PROJECT MANUAL



OWNER or TENANT
O'Reilly Automotive Stores, Inc.
Corporate Offices
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Springfield, MO 65802
417-862-2674 Phone

New O'Reilly Auto Parts Store
Commerce Pkwy
Adairsville, GA

PROJECT NUMBER (ADV)
COMMISSION NO. 4962

6-8-26

DOCUMENT 00 01 05

CERTIFICATION PAGE
ADAIRSVILLE, GA (ADV)

TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND BELIEF, THESE CONTRACT DOCUMENTS HAVE BEEN PREPARED IN ACCORDANCE WITH LOCAL AND STATE CODE REQUIREMENTS.

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END OF DOCUMENT

NEW O'REILLY AUTO PARTS STORE
ADAIRSVILLE, GA (ADV)

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 – GENERAL

1.01 SUMMARY

A. Project summary:
   1. Construction and completion of the O'Reilly Auto Parts Store for the Owner's intended use of wholesale and retail sale of auto parts at the location described in Invitation To Bid under a single lump sum contract and quantity of time as described in the Contract.
B. Work Owner, or Others, furnished and installed (Refer to drawings - Scope of Work Schedule).
C. Work Owner furnished, Contractor installed (Refer to drawings – Scope of Work Schedule). Contractor scope of work shall include coordination with Owner for ordering, receipt, handling, storage, and installation requirements of Owner furnished materials.
D. Permits and Fees: Apply for, obtain, and pay for permits, fees, and utility company back charges required to perform the work. Submit copies and invoices to Owner for reimbursement. No overhead and profit charges are allowed.
E. Industry Standards:
   1. Applicability of Standards: Except where more explicit or stringent requirements are written into the Contract Documents, applicable construction industry standards have the same force and effect as if bound into or copied directly into the Contract Documents. Such industry standards are made a part of the Contract Documents by reference. Individual specification sections indicate which codes and standards the Contractor must keep available at project site for reference.
   2. Publication Dates: Except as otherwise indicated, where compliance with an industry standard is required, comply with standard in effect as of date of Contract Documents.
   3. Conflicting Requirements: Where compliance with two or more standards is specified, and where these standards establish different or conflicting requirements for minimum quantities or quality levels, the most stringent requirement will be enforced, unless the Contract Documents specifically indicate otherwise. Refer requirements that are different, but apparently equal, and uncertainties as to which quality level is more stringent to the Owner for a decision before proceeding.
   4. Copies of Standard: The Contract Documents require that each entity performing work be experienced in that part of the work being performed. Each entity is also required to be familiar with industry standards applicable to that part of the work. Copies of standards are needed for proper performance of the work; the Contractor is required to obtain such copies directly from the publication source.
   5. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where acronyms or abbreviations are used in the specifications or other Contract Documents they are defined to mean the recognized name of the trade association, standards generating organization, governing authority, or other entity applicable to the context of the text provisions.
F. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. If pertinent codes and standards conflict with any instruction, process or material stated in the Contract Documents, the more stringent shall govern. Submit copies of inspection reports, notices and similar communications to Owner.
G. Definitions:
   1. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.

2. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of 'Approved' in General and Supplementary Conditions.
3. Match Existing: Match existing as acceptable to the Owner.

H. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonably implied or necessary for proper performance of the project shall be included.

I. Writing style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, 'Provide tile' means 'Contractor shall provide tile'.

PART 2 – PRODUCTS – Not Applicable To This Section

PART 3 – EXECUTION – Not Applicable To This Section

SECTION 05 40 00

COLD-FORMED METAL FRAMING

PART 1 – GENERAL

1.01 SUMMARY

A. Provide cold-formed metal framing:
   1. Exterior and interior load-bearing steel-stud framing.
   2. Exterior and interior nonload-bearing steel-stud framing.

1.02 SUBMITTALS

A. None required unless submitting for approved equals.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for at least three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards: Comply with the provisions of the following specifications and standards, except otherwise noted or specified, or as accepted or directed by the Architect.
   1. AISI, Specification for Design of Cold-Formed Steel Structural Members.
   2. AWS D1.3, Structural Welding Code.
   3. ASTM A1003 Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
   4. ASTM C645, Specifications for Non-Load (Axial) Bearing Steel Studs, Runners (Tracks), and Rigid Furring Channels for Screw Application of Gypsum Board.
   5. ASTM C754, Specifications for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Board.
   6. ASTM C1007, Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.

1.04 LOADING AND DEFLECTION CRITERIA

A. In addition to the loads indicated on the drawings, components to withstand design criteria as follows:
   1. Interior partition framing: 5 psf minimum lateral load.
   2. Exterior masonry veneer framing: L/600 total deflection.
   3. All other framing locations, unless otherwise indicated: L/240 total deflection.

B. Design system to provide movement of components without damage.

1.05 TOLERANCES

A. Fabrication Tolerances: 1/8-inch in 10'.

B. Erection Tolerances: 1/16-inch.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Manufacturers: Marino, Dietrich, Dale/Incor, Superior, USG, Gold Bond, Unimast, SCAFCO Steel Stud Company, or approved equal.

B. Sheet Steel: ASTM A1003, grade as required for structural performance of project conditions, G60 galvanized coating. Where in direct contact with fire treated wood products, provide G90 galvanized coating.

C. Cold-Formed Metal Framing Materials: Refer to drawings for specific member requirements:
   1. Exterior Framing: C-shaped load-bearing steel studs with 1.625-inch flange and flange return lip.
   2. Interior Framing (Load-Bearing): C-shaped steel studs with 1.625-inch flange and flange return lip.
   3. Interior Framing (Non-Load Bearing)" C-shaped steel studs with 1.250 inch flange and flange return lip.
   4. Shaftwall Framing: C-H, C-T, or I-shaped nonload bearing steel studs.
   5. Runner Channel: U-shaped with 1.25-inch minimum flange.
   6. Joist Framing: C-shaped load-bearing steel joists with 1.625-inch flange and flange return lip.
   7. Furring Channel: W-shaped steel furring channels.
   8. Furring Channel: Z-shaped, steel furring channels for rigid board insulation, 1 ¼" wide screw flange, toed in leg to grip insulation positively
   9. Resilient Channel: Single-leg, ½" deep x 1 ¼" wide screw flange
   10. Deflection Channel: Single slip track design with 2.0-inch minimum flange length.
   11. Units 14 gage (68 mils.) (.0677-inch min.) and heavier: Yield point 50,000 psi.
   12. Units 16 gage (54 mils.) (.0538-inch min.) and heavier: Yield point 50,000 psi.
   13. Units 18 gage (43 mils.) (.0428-inch min.): Yield point 33,000 psi.
   14. Units 20 gage (33 mils.) (.0329-inch min.): Yield point 33,000 psi.
   15. Units 24 gage (18 mils.) (.0179-inch min.): Yield point 33,000 psi.

D. Framing Accessories: With each type of metal framing required, provide manufacturers standard accessories as recommended by manufacturer for applications indicated, as needed to provide a complete metal framing system, including:
   1. Supplementary framing.
   2. Lateral bracing, bridging, and solid blocking.
      a. Strap: 1-1/2" x 20 gage.
      b. Channels: 1-1/2" x 20 gage.
   3. Web stiffeners.
   4. Gusset plates.
   5. Deflection track and vertical side clips.
   6. Stud kickers and girts.
   7. Joist hangers and end closures.
   8. Reinforcement plates.
   9. Anchors, clips, and fasteners.

PART 3 – EXECUTION

3.01 GENERAL

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

B. Comply with requirements of ASTM C1007 for installation of steel studs and accessories and Metal Lath/Steel Framing Association Lightweight Steel Framing Systems Manual.

C. Make provisions for erection stresses. Provide temporary alignment and bracing. Framing components may be prefabricated into panels prior to erection. Perform lifting of prefabricated panels in a manner to prevent damage or distortion in any members in the assembly. Wire tying of framing components is NOT permitted.

3.02 INSTALLATION

A. Runner Tracks: Install continuous tracks sized to match studs. Align tracks accurately to the layout at base and top of studs. Secure tracks as recommended by the stud manufacturer for the type of construction involved, except do not exceed 24-inches on center spacing for nail or power driven fasteners, nor 16-inches on center for other types of attachment. Provide fasteners at corners and ends of tracks.

B. Wall Studs: Install at 24-inches on center, unless otherwise indicated.
   1. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements.
   2. Secure studs to top and bottom runner tracks by either welding or screw fastening at both inside and outside flanges. Erect horizontal and vertical load bearing studs one piece full length. Splicing of studs is NOT permitted. Punch-outs shall be 10-inches minimum from ends of studs.
   3. Allow for deflection, directly below horizontal building framing for non-load bearing framing as indicated on drawings.
   4. Install horizontal stiffeners in stud system, spaced vertically at not more than 4 feet on center. Fasten at each stud intersection.
   5. Construct corners using minimum 3 studs. Double stud wall openings, door and window jambs with opening larger than 2 feet square, except where indicated in manufacturers instructions. Install runner tracks and jamb studs with stud shoes or by welding and space jack studs same as full height studs of the wall. Secure stud system all around to wall opening frame in the manner indicated.
   6. Install supplementary framing, blocking, and bracing in the metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework, heavy trim and furnishing, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with the stud manufacturer's recommendations and industry standards in each case, considering the weight of loading resulting from the items supported.
   7. Where stud system abuts structural columns or walls, anchor ends of stiffeners to supporting structure.
   8. Install diagonal racking bracing at each corner where walls are free standing and not attached to structure.
   9. Frame both sides of expansion and control joints, with separate studs; DO NOT bridge the joint with components of the stud system.

