-bar. Align joints and grooves of intersecting panels.
D. Expansion Joints: Where soffit panel engages receiver channel and where aluminum components butt or adjoin other materials, leave expansion gap:
    1. Hot weather with aluminum components partially expanded: 1/16 inch.
    2. Cold weather with aluminum components partially contracted: 1/8 inch.
E. Fastening: Install panels and trim with nails. Where exposed, use trim nails with color to match aluminum components.
    1. Drive fasteners straight and level. Do not slant fasteners.
    2. Do not drive head of fastener tightly against attachment flange. Allow 1/32 inch clearance between fastener head and aluminum surface.
    3. Do not place fastener through face of soffit panel.
    4. Spacing: Fasten soffit panels at 24 inches maximum.
E. Sealants: Apply sealants where indicated on manufacturer's approved shop drawings and as required to provide weathertight installation. Depth of sealant bead shall be ¼ inch minimum.

3.4 CLEANING AND PROTECTION

A. Clean aluminum soffits and trim. Use detergent as required. Do not use solvents, abrasive, wire brushes, or streel scrapers.
B. Remove Excess materials and debris from site.
C. Protect soffit from subsequent construction operations. If damage occurs, remove and replace damaged components to provide installation in original, undamaged condition.

END OF SECTION

07600

FLASHING AND SHEET METAL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fascia Systems
B. Metal Roof Flashing and Trim

1.2 RELATED SECTIONS

A. Section 06112 – Framing and Sheathing
B. Section 07900 - Sealants

1.3 REFERENCES

A. ASTM A 526 – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.
B. ASTM A 527 – Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Lock-Forming Quality.
C. ASTM B 209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
D. National Roofing Contractors Association (NRCA) – "Roofing and Waterproofing Manual" third edition.
E. Sheet Metal and Air Conditioning Contractor's National Association (SMACNA) – Architectural Sheet Metal Manual.

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.
B. Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation method.
C. Shop Drawings:
   1. Indicate material profile, dimensions, jointing pattern, jointing details, fastening methods, flashing, termination, and installation details.
   2. Show the layout of wall sections, attachment, joint details, trim flashing, accessories and air infiltration seals.
   3. Show thickness of treated wood nailers and substrate.
D. Design Data:
   1. Submit manufacturer's certification that product supplied meets Factory Mutual Research Corporation's (FMRC) requirements for Roof Perimeter Flashing for use in Zone 1 and Zone 2 Windstorm Resistance Areas as defined in FME & R Loss Prevention Data Sheet 1-7 and 1-49 design recommendations, and meets the wind resistance requirements specified.
   2. Certify that perimeter metal edge systems furnished meet the specified design pressures as tested using ANSI/SPRI ES-1-98 test method RE-2 or RE-3 test methodology.
   3. Certify that membrane attachment by perimeter edge systems exceeds 100 lb/ft of force as tested by ANSI/SPRI ES-1-98 test method RE-1.
E. Verification Samples: For each finish product specified, two samples, minimum size 6 inches square, representing actual product, color, and pattern.

1.5 QUALITY ASSURANCE

A. Installer qualifications: Companies specializing in sheet metal work with 5 years documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.
B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
C. Materials shall be delivered with identification labels, warnings and storage recommendations.
D. Materials shall be stored in a clean, dry location prior to installation to prevent any damage to the contents. Store materials off the ground and protect from damage and deterioration as required by the material manufacturer.
E. Handle materials to prevent damage to their surfaces, edges and ends of metal items. Damaged material shall be rejected and immediately removed from the site.

1.7 PROJECT CONDITIONS

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

1.8 WARRANTY

A. Warranty Certification: Installing contractor shall certify that sheet metal work has been installed per National Sheet Metal System's printed details and specifications.
B. Manufacturer warrants sheet metal fabrications are warranted to be free of defects in material and workmanship for a period of five (5) years from date of shipment.
C. Provide manufacturer's Twenty (20) year finish warranty for standard coil-coated Kynar 500 colors against peeling, chalking, fading, checking and crazing, commencing upon date of final completion.
D. No other warranties either expressed or implied are acceptable unless so stated in writing.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: McElory Metal, PO Box 1148, Shreveport, LA 71163, Toll free 800-950-6532.
B. Equal to 26 ga. Max-Rib Ultra with Kynar 500® coating.
C. Other manufacturer's as approved by the Architect.

2.2 FASCIA AND ROOF EDGE SYSTEMS

A. Provide fascia/flashing system which meets the criteria recommended by Factory Mutual Research Corporation's (FRMC) requirements for Roof Perimeter Flashing for use in Zone 1 and Zone 2 Windstorm Resistance Areas as defined in FME & R Loss Prevention Data Sheet 1-7 and 1-49.
B. 2-Piece Fascia:
    1. As shown on details.
C. Accessories:
    1. Closure Cleat.
    2. Custome Fabrications as shown on details.
D. Fascia Covers and Accessories to be Fabricated from:
    1. .050 inch aluminum ASTM B 209 3105-H14 alloy.
E. Waterdam Components:
    1. 0.040 inch aluminum ASTM B 209 3105-H14 alloy.

F. Standard Length of Product: Produce components in longest possible lengths for system specified.
G. Aluminum Finish:
1. Kynar 500/Hylar 5000 from manufacturer's standard coil-coated colors.
a. Color – Picked by Facilities Manager.

2.3 METAL ROOF FLASHING & TRIM

A. Profile: As indicated on Roof Manufacturer's standard details.
1. Pitch Break.
2. Valley Flashing.
3. Peak Flashing.
4. Ridge/Hip Flashing.
5. Eave Flashing.
6. Outside Corner Flashing.
7. Inside Corner Flashing.
8. Material and Finish: 26 ga. Steel galvanneal/paint grip.
B. Steel Finish:
1. Prefinished steel with Kynar 500/Hylar 5000 from manufacturer's standard colors.

2.4 MATERIALS

A. Prefinished Zinc-Coated Steel: Hot-dip galvanized steel, commercial quality A1 S1 G90 extra smooth, primed on both sides and finished on 1 side with 70 percent Kynar 500 based fluorocarbon coating of minimum 0.70 mils total dry film thickness.
1. Strippable coating: Shop-applied liquid to front side of pre-finished metal to protect finish during fabrication, shipment, and field handling.
B. Prefinished Aluminum Sheet: ASTM B 209, alloy 3003, coil-coated, 70 percent Kynar based fluorocarbon coating of minimum 0.70 mils total dry film thickness.

2.5 FABRICATION

A. General Metal Fabrication: Shop-fabricate work to the greatest extent possible. Comply with details indicated on Drawings, and with applicable requirements of SMACNA. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
B. Seams: Fabricate non-moving seams in sheet metal with flat-lock seams. Form seams and solder tin edges to be seamed.
C. Expansion and Contraction:
1. Provide for thermal expansion and contraction, and building movement in completed work, without over-stressing the material, breaking connections, or producing wrinkles and distortion in finished surfaces. Make watertight and weather-resistive.
2. Where subject to thermal expansion and contraction, attach members with clips to permit movement without damage, or provide slotted or oversize holes with washers only, as acceptable to Architect.
3. Make lock seam work flat and true to line, and sweat full of solder, except where installed to permit expansion and contraction.
a. Lap flat lock seams and soldered lap seams according to pitch, but in no case less than 3 inches. Make seams in direction of flow.
D. Sealant Joints: Where movable, non-expansion type joints are indicated, or required for proper performance of work, form metal to provide for proper installation of sealant per SMACNA standards.

E. Metal Separation: Separate metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact with bituminous coatings or other permanent separation as recommended by manufacturer.