C. Joist: Install at 24-inches on center, unless otherwise indicated.
   1. Place joist as shown on drawings; not more than 2-inches from abutting walls. Connect joist to supports using fasteners or welding
   2. Set joist parallel and level, with lateral bracing and bridging.
   3. Locate joist end bearing directly over load bearing studs or provide load distributing member to top of stud track. Punch-outs shall be 10-inches minimum from ends of joist.
   4. Provide web stiffeners at reaction point and/or as shown on drawings.
   5. Provide double joist at floor openings exceeding 2 feet and at interruption of one or more spanning members.

6. End blocking shall be provided where joist ends are not otherwise restrained from rotation.

D. Restore damaged components. Protect work from damage.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 – GENERAL

1.01 SUMMARY

A. Provide the following where indicated on drawings:
   1. Rough hardware.
   2. Pipe bollards.
   3. Loose bearing, leveling plates and templates.
   4. Anchor bolts, expansion anchors and miscellaneous fasteners.
   5. Steel supports for work of other trades.
   6. Loose steel lintels.
   7. Pipe and tube handrails and guardrail systems.
   8. Roof access ladder.
   9. Sidewalk drain cover plates, edge angles, and studs.

1.02 SUBMITTALS

A. Comply with Section 01 33 00.
B. Upon request submit shop drawings of pipe and tube handrails and guardrail for approval.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Architect.
   1. AISC A 36-90, "Specifications of Structural Steel".
   2. ASTM A 53-90a, "Specification of Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless".
   3. ASTM A 500-90, "Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes".
   4. ASTM A 501-89, 'Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing".

PART 2 – PRODUCTS

2.01 MATERIALS

A. Ferrous Materials:
   1. Steel Plates, Shapes and Bars: ASTM A 36.
   2. Steel Pipe, Black Finish: ASTM A 53.
   3. Steel Tubing: ASTM A 500 or A 501.
   4. Rolled Steel Floor Plates: ASTM A 786.
   5. Reinforcing Bars: ASTM A 615, Grade 60.
   6. Concrete Inserts: Threaded or wedge type.
   7. Welding Rods and Bare Electrodes: AWS specifications.
B. Fasteners:
   1. Bolts and Nuts: Hexagon head type, ASTM A 307, Grade A.
   2. Lag Bolts: Square head, FS FF-B-561.

3. Machine Screws: Cadmium plated steel, FS FF-S-92.
4. Wood Screws: Flat head carbon steel, FS FF-S-111.
5. Plain Washers: Round carbon steel, FS FF-W-92.
6. Drilled-In Expansion Anchors: FS FF-S-325.
7. Toggle Bolts: Tumble-wing type, FS FF-B-588.
8. Lock Washers: Spring type carbon steel, FS FF-W-84.
9. Zinc-Coating: Fasteners in exterior assemblies or exterior walls.

C. Auxiliary Materials:
1. Nonshrink Metallic Grout: CE CRD-C621.
2. Nonshrink Non-Metallic Grout (where exposed): CE CRD-C621.
3. Interior Anchoring Cement: Hydraulic expansion cement.
4. Exterior/Interior Anchoring Cement: Erosion-resistant hydraulic expansion cement.
5. Finish: Primed and painted, refer to Section 09900 for additional requirements.

PART 3 – EXECUTION

3.01 GENERAL INSTALLATION

A. Take field measurements prior to preparation of shop drawings and fabrication. DO NOT delay job; allow for cutting and fitting if field measurement is not practical.
B. Form work true to line with sharp angles and edges. Weld continuously, grind flush and make smooth on exposed surfaces, unless otherwise indicated.
C. Field weld components as indicated. Perform field welding in accordance with AWS D1.1.
D. Install work plumb and level with hairline joints and ground flush welds.
E. Lintels: Provide sizes indicated with 8-inch bearing at each end.
F. Touch-up damaged coatings with shop primer and galvanize repair paint.
G. Paint items scheduled in accordance with Section 09 90 00.

3.02 MISCELLANEOUS METAL FABRICATIONS

A. Pipe Railings: Standard weight steel pipe, with the fittings and brackets as variously detailed, of sizes indicated, neatly welded and all welds dressed smooth. Round with 2-inch minimum radius all changes of direction. Plug open ends. Set pipe in concrete in non-corrosive pipe sleeves with non-shrink grout or anchor to supports with adequate metal expansion bolts.
1. Steel Handrails and Guardrails: Type and layout as shown on drawings.
a. Submit shop drawings for Owner approval prior to beginning construction.
b. Handrails shall be constructed of 1-1/2” diameter standard pipe material at 36” high measured from the highest adjacent walking surface elevation above ground and as projected above from top of noising at stairs.
c. Guardrails shall be constructed of 1-1/2” diameter standard pipe material at 42” high measured from the highest adjacent walking surface elevation above ground.
d. Post shall be constructed of 1-1/2” diameter standard pipe material.
e. Infill pickets shall be constructed of ½” diameter solid bar material at 4” on center at locations where handrails or guardrails exceed 15” above the lowest adjacent ground surface.
f. Painting shall comply with Section 09 90 00.

B. Ladder: Steel bars, rods and shapes of sizes and designs indicated, and securely anchored to floor and wall.
C. Steel Supports: provide structural steel lintels, channels, braces, angles, etc., as indicated and assemble as detailed. Secure all connections to provide rigid supports of all items required including supports not specifically specified in other sections.

END OF SECTION

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 – GENERAL

1.01 SUMMARY

A. Provide rough carpentry where indicated on plans:
   1. Framing with dimension lumber.
   2. Wood grounds, nailers, and blocking.
   3. Wood sheathing.

1.02 SUBMITTALS

A. None required unless submitting for approved equals.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
B. Lumber Standards and Grade Stamps: US Product Standard PS 20, American Softwood Lumber Standard and inspection agency grade stamps. Factory mark each piece of lumber or plywood with type, grade, mill, and grading agency identification or submit mill certificate that material has been inspected and graded in accordance with requirements if it cannot be marked on material surface.
C. Construction Panel Standards: PS 1, US Product Standard for Construction and Industrial Plywood; APA PRP-108.
D. Preservative Treatment: AWPA UC3B for lumber and AWPA UC3B for plywood; waterborne pressure treatment. Label each piece of pressure treated lumber and plywood with the quality control mark.
E. Fire-Retardant Treatment: AWPA UCFB for lumber and AWPA UCFB for plywood; non-corrosive type. Identify material with appropriate classification marking of Underwriters Laboratories, Inc., US Testing, Timber Products Inspection, or other testing and inspecting agency acceptable to authorities having jurisdiction.

PART 2 – PRODUCTS

2.01 MATERIALS

A. General:
   1. Fire-Retardant Treatment: Provide at building interior and exterior where required by code.
   2. Preservative Treatment: Provide for wood in contact with soil, concrete, masonry, roofing, flashing, damp-proofing, and waterproofing, or where installed less than 18-inches above grade.
   3. Moisture Content: 19% for lumber items not specified to receive wood preservative treatment and stamped "S-DRY", "K-D", or "MC19".
B. Dimension Lumber:
   1. Species: Spruce-Pine-Fir graded under National Grading Rules, PS 20-70, or approved equal.
   2. Light Framing: Stud, NO. 3 or standard grade.

3. Structural Framing: No. 2 grade meeting or exceeding the stress rating allowable for repetitive members classified as follows:
   a. 1-1/2" thick and 3-1/2" wide

1). Fb Bending:	1650 psi
2). Ft Tension:	825 psi
3). Fv Shear:	90 psi
4). Fc Perpendicular:	405 psi
5). Fc Parallel:	975 psi
6). E Modulus of Elasticity:	1,600,000 psi

   b. 1-1/2" to 4" thick and 5-1/2" to 12" wide

1). Fb Bending:	1400 psi
2). Ft Tension:	625 psi
3). Fv Shear:	90 psi
4). Fc Perpendicular:	405 psi
5). Fc Parallel:	1000 psi
6). E Modulus of Elasticity:	1,600,000 psi

C. Construction Panels:
   1. Plywood Sheathing: APA sheathing, Exposure 1, exterior grade, fire-retardant treated. Waferboard, composite board, and oriented stand board (but not structural particle-board) are accepted as equals providing specified span ratings are met for installed condition. In all cases, thickness shown is minimum regardless of span rating. Material used for same purpose shall be of same thickness.
D. Fasteners and Adhesives:
   1. Fasteners: Nails, metal connectors, bolts, nuts, screws, washers, staples, and other fasteners (except as specified or noted otherwise); hot-dip galvanized steel.
   2. Power Nails: Not permitted without prior approval of Owner.
   3. Adhesives: Meet requirements of American Plywood Association Specifications AFG-01, (latest revision). Use Phenol Resorcinol type for use on pressure treated wood products.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Wood Framing: Comply with recommendations of NFPA manual for House Framing, NFPA Recommended Nailing Schedule, and NFPA National Design Specifications for Wood Construction.
B. Plywood: Comply with recommendations of APA Design and Construction Guide-Residential and Commercial.
C. Provide nailers, blocking, and grounds where required. Set work plumb, level, and accurately cut.
D. Install materials and systems in accordance with manufacturer's instructions. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.
E. Comply with manufacturers requirements for cutting, handling, fastening, and working treated materials.
F. Securely attach carpentry work to substrate by anchoring and fastening as indicated and as required by recognized standards. Countersink nail heads on exposed carpentry work and fill holes. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood, pre-drill as required.
G. Restore damaged components. Protect work from damage.