F. Soldering:
   1. Clean material and tin prior to soldering. Solder with heavy coppers of blunt design, properly tinned before use.
   2. Solder slowly with well-heated coppers. Heat seams thoroughly and completely fill with solder.
   3. Make exposed joints on finish surfaces full flowing and smooth.
   4. Wash acid flux with soda solution after soldering, and remove soldering flux on exposed and painted surfaces.

G. Accessories:
   1. Factory assemblies shall be furnished to maintain watertight integrity.
   2. Provide matching accessories or other special fabrications from the manufacturer; color to match specified profile unless noted otherwise.

H. Fascia/flashing sections furnished with strippable protective vinyl masking shall have film removed immediately before installation to prevent damage to the coating if left exposed to the ultra-violet rays of sunlight.

PART 3 EXECUTION

3.1 EXAMINATION

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

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

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

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

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Except as otherwise indicated, comply with SMACNA recommendations.

C. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units. Conceal fasteners wherever possible, and set units true to line and level. Install work with laps, joints, and seams that will be permanently watertight and weather-restive.

D. Strictly follow the material manufacturer's printed installation requirements.

E. Completed work shall be true to line without buckling, creasing, warp or wind in finished surfaces. "Oil-canning" surfaces are not acceptable.

F. Isolate dissimilar metals, masonry or concrete from metals using bituminous paint, tape or slip-sheet. Use gasketed fasteners where required to prevent corrosive actions.

G. Allow sufficient clearances for expansion and contraction of linear metal components. Secure metal using continuous cleats, clips and fasteners as required by the system. No exposed face fastening shall be accepted.

3.4 PROTECTION

A. Protect installed products until completion of project.

B. Maintain prefinished surfaces in undamaged condition until date of final completion. Repair or replace damaged components, any touch-up to be indistinguishable from undamaged surface/finish.

C. Upon completion of work, a final inspection by the owner's representative shall be made. Any necessary corrective actions will be noted and the installing contractor shall make corrections within five (5) working days. Upon acceptance of the project, any applicable warranties shall be presented to the owner's representative.

END OF SECTION

07631

GUTTERS AND DOWNSPOUTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Pre-finished continuous aluminum gutters and downspouts.
B. Precast concrete splash pads. (N.I.C.)

1.2 RELATED SECTIONS

A. Section 09900 - Painting: Field painting of metal surfaces.

1.3 REFERENCES

A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

1.4 DESIGN REQUIREMENTS

A. Conform to SMACNA Manual CDA Handbook for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

1.5 SUBMITTALS FOR REVIEW

A. Section 01300 - Submittals: Procedures for submittals.
B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations and installation details.
C. Samples: Submit two samples, 12 inches long illustrating component design, finish, color and configuration.

1.6 DELIVERY, STORAGE, AND PROTECTION

A. Section 01600 - Material and Equipment: Transport, handle, store and protect.
B. Stack material to prevent twisting, bending or abrasion and to provide ventilation. Slope to drain.
C. Prevent contact with materials during storage that may cause discoloration, staining or damage.

1.7 PROJECT CONDITIONS

A. Section 01039 - Coordination and Meetings.
B. Coordinate the work with downspout discharge pipe inlet.

PART 2 PRODUCTS

2.1 MATERIALS

A. Pre-Finished Aluminum Sheet: ASTM B209; 0.032 inch thick; plain finish shop pre-coated with acrylic coating; color as selected from manufacturer's standard.

2.2 COMPONENTS

A. Gutters: SMACNA Square style profile.
B. Connectors: Furnish required connector pieces for PVC (Polyvinyl Chloride) components.
C. Anchors and Supports: Profiled to suit gutters and downspouts.

1. Anchoring Devices: Type recommended by fabricator.
2. Gutter Supports: Straps. Spikes and ferrules.
3. Downspout Supports: Straps.

D. Fasteners: Aluminum. Same material and finish as gutters and downspouts, with soft neoprene washers.

2.3 ACCESSORIES

A. Splash Pads: Precast concrete type, size and profiles indicated; minimum 3000 p.s.i. at 28 days, with minimum 5 percent air entrainment. (N.I.C.)
B. Downspout Boots: PVC.

2.4 FABRICATION

A. Form gutters and downspouts of profiles and size indicated.
B. Fabricate with required connection pieces.
C. Form sections square, true and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.
D. Hem exposed edges of metal.
E. Fabricate gutter and downspout accessories; seal watertight.

2.5 FACTORY FINISHING

A. Modified silicone polyester coating: Baked enamel system conforming to AAMA 603.8.
B. Primer Coat: Finish concealed side of metal sheets with primer compatible with finish system, as recommended by finish system manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
B. Verify that contact surfaces are ready to receive work.

3.2 PREPARATION

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

3.3 INSTALLATION

A. Install gutters, downspouts and accessories in accordance with manufacturer's instructions.
B. Slope gutters 1/8 inch per foot
C. Connect downspouts to downspout boots or shoes at 8 inches above grade or into storm sewer system. Seal connection watertight.
D. Set splash pads under downspouts.

END OF SECTION

07900

JOINT SEALERS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Sealants and joint backing.
B. Precompressed foam sealers.
C. Hollow gaskets.

1.2 RELATED SECTIONS

A. Section 07311: Sealants required in conjunction with waterproofing.
B. Section 08800 - Glazing: Glazing sealants and accessories.

1.3 REFERENCES

A. ASTM C834 - Standard Specification for Latex Sealing Compounds.
B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
C. ASTM C1193 - Standard Guide for Use of Joint Sealants.
D. ASTM D1056 - Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
E. ASTM D1565 - Standard Specification for Flexible Cellular Materials -Vinyl Chloride Polymers and Copolymers (Open-Cell Foam).
F. ASTM D1667 - Standard Specification for Flexible Cellular Materials -Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years experience.
B. Applicator Qualifications: Company specializing in performing the work of this section and approved by manufacturer.

1.5 ENVIRONMENTAL REQUIREMENTS

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

1.6 COORDINATION

A. Section 01039 - Coordination and Meetings: Coordination requirements.
B. Coordinate the work with all sections referencing this section.

1.7 WARRANTY

A. Section 01700 - Warranties.
B. Correct defective work within a five-year period after Date of Substantial Completion.
C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal and exhibit loss of adhesion or cohesion or do not cure.

1.8 SEALANTS

A. Type I - General Purpose Exterior Sealant: Polyurethane or Polysulfide; ASTM C920, Grade NS, Class 25, Uses M, G and A; single or multi- component.
   1. Standard colors matching finished surfaces.

B. Type II - Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, non-drying, non-skinning, non-curing.
   1. Applications: Use for:
   a. Concealed sealant bead in sheet metal work.
   b. Concealed sealant bead in siding overlaps.

C. Type III - General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, single component, paintable.
   1. .Standard colors matching finished surfaces. Applications: Use for:
      a. Interior wall and ceiling control joints.
      b. Joints between door and window frames and wall surfaces.
      c. Other interior joints for which no other type of sealant is indicated.

PART 2 PRODUCTS

2.1 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 D1056, sponge or expanded rubber; 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 that substrate surfaces and joint openings are ready to receive work.
B. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Remove loose materials and foreign matter that might impair adhesion of sealant.
B. Clean and prime joints in accordance with manufacturer's instructions.
C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
D. Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

A. Perform installation in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
B. Perform installation in accordance with ASTM C1193.
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.

H. Precompressed Foam Sealant: Do not stretch; avoid joints except at corners, ends, and intersections; install with face 1/8 to 1/4 inch below adjoining surface.

I. Compression Gaskets: Avoid joints except at ends, corners, and intersections; seal all joints with adhesive; install with face 1/8 to 1/4 inch below adjoining surface.

3.4 CLEANING

A. Clean adjacent soiled surfaces.

3.5 PROTECTION OF FINISHED WORK

A. Protect sealants until cured.

END OF SECTION

08111

STANDARD STEEL DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-rated, fire rated and thermally insulated steel doors and panels.
B. Louvers. Glass and glazing.