END OF SECTION

SECTION 07 21 00

BUILDING INSULATION

PART 1 – GENERAL

1.01 SUMMARY

A. Provide building insulation and vapor retarders where indicated. (Note: For Owner furnished/Contractor installed products, refer to drawings and Sections 01 11 00 and 01 20 00).
   1. Under slabs-on-grade and foundation walls, board type.
   2. Exterior cavity walls, board type.
   3. Below low slope roofing systems, board type.
   4. Exterior insulation and finish system (EIFS), board type.
   5. Exterior walls, blanket type.
   6. Underside of roofs, over heated spaces and over soffits, blanket type.
   7. Pre-engineered metal building insulation, blanket type.
   8. Interior walls, blanket type.
   9. Cavity, foam-in-place type.
   10. Sheet or chemical vapor retarders.

1.02 SUBMITTALS

A. Comply with Section 01 33 00.

B. Product Data: Upon request, submit manufacturer's technical product data and installation instructions.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Architect.
   1. ASHRA Standard 90.1, Energy Conservation Code.
   2. ASTM C518, Standard Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
   3. ASTM C578, Specification for Preformed, Cellular Polystyrene Thermal Insulation.
   4. ASTM C665, Specification for Mineral-Fiber Thermal Insulation For Light Frame Construction and Manufactured Housing.
   5. ASTM C991, Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings.
   6. ASTM C1104, Standard Test Method for Determining the Water Vapor Sorption of Unfaced Mineral Fiber Insulation.
   7. ASTM C1029, Standard Specification for Spray-Applied Rigid Cellular Polyurethane Thermal Insulation.
   8. ASTM C1289, Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
   9. ASTM C1136, Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation.
   10. ASTM C1763, Standard Test Method for Water Absorption by Immersion of Thermal Insulation Materials.

11. ASTM D1621, Standard Test Method for Compressive Properties of Rigid Cellular Plastics.
12. ASTM D2126, Standard Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging.
13. ASTM D2842, Standard Test Method for Water Absorption of Rigid Cellular Plastics.
14. ASTM D4397, Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
15. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
16. ASTM E96, Standard Test Methods for Water Vapor Transmission of Materials.
17. NAIMA, North American Insulation Manufacturers Association - Standards of Products.
18. UL 1479, Fire Tests of Through-Penetration Firestops.

PART 2 – PRODUCTS

2.01 MATERIALS

A. General: Refer to drawings for minimum “R” value and/or thickness requirements and locations.

B. Flame Spread and Smoke Development Ratings:
   1. Tested in accordance with ASTM E84 standards.
   2. Exposed and Concealed Insulation: Flame spread rating of 0 to 25, smoke development rating of 0 to 450.

C. Environmental Requirements and Certifications:
   1. VOC Emission Testing Compliance: Greenguard or Greenguard Gold test method, Pass.
   2. Formaldehyde Content: Free of formaldehyde containing materials.

D. Accessories:
   1. Adhesives, mechanical anchors, hangers and clips for application per manufacturer’s recommendations.
   2. Crack sealers, tapes, primers, and accessories for application per manufacturer’s recommendations.

2.02 BOARD INSULATION

A. Manufacturers: Dow, GAF, Johns Manville, Owens-Corning, StarRfoam Manufacturing, or approved equal for application.

B. Locations and Types:
   1. Under Slab and Foundation Perimeters:
      a. Type: Extruded polystyrene closed cell rigid (ASTM C578), Type IV, “R” of 5.0 minimum per nominal inch (ASTM C518), compressive strength 25 psi minimum (ASTM D1621), water absorption 3.0 percent maximum by volume (ASTM D2842), square edges.
      b. Profiles: Vertical grooves or fluted for drainage where indicated.
      c. Adhesive: Type recommended by manufacturer for project conditions.
   2. Exterior Walls – Exterior Insulation Finish Systems (EIFS):
      a. Type: Expanded polystyrene closed cell rigid (ASTM C578), Type I, “R” of 4.6 minimum per nominal inch (ASTM C518), compressive strength 10 psi minimum (ASTM D1621), water absorption 4.0 percent maximum by volume (ASTM D2842), dimensional stability 2.0 percent maximum (ASTM D2126),

square edges.
   b. Profiles: Vertical grooves or fluted for drainage where indicated.
   c. Adhesive: Type recommended by manufacturer for project conditions.
3. Exterior Walls – Cavity and Continuous Insulation Assemblies:
   a. Type: Extruded polyisocyanurate closed cell rigid (ASTM C578), Type I, Class 2, “R” of 6.5 minimum per nominal inch (ASTM C518), compressive strength 25 psi minimum (ASTM D1621), water absorption less than 0.1 percent maximum by volume (ASTM C1763), square edges.
   b. Vapor Retarder: Integral foil face vapor retarder, where indicated.

2.03 BLANKET AND BATT INSULATION

A. Manufacturers: Certainteed, Johns Manville, Owens-Corning, or approved equal for application.

B. Locations and Types:
1. Exterior Stud Walls, Soffits and Roof Insulation: Glass fiber (ASTM C665), Type I, Class A, “R” minimum value as indicated on drawings (ASTM C518), with foil faced Type III, Class B, Category 1 (ASTM C665), water vapor membrane permeance 0.05 maximum (ASTM E96), water vapor sorption 5 percent or less by weight (ASTM C1104), fungi resistance pass rating (ASTM C1338).
2. Interior Walls: Glass fiber (ASTM C665), Type I, Class A, unfaced, water vapor sorption 5 percent of less by weight (ASTM C1140), fungi resistance pass rating (ASTM C1338).
3. Width: Provide in same width as stud framing spacing, unless otherwise indicated.

2.04 PRE-ENGINEERED METAL BUILDING BLANKET AND BATT INSULATION

A. Manufacturers: Silvercote (No substitutes).

B. Materials:
1. Roof: Formaldehyde fee fiberglass, ASTM C991, Type I, Class A. Where two layers of insulation are used to attain required “R” factor, layers shall be oriented perpendicular to each other. Vapor retarder separate component.
2. Exterior Walls: Formaldehyde fee fiberglass, ASTM C991, Type I, Class A. Vapor retarder separate component.
3. Size: Equal to purlin or girt spacing in manufacturer’s standard lengths. Provide largest width and lengths possible to reduce number of seams and joints.
4. Vapor Retarder Liner Fabric Material:
   a. ASTM C1135, woven reinforced high-density polyethylene yarns coated on both sides with a continuous polyethylene colored coating.
   b. Perm Rating: ASTM D4397, 6 mils minimum, 0.02 perms vapor transmission rating.
   c. Ultra Violet Radiation Inhibitor: Minimum rating 8.
   d. Fabric Color: White, unless otherwise indicated.
   e. Size and Seaming: Manufacturer’s standard sizes for project conditions with extrusion weld seams.
   f. Sealant: Solvent-based polyethylene fabric adhesive in type recommend by manufacturer.
   g. Tape: Double sided sealant tape, 3/4" wide, 1/32” thick in type recommended by manufacturer.
5. Steel Straps:
   a. 100 KSI minimum yield tempered, high tensile strength steel, galvanized.
   b. Size: Minimum 0.02 inch thick by 1 inch wide by continuous length.

c. Finish: Concealed surfaces primed and painted with 0.2 mils minimum baked polyester paint. Exposed surfaces primed and painted with 0.7 mils minimum baked polyester paint.
d. Color: Match vapor fabric material finish, unless otherwise indicated.

6. Fasteners:
   a. For Light Gage Steel: #12 x ¾ inch plated Tek 2 type screws with sealing washers, painted.
   b. For Heavy Gage Steel: #12 x 1 ½ inch plated Tek 4 type screws with sealing washers, painted.
   c. Finish: Match steel strap finish, unless otherwise indicated.
7. Wall Insulation Hangers:
   a. Preformed rigid hangers, 32 inches long galvanized steel strips with barbed arrows every 8 inches along length.

2.05 LOW SLOPE ROOFING SYSTEMS BOARD INSULATION

A. General:
   1. Refer to specification section of low slope roofing system specified for additional requirements for materials and installation.
   2. Manufacturers subject to compliance with general requirements of low slope roofing system specified.

B. Manufacturers: Carlisle, Firestone, GAF, Johns Manville, or approved equal for application.

C. Locations and Types:
   1. Primary Continuous and Tapered Boards:
      a. Reinforced polyisocyanurate closed cell rigid with coated facers (ASTM C1289), Type II, Class 1, Grade 2, LTTR “R” of 5.7 minimum per nominal inch (ASTM C518), compressive strength 20 psi minimum (ASTM D1621), water absorption 0.5 percent by volume maximum (ASTM C1763), square edges. Note: R-Value requirement as shown on drawings is exclusive of taper insulation.
      b. Profiles: Tapered for drainage, where indicated.
   2. Cover Boards:
      a. Reinforced high density closed cell polyisocyanurate rigid with coated facers (ASTM C1289), Type II, Class 4, Grade 2, LTTR “R” of 2.5 minimum per nominal 1/2" (ASTM C518), compressive strength 120 psi minimum (ASTM D1621), square edge profile in 1/2” thickness minimum, water absorption less than 3 percent (ASTM C1763), mold resistance pass rating (ASTM D3273).
   3. Vapor Retarder: Material type acceptable with manufacturer of low slope roofing system specified compatible with substrate conditions.