1.2 RELATED SECTIONS

A. Section 08112 - Standard Steel Frames.
B. Section 08710 - Door Hardware.
C. Section 08800 - Glazing: Glass for doors.
D. Section 09900 - Painting: Field painting of doors.

1.3 REFERENCES

A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
B. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
C. ASTM E152 - Methods of Fire Tests of Door Assemblies.
D. NFPA 80 - Fire Doors and Windows.
E. NFPA 252 - Fire Tests for Door Assemblies.
F. SDI-100 - Standard Steel Doors and Frames.
G. UL 10B - Fire Tests of Door Assemblies.

1.4 SUBMITTALS FOR REVIEW

A. Section 01300 - Submittals: Procedures for submittals.
B. Shop Drawings: Indicate door elevations, internal reinforcement, closure method and cutouts for glazing and louvers.

1.5 SUBMITTALS FOR INFORMATION

A. Section 01300 - Submittals: Procedures for submittals.
B. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

1.6 QUALITY ASSURANCE

A. Manufacturer: Specializing in manufacturing products specified in this section with three years experience.

1.7 REGULATORY REQUIREMENTS

A. Installed Door and Panel Assembly: Conform to NFPA 80 for fire rated class as scheduled.

1.8 DELIVERY, STORAGE AND PROTECTION

A. Section 01600 - Material and Equipment: Transport, handle, store and protect products.
B. Accept doors on site in manufacturer's packaging. Inspect for damage.
C. Break seal on site to permit ventilation.

1.9 PROJECT CONDITIONS

A. Section 01039 - Coordination and Meetings.
B. Coordinate frame installation with size, location, and installation of service utilities.
C. Coordinate the work with door opening construction, doorframes and door hardware installation.
D. Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

PART 2 PRODUCTS

2.1 ACCEPTABLE PRODUCTS:

A. Allied Steel Products, Inc.
B. Amweld/Div. American Welding & Mfg. Co.
C. Ceco Corp.
D. Curries Mfg., Inc.
E. Pioneer Builders Products Corp./Div. CORE Industries, Inc.
F. Steelcraft/Div. American Standard Co.
G. Republic Builders Products Corp./Subs. Republic Steel.

2.2 DOORS AND PANELS

A. Astragals for Double Doors: Steel T shaped, specifically for double doors (As required).
B. Fabricate doors with hardware reinforcement welded in place.
C. Attach fire rated label to each fire rated door unit.
D. Configure exterior doors with special profile to receive recessed weather stripping.
E. Type and Design:
    1. Tightly hemmed vertical seam on lock and hinge edges, with top flush channel and beveled lock edge, in the dimensions and types shown on the drawings, reinforced for the finish hardware being provided under Section 08710 of these Specifications, and in the following gauges:
        a. Interior Doors: 18 gauge honeycomb core. Labeled and/or Non-labeled.
        b. Exterior Doors: 16 gauge insulated core. Labeled and/or Non-labeled.

2.3 FINISH

A. Steel Sheet: Exterior doors to be galvanized to ASTM A525.
B. Primer: Air-dried.
C. Paint per Specification Section 09900: color as selected.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install doors in accordance with SDI-100 and DHI.
B. Coordinate installation of glass and glazing.
C. Install door louvers, plumb and level.
D. Coordinate installation of doors with installation of frames and hardware specified in Section 08710.
E. Touch-up finished doors.

3.3 ERECTION TOLERANCES

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

3.4 ADJUSTING

A. Section 01650 - Starting of Systems: Adjusting installed work.
B. Adjust door for smooth and balanced door movement.

END OF SECTION

08112

STANDARD STEEL FRAMES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Non-rated and fire rated steel frames.
B. Interior and Exterior glazed light frames.

1.2 RELATED SECTIONS

A. Section 08111 - Standard Steel Doors.
B. Section 08710 - Door Hardware: Hardware, silencers and weather stripping.
C. Section 08800 - Glazing.

1.3 REFERENCES

A. ANSI A117.1 - Specifications for Making Buildings and Facilities Accessible to and Usable by Physically Handicapped People.
B. ASTM A525 - Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.
C. ASTM E152 - Methods of Fire Tests of Door Assemblies.
D. DHI - Door Hardware Institute: The Installation of Commercial Steel Doors and Steel Frames, Insulated Steel Doors in Wood Frames and Builder's Hardware.
E. NFPA 80 - Fire Doors and Windows.
F. NFPA 252 - Fire Tests for Door Assemblies.
G. SDI-100 - Standard Steel Doors and Frames.
H. UL 10B - Fire Tests of Door Assemblies.

1.4 SUBMITTALS FOR REVIEW

A. Section 01300 - Submittals: Procedures for submittals.
B. Shop Drawings: Indicate frame elevations, reinforcement, anchor types and spacing, location of cutouts for hardware and finish.

1.5 QUALITY ASSURANCE

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

1.6 REGULATORY REQUIREMENTS

A. Fire Rated Frame Construction: Conform to NFPA 252 or UL 10B.
B. Installed Frame Assembly: Conform to NFPA 80 for fire rated class same as fire door.

1.7 DELIVERY, STORAGE AND PROTECTION

A. Section 01600 - Material and Equipment: Transport, handle, store and protect products.
B. Accept frames on site in manufacturer's packaging. Inspect for damage.

1.8 PROJECT CONDITIONS

A. Section 01039 - Coordination and Meetings.
B. Coordinate the work with frame opening construction, door and hardware installation.

C. Sequence installation to ensure wire connections are achieved in an orderly and expeditious manner.

1.9 FRAMES

A. Frames: To suit SDI-100 Grade and Model of door specified in Section 08111.

PART 2 PRODUCTS

2.1 FRAMES

A. 16 gauge. To suit SDI-100 Grade.
   1. Provide drywall wrap around frames for interior and exterior doors.

2.2 ACCESSORIES

A. Removable Stops: Rolled steel channel shape, butted corners; prepared for countersink style tamper proof screws.
B. Bituminous Coating: Fibered asphalt emulsion.
C. Primer: Zinc chromate type.
D. Silencers: Specified in Section 08710.
E. Weatherstripping: Specified in Section 08710.

2.3 FABRICATION

A. Fabricate frames as welded unit.
B. Mullions for Double Doors: Fixed type, of same profiles as jambs.
C. Transom Bars for Glazed Lights: Fixed type, of same profiles as jamb and head.
D. Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.
E. Reinforce frames wider than 4" with roll formed steel channels fitted tightly into frame head, flush with top.
F. Configure exterior frames with special profile to receive recessed weather stripping.
G. Attach fire rated label to each fire rated door unit.

2.4 FINISH

A. Steel Sheet: Galvanized.
B. Primer: Air-dried.
C. Paint per Specification Section 09900: color as selected.
D. Coat inside of frame profile with bituminous coating.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
B. Verify that opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install frames in accordance with SDI-100 and DHI.
B. Coordinate with masonry, gypsum board or concrete wall construction for anchor placement.
C. Coordinate installation of glass and glazing.
D. Coordinate installation of frames with installation of hardware specified in Section 08710 and doors in Section 08111.

E. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

3.3 ERECTION TOLERANCES

A. Maximum Diagonal Distortion: 1/8" measured with straight edges, crossed corner to corner.

3.4 SCHEDULE

A. Refer to Door Schedule on drawings.

END OF SECTION

08710

DOOR HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Hardware for wood, hollow steel and aluminum doors.
B. Thresholds.
C. Weatherstripping, seals and door gaskets.

1.2 RELATED SECTIONS

A. Section 08111 - Standard Steel Doors.
B. Section 08112 - Standard Steel Frames.

1.3 REFERENCES

A. NFPA 80 - Fire Doors and Windows.
B. NFPA 101 - Life Safety Code.
C. NFPA 252 - Fire Tests of Door Assemblies.
D. UL 10B - Safety Fire Tests of Door Assemblies.