2.06 FOAM-IN-PLACE INSULATION

A. Manufacturers: Dow “Great Stuff”, Loctite “Titefoam”, Sika “Sika Boom”, or approved equal.

B. Locations and Types:
   a. Gap fillers, Window and Door Perimeters: Minimal expanding, single component polyurethane foam sealant (ASTM C1029), closed cell content 80 percent minimum (ASTM D2856), “U” value 0.25 minimum (ASTM C518), compressive strength 9.3 psi minimum (ASTM D1621), dimensional stability 14.31 percent maximum by volume (ASTM D2126), moisture resistant

PART 3 – EXECUTION

3.01 GENERAL INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions applicable to products and project conditions. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other sections.

B. Extend insulation in thickness indicated to envelope entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation.

C. Thermal Assembly Penetrations: Coordinate locations of water piping in exterior walls to ensure placement on warm side of insulation and insulation encapsulates piping.

D. Apply single layer of insulation to produce thickness indicated, unless multiple layers are otherwise indicated or required to make up total thickness.

E. Seal joints between closed-cell (non-breathing) insulation units by applying adhesive, mastic or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic or sealant as recommended by insulation manufacturer.

F. Protect installed insulation and vapor retarder. Repair construction damaged by contractor activities prior to concealment and installation of subsequent materials.

3.02 BOARD INSTALLATION

A. Below Grade Applications:
   1. Install boards vertically or horizontally as indicated on drawings.
   2. Cut and friction fit insulation boards tightly and neatly with ends butted together.
   3. For vertical applications provide mechanical fasteners and/or adhesive where recommended by manufacture to secure in place.
   4. For horizontal applications provide mechanical fasteners or measures recommended by manufacture to secure in place and protect during work of other trades.

B. Above Grade Applications:
   1. Cut and friction fit insulation over or between framing members as indicated.
   2. Alternatively install insulation with suitable fasteners, adhesives, or over impaling pins. Place pins 3 inches to 5 inches from edge of insulation.

3.03 BATT AND BLANKET INSTALLATION

A. General: Install glass-fiber blankets in cavities formed by framing members according to the following requirements:
   1. Use blanket widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
   2. Place blankets in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.

B. Cold-Form Metal Framing Construction: For wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping stapling flanges to flanges of metal studs.

C. Wood Framing Construction: Install mineral-fiber blankets in accordance with ASTM C1320 and as follows:

1. With faced blankets having stapling flanges, secure insulation by friction fit inset or face stapling flanges to sides of framing members.
2. With faced blankets having stapling flanges, lap blanket flange over flange of adjacent blanket to produce airtight installation after concealing finish material is in place.

3.04 PRE-ENGINEERED METAL BUILDING BATT AND BLANKET INSTALLATION

A. Roof Insulation (Liner Systems):
1. Install steel strap support system and vapor retarder fabric material to bottom of purlins towards conditioned space. Lap vapor retarder seams and apply joint tape per manufacturer's recommendations.
2. Install first layer of batt insulation in framing cavity parallel with roof purlins and supported by vapor retarder material.
3. Install second layer of batt insulation in framing cavity perpendicular and over top of roof purlins.
4. Install pre-engineered metal building sheet metal roofing system attachment clips to purlins with thermal block spacers (R-5 minimum) per manufacturer's recommendations to minimum compressing insulation.

B. Wall Insulation (Full Cavity Systems):
1. Install exterior materials covering pre-engineered metal building girt system.
2. Install wall insulation hanger types and spacing in girt cavity per manufacturer's recommendations.
3. Install single layer batt insulation in girt cavity to thickness required.
4. Install steel strap support system and vapor retarder fabric material to inside face of girts towards conditioned space. Lap vapor retarder seams and apply joint tape per manufacturer's recommendations.

C. Wall Insulation (Compressed Systems):
1. Prior to installation of exterior materials covering pre-engineered metal building girt system.
2. Install insulated compression tape continuous or thermal blocks on exterior face of girts per manufacturer's recommendations.
3. Install batt insulation with factory laminated vapor retarder fabric material to exterior face of girt system. Stretch batt material and provide attachments to hold in place as necessary for proper installation.
4. Install exterior materials by compressing insulation over girts per manufacturer's recommendations.

3.05 FOAM-IN-PLACE INSTALLATION

A. General:
1. Clean, prepare, and prime substrates per manufacturer's recommendations.
2. Install foam-in-place insulation in quantities and rates recommend by manufacturer for project conditions to provide thermal performance specified.
3. Remove excess material, clean, and prepare insulation surfaces as required for installation of other work.

B. Gap Fillers, Window and Door Perimeter Applications:
1. Install foam-in-place insulation in quantities and rates recommend by manufacturer to neatly fill cracks, joints, and voids from thermal intrusion.
2. Avoid filling joints intended for weeping water from assemblies.
3. Avoid expansive insulation applications that prohibits proper function of adjacent assemblies.

C. Roof, Ceiling, and Wall Applications:
   1. Provide supporting accessories, mesh, or membranes recommend by manufacturer where ventilation required in attics, chases, and cavities.
   2. Install foam-in-place insulation per manufacturer's recommendations for project conditions.

3.06 VAPOR RETARDER INSTALLATION

A. General:
   1. Install vapor retarder, where indicated, over entire area of substrate within thermal envelop assemblies as indicated on drawings and as required based upon project climate conditions.
   2. Set vapor-retarder-faced units with vapor retarder to warm side of construction, unless otherwise indicated. Do not obstruct ventilation spaces, except for firestopping
   3. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage system as indicated. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.
   4. Firmly attach vapor retarders to substrates with mechanical fasteners or adhesives as recommended by vapor retarder manufacturer.
   5. Seal joints caused by pipes, conduits, electrical boxes and similar items penetrating vapor retarders with vapor retarder tape to create an airtight seal between penetrating objects and vapor retarder
   6. Seal all seams and around perimeter and penetrations with tape or sealant to form a continuous vapor retarder free of holes, leave no gapes in insulation/vapor envelope.
   7. Repair punctures and tears immediately before concealment of work.

END OF SECTION

SECTION 07 60 00

FLASHING AND SHEET METAL

PART 1 – GENERAL

1.01 SUMMARY

A. Provide flashing and sheet metal (Work not included in Section 13 34 19) where indicated:
   1. Sheet metal flashing, coping, fascia, exposed trim, edges, counterflashing, cleats, caps, sills, drips, etc.
   2. Gutters and downspouts.
   3. Elastic flashing.
   4. Sheet metal accessories.

1.02 SUBMITTALS

A. None required unless submitting for approved equals.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Architect.
   1. SMACNA, (Sheet Metal and Air Conditioning Contractors National Association, Inc.) Architectural Sheet Metal Manual (Fifth edition).
   2. AA, (Aluminum Association), Aluminum Construction Manual- Aluminum Sheet Metal Work in Building Construction.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Sheet Metal:
   1. Pre-primed (field paint) Steel Sheets: 24 gage hot dipped galvanized steel (G90) commercial quality, primed one side with coating 1.0 mil total dry film thickness, and with wash coat on reverse side. Refer Section 09 90 00 for field paint, colors as indicated on drawings or as selected by Architect.
   2. Prefinished Steel Sheets: 24 gage hot dipped galvanized steel (G90) commercial quality, primed and finished one side with Kynar base fluoropolymer coating 1.0 mil total dry film thickness, and with wash coat on reverse side. Colors as selected by Architect. Coat pre-painted side with liquid applied factory installed strippable film for protection of finished surface. Vincent "ColorClad", Peterson "PacClad", or Copper Sales "Una-Clad".
   3. Sheet Aluminum: ASTM B 209, alloy 3003, mill finish, temper #14, 20 gage (.032-inch).
   4. Zinc-Coated Steel: ASTM A 526, G90 hot-dip galvanized, 20 gage (.032-inch).
   5. Lead: ASTM B 749, Type L51121, copper-bearing sheet lead, minimum 4 lb/sq. ft.
B. Flexible Sheet Membrane Flashing: Non-reinforced flexible black elastic rubber sheet, 20 mils thick, formulated from virgin polyvinyl chloride with plasticizers and other modifiers to remain flexible and waterproof in concealed applications.

C. Auxiliary Materials:
   1. Fasteners: Same metal as flashing/sheet metal or other non-corrosive metal as Solder recommended by sheet metal manufacturer. Match finish of exposed heads with materials being fastened.
   2. Solder: ASTM B 32, 50-50 tin/lead solder, with rosin flux.
   3. Roofing Cement: ASTM D 2822, asphaltic.
   4. Bituminous isolation coating. SSPC- Paint 12, solvent-type bituminous mastic, nominally free of sulfur, compound for 15-mil dry film thickness per coat.
   5. Mastic and elastomeric sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
   6. Epoxy seam sealer: 2-Part non-corrosive metal seam cementing compound, recommended by manufacturer for non-moving joints including riveted joints.
   7. Polyethylene underlayment: 6 mil carbonated polyethylene film.
   8. Reglets and metal accessories: Sheet metal clips, cleats, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size and gage required for performance.
   9. Adhesives: Type recommended by flashing sheet metal manufacturer for water/weather resistant seaming and adhesive application of flashing sheet.
   10. Paper Slip Sheets: 5-lb. rosin-sized building paper.

2.02 FABRICATION

A. Fabricate flashing, counter-flashing and other sheet metal work not exposed to view of aluminum. Fabricate flashing, gutters, downspouts, conductor heads, scuppers, copings, caps, edges, trim, and other exposed sheet metal work of pre-painted, or pre-primed and field painted, steel sheets. Use lead at drains, vents, where indicated, and where required to conform to contour of roofing components and accessories.
B. Fabricate for waterproof and weather resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates.
C. Form exposed sheet metal work without excessive oil-canning, buckling, and tool marks, true to line and levels as indicated, with exposed edges folded back to form hems.
D. Fabricate pre-painted steel with strippable film in place. If soldering is necessary, mechanically remove coating. Touch up with color matched paint.
E. Seams: Fabricate non-moving seams in sheet metal with flat-lock seams. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.
F. Expansion Provisions: Where lapped or bayonet-type expansion provisions cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1-inch deep, filled with mastic sealant (concealed within joints).
G. 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 elastomeric sealant.
H. Separate dissimilar metals from each other to prevent electrolytic action by painting each metal surface in area of contact with a heavy application of bitumastic coating, or by other permanent separation as recommended by manufacturers of dissimilar metals.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Follow recommendations of SMACNA and AA Manuals for specific application.

B. Install materials and systems in accordance with manufacturer's instructions. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
C. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams, which will be permanently watertight and weatherproof.
D. Underlayment: Where aluminum is to installed directly on cementitous or wood substrates, install a course of paper slip sheet and a course of polyethylene underlayment.
E. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
F. Secure edges of flashing to other work with angles and bars, and seal with sealant as indicated.
G. Retainers: Where indicated, provide saw cuts for metal counter-flashing system using metal flashing receiver as detailed and indicated.
H. Seal edges of metal flashings to substrates with roofing cement; install bed or bead of cement in manner, which will maintain a watertight seal.
I. Remove strippable film from pre-painted steelwork. Restore damaged components and finishes. Clean and protect work from damage.

END OF SECTION

SECTION 07 72 00

ROOF ACCESSORIES

PART 1 - GENERAL

1.01 SUMMARY

A. Provide roof accessories, complete:
   1. Roof curbs (Pre-engineered metal building): Provided under Section 13 34 18. (Owner furnished, Contractor installed)
   2. Roof hatches.
   3. Roof access straight ladders.
   4. Roof access ship ladders.

1.02 SUBMITTALS

A. Comply with Section 01 33 00.

B. Shop Drawings: Submit shop drawings prior to fabrication and manufacturer’s installation recommendations.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Comply with ANSI and OSHA standards for project conditions.

PART 2 - PRODUCTS

2.01 ROOF HATCHES

A. Manufacturers: Bilco Type S Roof Scuttle specified. Equivalent products as manufactured by Babcock-Davis, Kattsafe, Precision Ladders, or approved equal.

B. Assemblies shall be factory fabricated and unit field installed:
   1. Size: 36” x 30”.
   2. Cover: 11 gauge insulated aluminum.
   3. Framing: 11 gauge aluminum.
   4. Hinges: Heavy-duty stainless steel.
   5. Latch: Slam latch with interior and exterior turn handles.
   6. Curb Type: 12” in height with integral cap flashing, 1” fiberboard insulation, fully welded at corners, and 3 ½” mounting flange.
   7. Gasket: Extruded EPDM rubber gasket permanently adhered to cover.
   8. Lift assistance: Compression spring operators enclosed in telescopic tubes. Automatic hold-open arm with grip handle release.
   9. Finish: Mill finish
   10. Hardware: Engineered composite compression spring tubes. Steel compression springs with electrocoated acrylic finish. Type 316 Stainless steel hinges. All other hardware zinc plated/chromate sealed.

C. Accessories:
   1. Bilco Model LU-4 aluminum Ladder-up safety post, mill finish.

2.02 ROOF ACCESS STRAIGHT LADDERS

A. Manufacturers: Calico Ladders, Cotterman, Kattsafe, Global Industries, Precision Ladders, or approved equal.

B. Assemblies shall comply with OSHA 1910.27 standards and be factory fabricated and unit field installed.
   1. Exposure: Interior or exterior applications, refer drawings for project conditions.
   2. Metal Material: Comply with Section 05 50 00. Welded schedule 40 aluminum construction in mill finish.
   3. Rungs: ¾" corrugated round rungs, 16" wide min. clear, 12" on center.
   4. Stringers: 2" wide min. with smooth edges.
   5. Stand Off Brackets: 7" clear from center of rung to wall. Space per manufacturer's recommendations for attachment to substrate framing members.
   6. Landings and Extensions: Manufacturer's standard construction for project conditions.
   7. Finish:
      a. Interior Applications: Mill finish aluminum.
      b. Exterior Applications: Paint all exposed parts to comply with Section 09 90 00, refer to drawings for colors.
   8. Mounting Hardware: Per manufacturer's recommendations for project conditions. Provide corrosive resistant material for exterior applications. Where attaching to pre-engineered metal building roofing systems, provide S5 clips attached to top of seams.

2.03 ROOF ACCESS SHIP LADDERS

A. Manufacturers: Calico Ladders, Kattsafe, Precision Ladders, or approved equal.

B. Assemblies shall comply with OSHA standards and be factory fabricated and unit field installed.
   1. Exposure: Interior or exterior applications, refer drawings for project conditions.
   2. Metal Material: Comply with Section 05 50 00. Welded and/or bolted schedule 40 aluminum construction in mill finish.
   3. Angle: 60 degree to 75 degree. Refer to drawings for project conditions
   4. Treads: 6" wide min, tread plate or channel with slip resistant surface, 24"" wide min. clear, 10 ½" min. to 14" max. vertical spacing on center.
   5. Stringers: 5" wide min. channels or shapes.
   6. Handrail: 1 ¼" min. to 1 ½" max. dia. pipe or 1 ¼" min. to 1 ½" max. square tube. Material edges shall be smooth.
   7. Mounting Brackets: Space per manufacturer's recommendations for attachment to substrate framing members.
   8. Landings and Extensions: Manufacturer's standard construction for project conditions.
   9. Finish:
      a. Interior Applications: Mill finish aluminum.
      b. Exterior Applications: Paint all exposed parts to comply with Section 09 90 00, refer to drawings for colors.
   10. Mounting Hardware: Per manufacturer's recommendations for project conditions. Provide corrosive resistant material for exterior applications.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Comply with accessory manufacturers' instructions and recommendations. Coordinate installation with roofing system to ensure weather tight performance. Anchor securely to structure to withstand inward and outward loads.

B. Install construction per ANSI and OSHA standards. Coordinate installation and substrate framing requirements with other trades.

C. Isolate dissimilar metals to prevent galvanic corrosion.

D. Test and operate units; clean, lubricate and adjust moving parts. Leave unfinished metal fabrications ready for field painting where specified or indicated on drawings.

END OF SECTION

SECTION 07 84 00

FIRESTOPPING

PART 1 – GENERAL

1.01 SUMMARY

A. Provide firestopping at the following locations where indicated:
   1. Penetrations through fire-resistance-rated floor and roof construction.
   2. Penetrations through fire-resistance-rated walls and partitions.
   3. Penetrations through smoke barriers and construction enclosing compartmentalized areas.
   4. Sealant joints in fire-resistance-rated construction.
   5. Identification labeling of through fire-resistant penetration and construction joint systems.

1.02 SUBMITTALS

A. Comply with Section 01 33 00.

B. Product Data: Submit manufacturer's specifications and installation instructions for product specified.

C. Shop Drawings: Submit materials and installation details for penetrations and joint systems in each type of construction to be firestopped. Shop drawings are not required for types of penetrations or joint systems illustrated in the Product Data.

D. Test Reports: Submit documentation from recognized testing agency firestopping material has been tested and meets specified performance requirements.

E. Installer Certification: Submit certification that the installer has the specified experience.

1.03 QUALITY ASSURANCE

A. Comply the governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards: Comply with the provisions of the following specifications and performance standards, except as otherwise noted or specified, or as accepted or directed by the Architect.
   1. ASTM C656, Standard Specification for Structural Insulating Board, Calcium Silicate.
   2. ASTM C665, Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
   3. ASTM C920, Standard Specification for Elastomeric Joint Sealants.
   4. ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials.
   5. ASTM E814, Standard Test Methods for Fire Tests of Penetration Firestop Systems.
   6. ASTM E1399, Standard Test Method for Cyclic Movement and Measuring the Minimum and Maximum Joint Widths of Architectural Joint Systems.
   7. ASTM E1966, Test Method for Fire Resistive Joint Systems.

8. ASTM E2174, Standard Practice for On-Site Inspections of Installed Firestop Systems.
9. ASTM E2393, Standard Practice for On-Site Inspections of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers.
10. ASTM E3038, Standard Practice of Assessing and Qualifying Candidates as Inspectors of Firestop Systems and Fire-Resistive Joint Systems.
11. ANSI/UL 263, Fire Tests of Building Construction and Materials.
12. ANSI/UL 723, Surface Burning Characteristics of Building Materials.
13. ANSI/UL 1479, Fire Tests of Through-Penetration Fire-stops.
14. ANSI/UL 2079, Tests for Fire Resistance of Building Joint Systems.
15. Underwriters Laboratories (UL), UL Building Materials Directory; Through-Penetration Firestops Systems (XHEZ), Joint Systems (XHBN), Firestop Devices (XHJI), Forming Materials (XHKU), Wall Opening Protective Materials (CLIV), and Fill, Void or Cavity Materials (XHHW).