1.4 SUBMITTALS FOR REVIEW

A. Section 01300 - Submittals: Procedures for submittals.
B. Shop Drawings:
   1. Indicate locations and mounting heights of each type of hardware, schedules and catalog cuts.
   2. Submit manufacturer's parts lists and templates.
C. Samples:
   1. Submit 1 sample of hinge, latchset, lockset and closer, illustrating style, color and finish.
   2. Samples will be incorporated into the Work.

1.5 SUBMITTALS AT PROJECT CLOSEOUT

A. Section 01700 - Operation and Maintenance Data.
B. Section 01300 - Procedures for submittals.
C. Maintenance Data: Include data on operating hardware, lubrication requirements and inspection procedures related to preventative maintenance.
D. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.6 REGULATORY REQUIREMENTS

A. Products Requiring Electrical Connection: Listed and classified by Underwriters' Laboratories, Inc., as suitable for the purpose specified and indicated.

1.7 DELIVERY, STORAGE AND PROTECTION

A. Section 01600 - Material and Equipment: Transport, handle, store, and protect products.
B. Package hardware items individually, label and identify each package with door opening code to match hardware schedule.

1.8 PROJECT CONDITIONS

A. Section 01039 - Coordination and Meetings.
B. Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
C. Sequence installation to ensure utility connections are achieved in an orderly andexpeditious manner.
D. Coordinate Owner's keying requirements during the course of the Work.

1.9 WARRANTY

A. Provide five-year manufacturer warranty for door closers.

1.10 MAINTENANCE PRODUCTS

A. Section 01730 - Operation and Maintenance Data.
B. Provide special wrenches and tools applicable to each different or special hardware component.
C. Provide maintenance tools and accessories supplied by hardware component manufacturer.

1.11 EXTRA MATERIALS

A. Section 01730 - Operation and Maintenance Data.

PART 2 PRODUCTS

2.1 KEYING

A. Door Locks: Keyed in like-groups. Master keyed.
B. Include construction keying, and control keying with removable core cylinders. Key to the existing keying system where requested.
C. Supply keys in the following quantities:
    1. Two master keys.
    2. Four construction keys.
    3. Three change keys for each lock.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting work.
B. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
C. Verify that electric power is available to power operated devices and is of the correct characteristics.

3.2 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions.
B. Use templates provided by hardware item manufacturer.

3.3 FIELD QUALITY CONTROL

A. Section 01400 - Quality Control 01650 - Starting of Systems: Field inspection, testing, and adjusting.

B. Architectural Hardware Consultant will inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified.

3.4 ADJUSTING

A. Section: 01650 - Starting of Systems: Adjusting installed work.
B. Adjust hardware for smooth operation.

3.5 HARDWARE SCHEDULE

A. Furnish the following hardware groups in the amounts as indicated on the drawings.

1. Hardware group 1: Two doors that were replaced.

3	Pr. Butts	F179-4-1/2 x 4-1/2	US26D	Stanley
2	Entrance	35H7F15J-626		Best
2	Closer	8616DS		Dorma
2	Threshold	2005A 36" x AL		Pemko
2	Sweep	18062 36" x AL		Pemko
2	Gasket Set	305CN		Pemko
2	Kick Plate	8” x DW-2”		Rockwood
2	Top Filler Plate			

END OF SECTION

09900

PAINTING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Surface preparation.
B. Field application of paints, stains, varnishes and other coatings.

1.2 RELATED SECTIONS

A. Section 08111 – Standard Steel Doors.
B. Section 08112 – Standard Steel Frames.

1.3 REFERENCES

A. ASTM D16 - Standard Terminology Relating to Paint, Varnish, Lacquer and Related Products.
B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
C. NACE (National Association of Corrosion Engineers) - Industrial Maintenance Painting.
D. NPCA - Guide to U.S. Government Paint Specifications; National Paint and Coatings Association.
E. PDCA - Architectural Specifications Manual; Painting and Decorating Contractors of America.
F. SSPC - Steel Structures Painting Manual; Steel Structures Painting Council.