C. Installer Qualifications: Experienced in the installation of firestopping that is similar in material, design, and extent to the firestopping indicated for this Project.

PART 2 – PRODUCTS

2.01 PERFORMANCE CRITERIA

A. General: Use only firestopping products that have been tested for specific fire-resistance-rated construction conditions conforming to construction assembly type, penetrating item type or joint opening width and movement capabilities, annular space requirements, and fire-rating involved for each separate instance.
   1. Materials shall be asbestos free and tested per ASTM E119 or ANSI/UL 263 with characteristics defined per test ANSI/UL 723 and bear classification marking of UL or qualified independent testing agency.
   2. Provide products that are compatible with each other, with the substrates forming openings, and with the items, if any, penetrating the firestopping, under the conditions represented by this project, based on testing and field performance demonstrated by manufacturer. Use only products specifically listed for use in listed systems.
   3. Firestopping systems for construction gaps shall have capability appropriate to the potential movement of the gap, demonstrated by testing in accordance with ASTM E1300 for a minimum of 500 cycles at 10 cycles per minute. L-Rating of 1 cmf per linear foot maximum. Determine ratings in accordance with ANSI/UL 2079.
   4. Provide materials with minimum flame (F-Rating) and temperature (T-Rating) of one hour, but not less than fire resistance rating of assembly being penetrated as tested per ASTM E814 or joint protected as tested per ASTM E1966.
   5. Ratings: Refer to drawings for minimum rating values and location requirements.
   6. Refer to mechanical / electrical drawings and specifications for additional requirements.

B. Manufacturers: Subject to performance compliance with through-penetration firestop systems (XHEZ) and/or wall opening protective materials (CLIV) and/or joint systems (XHBN) and/or perimeter fire containment systems (XHDG) and/or continuity head-of-wall joint systems (XHBO) listed in UL Fire Resistance Directory, materials from the following manufacturers are acceptable:
   1. 3M.
   2. DOW.
   3. Fibrex.
   4. Hilti.
   5. IIG Minwool, LLC.
   6. Johns Manville International.

7. Owens Corning.
8. RectorSeal / Metacaulk.
9. Rockwool.
10. Rockwool Malaysis SDN BHD.
11. Rock Wool Manufacturing Company.
12. Specified Technologies, Inc.
13. Tremco.
14. USG.

2.02 MATERIALS

A. Intumescent Sealants: Single component intumescent latex formulations containing no water soluble intumescent ingredients capable of expanding a minimum 8 times.

B. Endothermic Sealants: Single component latex formulations that upon cure do not re-emulsify during exposure to moisture.

C. Elastomeric Sealants: ASTM C920. Single component latex formulations that upon cure do not re-emulsify during exposure to moisture and accommodate minimum ±25 percent movement.

D. Firestop Devices: Factory-assembled steel collars lined with intumescent material capable of expanding a minimum 30 times sized to fit specific outside diameter of penetrating item.

E. Fire Rated Cable Pathways: Gangable device modules capable of being retrofitted around existing cables and comprised of steel raceway with intumescent foam pads allowing 0 to 100 percent cable fill and requiring no additional action in the form of plugs, twisting closure, putty, pillow, or sealant to achieve fire and leakage ratings.

F. Wall Opening Protective Materials: Intumescent, non-curing pads or inserts for protection of electrical switch and receptacle boxes to reduce horizontal separation to less than 24”.

G. Firestop Putty: Intumescent, 100% solids, non-hardening, water resistant, butyl rubber based putties containing no solvents or silicone compounds.

H. Wrap Strips: Single component intumescent elastomeric strips faced on both sides with a plastic film and capable of expanding a minimum 30 times.

I. Firestop Pillows: Re-enterable, non-curing, mineral fiber core encapsulated with an intumescent coating on all six sides contained in a flame retardant poly bag.

J. Firesafing Insulation Batt: ASTM C665, Type I. Mineral wool fiber insulation or hydrous calcium silicate-inorganic, unfaced. Thickness required to achieve assembly performance.

K. Firesafing Insulation Board: ASTM C656, Type II, Grade 5. Inorganic, non-combustible, hight-temperature insulation board composed primarily of lime, silica, and reinforcing fibers. Thickness required to achieve assembly performance.

L. Mortar: Portland cement based dry-mix product formulated for mixing with water at Project site to form a non-shrinking, water-resistant, homogenous mortar.

M. Silicone Sealants: Moisture curing, single component, silicone elastomeric sealant for horizontal surfaces (pourable or nonsag) or vertical surface (nonsag).

N. All-Weather Coatings: Moisture curing, single component silicone copolymer elastomeric spray coatings for horizontal surfaces where greater water resistance is required or inclement weather is anticipated.

O. Silicone Foam: Multicomponent, silicone-based liquid elastomers, that when mixed, expand and cure in place to produce a flexible, non-shrinking foam.

P. Composite Sheet: Intumescent material sandwiched between a galvanized steel sheet and steel wire mesh protected with aluminum foil capable of sustaining a minimum 2,500 lbs when subjected to load testing.

Q. Cast-In-Place Firestop Device: Single component molded firestop device installed on forms prior to concrete placement with totally encapsulated, tamper-proof integral firestop system and smoke sealing gasket.

R. Fire-Rated HVAC Retaining Angles: Steel angle system with integral intumescent firestop gasket for use on steel HVAC ducts.

S. Firestop Plugs: Re-enterable, foam rubber plug impregnated with intumescent material capable of expanding minimum 10 times with expansion beginning at 350°F for use in blank openings and cable sleeves.

T. Fire-Rated T Rating Collar Device: Louvered steel collar system with synthetic aluminized polymer coolant wrap installed on metallic pipes where T Ratings are required by applicable building code requirements.

U. Fire-Rated Cable Grommet: Molded two-piece grommet made from plenum grade polymer with a foam inner core for sealing cable penetrations up to 0.53 in. diameter.

V. Fire-Rated Closet Flange Gasket: Molded, single-component, intumescent gasket for use beneath a closet flange in floor applications.

W. Protective Wrap: Endothermic Wrap incorporating foil scrim evaluated for protection of cable pathways, liquid fuel lines, as well as in through-penetration and membrane-penetration firestopping. Testing to incorporate protection of Electrical Metallic Tubing (EMT), Rigid Metallic Conduit (RMC), Cable Trays, single and/or multi containment liquid fuel lines. Wrap to have a maximum weight of no greater than 1.4 lbs/ft^2 and allow for the use of steel tie wire when installed around piping, conduits, and/or cable trays.

PART 3 – EXECUTION

1.01 PREPARATION

A. Examination of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.

B. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, scale, laitance, rust, release agents, water repellents, and any other substances that may inhibit optimum adhesion.

C. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.

D. Do not proceed until unsatisfactory conditions have been corrected.

1.02 FIRESTOPPING INSTALLATION

A. General Requirements: Install through-penetration firestop systems and fire-resistive joint systems in accordance with “Performance Criteria” Article and in accordance with the conditions of testing and classification as specified in the published design.

B. Manufacturer’s Instructions: Comply with manufacturer’s instructions for installation of firestopping products.
   1. Seal all openings or voids made by penetrations to ensure an air and water resistant seal.
   2. Consult with mechanical engineer, project manager, and damper manufacturer prior to installation of through-penetration firestop systems that might hamper the performance of fire dampers as it pertains to duct work.
   3. Protect materials from damage on surfaces subjected to traffic.
   4. Apply a suitable bond-breaker to prevent three-sided adhesion in applications where this condition might occur such as the intersection of a gypsum wallboard/steel stud wall to floor or roof assembly where the joint is backed by a steel ceiling runner or track.
   5. Where joint application is exposed to the elements, fire-resistive joint sealant must be approved by manufacturer for use in exterior applications and shall comply with ASTM C920, “Specification for Elastomeric Joint Sealants”.

C. Install identification labels for through penetration and construction joints systems. Provide pressure sensitive self-adhesive vinyl labels, preprinted with the following information:
   1. The words “Warning – Through Penetration Firestop System – Do Not Disturb. Notify Building Management of Any Damage.”
   2. Listing agency’s system number or designation.
   3. System manufacturer’s name, address, and phone number.
   4. Installer’s name, address, and phone number.
   5. General contractor’s name, address, and phone number.
   6. Date of installation.

1.03 FIELD QUALITY CONTROL

A. Keep areas of work accessible until inspection by authorities having jurisdiction.

B. Where deficiencies are found, repair or firestopping products so they comply with requirements.

1.04 ADJUSTING AND CLEANING

A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

B. Clean all surfaces adjacent to sealed openings to be free of excess firestopping materials and soiling as work progresses.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide joint sealers at interior and exterior vertical and horizontal joints. Work includes joints around frames of doors, windows, louvers, or other openings in exterior walls, flooring joints, joints at penetrations of walls, decks, roofs, and floors by piping and other services and equipment, joints between items of equipment and other construction, joints at plumbing fixtures, joints at dissimilar material transitions, expansion and contraction joints of masonry and concrete, and other joints indicated to be sealed.