1.4 DEFINITIONS

A. Conform to ASTM D16 for interpretation of terms used in this section.

1.5 SUBMITTALS FOR REVIEW

A. Section 01300 - Submittals: Procedures for submittals.
B. Samples:
   1. Submit two paper chip samples, 2 x 4 inches in size illustrating range of colors and textures available for each surface finishing product scheduled.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
B. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years experience.

1.7 DELIVERY, STORAGE AND PROTECTION

A. Section 01600 - Material and Equipment: Transport, handle, store and protect products.
B. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
C. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation and instructions for mixing and reducing.
D. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Section 01600 - Material and Equipment: Environmental conditions affecting products on site.
B. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
C. Do not apply exterior coatings during rain or snow or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior, unless required otherwise by manufacturer's instructions.
E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.
F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.9 PROJECT CONDITIONS

A. Section 01039 - Coordination and Meetings.
B. Sequence application to the following:
    1. Do not apply finish coats until paintable sealant is applied.
    2. Back prime wood trim before installation of trim.

1.10 EXTRA MATERIALS

A. Section 01730 - Operation and Maintenance Data.
B. Supply 1 gallons of each color, type and surface texture; store where directed.
C. Label each container with color, type, texture and room locations in addition to the manufacturer's label.

PART 2 PRODUCTS

2.1 MATERIALS

A. Coatings: Ready mixed, except field-catalyzed coatings. Prepare pigments:
    1. To a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
    2. For good flow and brushing properties.
    3. Capable of drying or curing free of streaks or sags.
B. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
C. Patching Materials: Latex filler.
D. Fastener Head Cover Materials: Latex filler.

2.2 BRAND OF PAINT

A. Sherwin-Williams or equal.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01039 - Coordination and Meetings: Verification of existing conditions before starting Work.
B. Verify that surfaces and substrate conditions are ready to receive Work as instructed by the product manufacturer.
C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Test shop applied primer for compatibility with subsequent cover materials.

3.2 PREPARATION

A. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons and fittings prior to preparing surfaces or finishing.
B. Surfaces: Correct defects and clean surfaces that affect work of this section.
C. Marks: Seal with shellac those that may bleed through surface finishes.
D. Uncoated Steel and Iron Surfaces: Remove grease, mill scale, weld splatter, dirt and rust. Where heavy coatings of scale are evident, remove by [hand] [power tool] wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts and nuts are similarly cleaned. Spot prime paint after repairs.
E. Shop Primed Steel Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with a solvent. Prime paint bare steel surfaces.
F. Metal Doors Scheduled for Painting: Prime metal door top and bottom edge surfaces.

3.3 APPLICATION

A. Apply products in accordance with manufacturer's instructions.
B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
C. Apply each coat to uniform appearance. Apply each coat of paint slightly darker than preceding coat unless otherwise approved.
D. Sand wood surfaces lightly between coats to achieve required finish.
E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
F. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
G. Prime concealed surfaces of interior woodwork with primer paint.
H. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

3.4 CLEANING

A. Collect waste material that may constitute a fire hazard, place in closed metal containers and remove daily from site.

3.5 SCHEDULE - EXTERIOR SURFACES

A. Steel - Unprimed:
   1. One coat of alkyd primer.
   2. Two coats of alkyd enamel, gloss.
B. Steel - Shop Primed:
   1. Touch-up with zinc chromate primer.
   2. Two coats of alkyd enamel, gloss.
C. Steel - Galvanized:
   1. One coat galvanize primer.
   2. Two coats of alkyd enamel, gloss.
D. Aluminum:
   1. One coat etching primer.
   2. One coat of alkyd enamel, gloss.

END OF SECTION