1.02 SUBMITTALS

A. Comply with Section 01 33 00.

B. Product Data: Upon request, submit manufacturer’s specifications, recommendations and installation instructions for each type of sealant and miscellaneous materials. Include letter of certifications, or certified test laboratory reports indicating that each material complies with the requirements and is intended for the application indicated.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards: Comply with the provisions of the following specifications and performance standards, except as otherwise noted or specified, or as accepted or directed by the Architect.
1. ASTM C834, Standard Specification for Latex Sealants.
2. ASTM C920, Standard Specification for Elastomeric Joint Sealants.
3. ASTM C1193, Standard Guide for Use of Joint Sealants.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by testing and field experience.

B. Colors: As selected by Architect from Manufacturer’s standard colors or match color of material applied, unless otherwise indicated.

2.02 ELASTOMERIC JOINT SEALANTS

A. Provide manufacturer’s standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C920 requirements, including those for type, grade class, and uses.

B. One-Component Nonsag Urethane Sealant: Type M, Grade NS, Class 25, Master Builders “MasterSeal NP 1", Tremco “Dymonic”, Bostik “Chem-Calk 900", Pecora “Dynatrol 1", Mameco “Vulkem 116", or approved equal.

C. Two-or-More Component Nonsag Urethane Sealant: Type M, Grade NS, Class 25. Tremco “Dymeric”, Master Builders “MasterSeal NP 2", Bostik “Chem-Calk 500", Pecora “Dynatrol II”, or approved equal.

D. Two-Component Pourable Urethane Sealant: Type M, Grade P, Class 25. Tremco “THC 900", Master Builders “MasterSeal SL-2", Bostik “Chem-Calk 550", Pecora “NR-200 Urexpan”, or approved equal.

E. One-Component Pourable Urethane Sealant: Type S, Grade P, Class 25. Master Builders “MasterSeal SL-1", Bostik “Chem-Calk 550", Pecora “NR-201 Urexpan”, Maneco “Vulken 45", or approved equal.

F. One-Component Mildew-Resistant Silicone Sealant: Type S, Grade NS, Class 25. GE “SCS 1702", Dow Corning “786", Tremco “Proglaze White”, Pecora “863 #345", or approved equal.

2.03 ACRYLIC EMULSION SEALANT

A. One component, nonsag, acrylic, paintable, mildew-resistant, complying with ASTM C834. Tremco “Acrylic Latex Caulk”, Master Builders “MasterSeal NP 520”, Pecora “AC-20", Woodmont “Chem-Calk 600", or approved equal.

2.04 MISCELLANEOUS MATERIALS

A. Joint Cleaner: Type of joint cleaning compound recommended by sealant manufacturer for the joint surfaces to be cleaned.

B. Joint Primer/Sealer: Type recommended by the sealant manufacturer for the joint surfaces to be primed or sealed.

C. Bond Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer, to be applied to sealant-contact surfaces where bond to the substrate or joint filler must be avoided for proper performance of sealant. Provide self-adhesive tape wherever applicable.

D. Sealant Backer Rod: Compressible rod stock polyethylene foam, polyethylene jacketed polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable non-absorptive material as recommended for compatibility with sealant by the sealant manufacturer. Provide size and shape of rod which will control the joint depth for sealant placement, break bond of sealant at bottom of joint, form optimum shape of sealant bead on back side, and provide a highly compressible backer to minimize the possibility of sealant extrusion when joint is compressed.

E. Joint Fillers for Concrete Paving: Refer to Section 03 30 00 for requirements.

PART 3 - EXECUTION

3.01 JOINT TYPES AND USAGE

A. Acrylic Emulsion Sealant: All interior joints except joints with metal, aluminum, and wet work.

B. Elastomeric Sealants: Use single or multi-component urethane at all exterior joints and all interior joints with aluminum or metal. Use mildew resistant silicone sealant at sinks, plumbing fixtures and other wet work. Use minimum 35 Shore A hardness single or multi-component pourable polyurethane sealant for horizontal joints subject to pedestrian and vehicular traffic.

3.02 JOINT SURFACE PREPARATION

A. Clean joint surfaces immediately before installation of sealant. Remove dirt, insecure coatings, moisture, and other substances which would interfere with bond of sealant.

B. Preform preparation in accordance with manufacturer's recommendations for substrate conditions.

C. For elastomeric sealants, do not proceed with installation of sealant over joint surface which have been painted, lacquered, waterproofed or treated with water repellent or other treatment or coating. Remove coating or treatment from joint surfaces before installing sealant.

D. Etch cementitious joint surfaces to remove excess alkalinity. Etch with 5% solution of muriatic acid; neutralize with dilute ammonia solution, rinse thoroughly with water and allow to dry before sealant installation.

E. Rough joint surfaces on vitreous coated and similar non-porous materials, wherever sealant manufacturer's data indicates lower bond strength than for porous surfaces. Rub with fine abrasive cloth or wool to produce a dull sheen.

3.03 INSTALLATION

A. Install materials and systems in accordance with manufacturer's instructions and ASTM C1193. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.

B. Examine substrate; report unsatisfactory conditions in writing. Beginning work means acceptance of substrates.

C. Clean and prime joints, and install bond breakers, backer rods and sealant as recommended by manufacturers.

D. Do not apply sealant at temperatures below 40 deg F.

E. Apply sealant with hand-calking gun with nozzle of proper size to fit joints. Use sufficient pressure to insure full contact to both sides of joint to full depth of joint. Employ only proven installation techniques, which will ensure that sealants will be deposited in uniform, continuous ribbons without gaps or air pockets, with complete "wetting" of the joint bond surfaces equally on opposite sides. Except as otherwise indicated, fill sealant rabbet to a slightly concave surface, slightly below adjoining surfaces. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form a slight cove, so that joint will not trap moisture and dirt.

F. Install sealants to depths as shown or, if not shown, as recommended by the sealant manufacturer but within the following general limitations, measured at the center (thin) section of the bead.
   1. For sidewalks, pavements and similar joints sealed with elastomeric sealants and subject to traffic and other abrasion and indentation exposure, fill joints to a depth equal to 75% of joint width, but neither more than 5/8 inch deep nor less than 3/8 inch deep.
   2. For normal moving joints sealed with elastomeric sealants, but not subject to traffic, fill joints to a depth equal to 50% of joint width, but neither more than ½ inch deep nor less than 1/4 inch deep.
   3. For joints sealed with non-elastomeric sealants, fill joints to a depth in the range of 75% to 125% of joint width.

G. Do not allow sealants or compounds to overflow or spill onto adjoining surfaces. Use masking

tape or other precautionary devices to prevent staining of adjoining surfaces, by either primer/sealer or the sealant.

H. Tool joints immediately after application of sealant if required to achieve full bedding to substrate or to achieve smooth sealant surface.

I. Cure and protect sealants as directed by manufacturers. Replace or restore damaged sealants. Clean adjacent surfaces to remove spillage.

END OF SECTION

SECTION 08 11 19

STEEL DOORS AND FRAMES

PART 1 – GENERAL

1.01 SUMMARY

A. Provide steel doors and frames.
   1. Provide handling and installation of Owner furnished steel door and frame systems (Refer to drawings – Scope of Work Schedule).
   2. Exterior and interior steel doors.
   3. Hollow metal steel frames.

1.02 SUBMITTALS

A. None required unless submitting for approved equals.
B. (Florida Projects) Exterior door and frame assemblies not furnished by Owner, submit current Florida Product Approval documentation and where required Notice of Acceptance (NOA) documentation issued by Miami-Dade County. Contractor shall verify Manufacturer's tested assembly conditions and installation substrates are compatible with conditions indicated in the construction documents.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Architect.
   1. ANSI/SDI-100, Recommended Specifications for Standard Steel Doors and Frames.
   2. SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames".
   3. Fire-Rated Assemblies: ANSI/NFPA 80, and acceptable testing agency listing.
   4. Thermal-Rated Assemblies at Exterior: ASTM C518-10 Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
   5. High Wind and Impact Resistance Assemblies:
      a. ANSI A250.13: Testing and Rating of Severe Windstorm Resistant Components for Swinging Door Assemblies.
      b. ASTM E1886-05: Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
      c. ASTM E1996-12a: Standard Specifications for Performance of Exterior Windows, Glazed Curtain Walls, Doors and Storm Shutters Impacted by Wind Borne Debris in Hurricanes.
      d. ASTM E330-02 (2010): Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
      e. Florida Building Code (FBC), TAS 201-94: Large Missile Impact Test.
      f. Florida Building Code (FBC), TAS 202-94: Uniform Static Air Pressure Test.
      g. Florida Building Code (FBC), TAS 203-94: Cyclic Pressure Loading Test.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers: Black Mountain Door, Ceco, Curries, Mesker, Steelcraft, Republic,Tell Manufacturing, Daybar, or approved equal.
B. Provide metal doors and frames from a single manufacturer.

2.02 GENERAL

A. Fabrication: Fabricate steel doors and frames rigid, neat in appearance and free from defects, warp, or buckle. Provide clean cut, straight, and true molded members, well formed and aligned miters, dressed and ground smooth, and where applicable, concealed fasteners. Reinforce at corners as required to prevent sagging. Accurately form metal to required sizes and profiles including astragals. Fit, assemble, and weld units at factory or shop.
B. Fire Rated Units: Provide fire-rated units complying with ANSI/NFPA 80 “Standard for Fire Doors and Window”, and units tested, listed, and labeled in accordance with NFPA 252 “Standard Methods of Fire Test of Door Assemblies” by a nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction. Labels must be affixed to the frame. DO NOT paint labels.
C. High Wind and Impact Resistant Units: Refer to drawings for governing code and design requirements. Components and assemblies shall meet or exceed minimum impact resistance and design pressures indicated, but not less than -50/+50 psf, when tested in accordance with ASTM E330-02 and FBC, TAS 202-94 and TAS 203-94. Unit shall be tested, listed, and labeled by an independent testing agency acceptable to authorities having jurisdiction. Labels shall be affixed to components. DO NOT paint labels.
D. Anchors, Fasteners, Accessories: Manufacturers standard, hot-dipped galvanized at exterior. Provide not less than 3 anchors per jamb.

2.03 STEEL DOORS

A. Exterior Doors: ANSI/SDI-100, Grade II, heavy-duty, minimum 18 gage (.0358 inch) cold-rolled sheet steel, 1-3/4 inches thick with face sheets zinc coating G60, mill phosphatized. Provide thermally improved doors with maximum U-value of 0.24 BTU/hr./sq. ft/degree F (ASTM C518-10), “R” factor 14.97, STC rating 26 (ASTM E 90 and ASTM E 413).
B. Interior Doors: ASNI/SDI-100, Grade II, heavy-duty, minimum 18 gage (.0358 inch) cold-rolled steel, 1-3/4 inches thick. Provide acoustically improved doors with minimum STC of 33 (ASTM E90-09 and ASTM E413-10) where indicated.
C. Cores: Continuously reinforced with a full core of resin-impregnated kraft honeycomb with 1-inch nested, hexagonal-shaped cells. Bond core to inside of both face sheets or polystyrene insulated panel core.
D. Channel Fillers: Flush steel channel fillers for top channel of exterior doors.
E. Vision Panels: Provide glazing stops/moldings for glazed panels. Glass and glazing is specified in Section 08 80 00.
F. Astragals: Provide T and U astragal for pairs of exterior and fire-rated doors and as indicated on door schedule.

2.04 STEEL FRAMES

A. Exterior and Interior Frames: Welded type, 16 gage (.0598 inch) sheet steel oil or cold rolled. At exterior openings provide frames with G60 zinc coating, mill phosphatized. Joints to be mitered or coped corners.

B. Accessories: Door silencers and plaster guards, minimum 3 on strike jamb.
C. Glazing Frames: Provide manufacturers standard steel channel or tubular stops, predrilled for screws and factory finished as specified for doors and frames. Glass and glazing is specified in Section 08 80 00.

2.05 HARDWARE

A. Preparation: Prepare hollow metal units to receive mortised and concealed finished hardware, including cutouts, reinforcing, drilling, and tapping in accordance with door hardware schedule and templates provided by the hardware supplier. Reinforce hollow metal units to receive surface-applied hardware. Drilling and tapping for surface-applied hardware will be done on the job site.
B. Location of Hardware: Locate finish hardware as indicated in door hardware supplier templates and/or in compliance with Door and Hardware Institute publication “Recommended Location for Builder’s Hardware”.

2.06 FINISH

A. Finish: Factory primed and field finished. Provide manufacturers standard rust inhibitive primer compatible with finish paint specified in Section 09 90 00. Provide asphalt emulsion sound deadening coating on concealed frame interiors. DO NOT prime or paint testing agency labels.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install doors and frames in compliance with SDI-100. Set frames accurately in position, plumb and aligned, and securely anchor to adjacent construction.
B. Install hardware, adjust as required to provide smooth and proper operation with secure latching or locking.
C. Erect fire doors and frames in compliance with ANSI/NFPA 80 and requirements of authorities having jurisdiction.
D. Clearances: Provide clearances of not more than 1/8-inch at jambs and heads, and not more than ¾-inch from floor or 3/16-inch from thresholds. Exterior doors provide 3/8-inch undercut for accessibility threshold standards.
E. Touch-up damaged coatings and leave ready to receive finish painting.

END OF SECTION

SECTION 08 14 16

FLUSH WOOD DOORS

PART 1 – GENERAL

1.01 SUMMARY

A. Provide flush wood doors where indicated:
   1. Interior solid core flush doors.

1.02 SUBMITTALS

A. None required unless submitting for approved equals.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Owner.
   1. Quality Standards: NWWDA I.S. 1A, and AWI Architectural Quality Standards.
   2. Quality Standards: NWWDA I.S. 1A, and WIC Manual of Millwork.
   3. Fire Rated Wood Doors: Meeting NFPA 252 requirements.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Manufacturers: Ampco, Mohawk, Summit, Graham, or approved equal
B. Interior Solid Core Doors:
   1. Grade: Custom grade.
   2. Construction: PC-7 (7-ply, particleboard core) or SLC-7 (7-ply, glued-block core), 1-3/4 inches thick.
   3. Wood Finish: Rotary-sliced natural birch faces.
   4. Rating: Provide rating as scheduled on drawings. DO NOT finish over required label.
C. Auxiliary Materials (Where scheduled on drawing):
   1. Glazing Frames: Provide manufacturers standard steel channel or tubular stops, 18 gage cold rolled steel, factory primed, and approved for use in door of fire-rating indicated, pre-drilled for screws and factory finished as specified for doors and frames. Glass and glazing is specified is Section 08 80 00.

2.02 HARDWARE

A. Preparation: Prepare wood door units to receive mortised and concealed finished hardware, including cutouts, reinforcing, drilling and tapping in accordance with door hardware schedule and templates provided by the hardware supplier. Reinforce wood door units to receive surface-applied hardware. Drilling and tapping for surface-applied hardware will be done on the job site.

B. Location of Hardware: Locate finish hardware as indicated in door hardware supplier templates and/or in compliance with Door and Hardware Institute publication “Recommended Location for Builders Hardware”.

2.03 FINISH

A. Comply with requirements of Section 09 90 00. Do not prime or finish testing agency labels. Refer to interior finish schedule for colors.
B. Factory pre-finished.
C. Color: Equal to Graham #300 medium brown. Any variance requires submittal of sample for prior approved by Owner.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install door and frames in compliance with SDI-100 and NWMA I.S 1A. Prefit doors to frames. Premachine doors for hardware listed on door hardware schedules. Factory bevel doors.
B. Set door and frame accurately in position, plumb and aligned, and securely anchor to adjacent construction.
C. Install hardware, adjust as required to provide smooth and proper operation with secure latching or locking.
D. Install doors with not more than 1/8-inch clearance at top and sides, 1-inch at bottom unless otherwise indicated.
E. Erect fire doors and frames in compliance with NFPA 80 and requirements of authorities having jurisdiction.
F. Touch-up damaged coatings and leave ready to receive final finish.
G. Adjust, clean, and protect.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

A. Provide door hardware, complete.
   1. Provide handling and installation of Owner furnished materials. Refer to drawings - Scope of Work Schedule.
   2. Where required, provide key storage security boxes (Knox Box) for fire department emergency access.

1.02 SUBMITTALS

A. Comply with Section 01 33 00.

B. Product Data: Upon request, submit manufacturer's technical data cross referenced with shop drawings showing type, style, function, size, finish, manufacturer, model number, and product cut sheet.

C. Shop Drawings: Upon request, submit schedule of hardware cross-referenced with shop drawings showing manufacturer, model number, quantity of each different hardware item. Include fastenings and other pertinent information, mounting locations for hardware, and door and frame sizes and materials.

D. Key and Core Schedule: Submit keying schedule with security levels and master keying. Include list of materials required for Owner to submit order for Contractor furnished and installed locking hardware cores and keys. Indicate model numbers and quantities compatible with hardware to be provided.

E. Operating and Maintenance Instructions: Upon request, submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance. Provide special wrenches and tools applicable to each different or special component.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Architect.
   1. ANSI/BHMA A156 Series, Standards for Hardware Materials and Applications.
   2. ANSI/SDI 250.8, Recommended Specifications for Standard Steel Doors and Frames (SDI-100).
   3. ASTM E330, Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
   4. ASTM E1886, Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
   5. NFPA 80, Standard for Fire Doors and Other Opening Protectives.
   6. UL305, Standard for Safety Panic Hardware.

7. High Wind and Impact Resistance Assemblies (Refer to drawings for governing code and design requirements):
    a. ANSI A250.13: Testing and Rating of Severe Windstorm Resistant Components for Swinging Door Assemblies.
    b. ASTM E1886: Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
    c. ASTM E1996: Standard Specifications for Performance of Exterior Windows, Glazed Curtain Walls, Doors and Storm Shutters Impacted by Wind Borne Debris in Hurricanes.
    d. ASTM E330: Test Method for Structural Performance of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
    e. Florida Building Code (FBC), TAS 201: Large Missile Impact Test.
    f. Florida Building Code (FBC), TAS 202: Uniform Static Air Pressure Test.
    g. Florida Building Code (FBC), TAS 203: Cyclic Pressure Loading Test.

C. Accessibility Standards: (Refer drawings for governing building codes and accessibility standards.). Comply with the provision of the following specifications and standards.
    1. 2010 American with Disabilities Act (ADA) Standards for Accessible Design.
    2. ICC ANSI A117.1, Accessibility and Usable Buildings and Facilities, edition as referenced in applicable building code.
    3. Governing State accessibility code.

D. Manufacturer's Quality Assurance: Certification that door hardware components and assembly sets have been tested by independent testing agency in accordance with specified ASTM and NFPA standards for design conditions and labeled indicating compliance.

E. Supplier Architectural Hardware Consultant Qualification: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this project and who is currently certified by Door Security & Safety Professionals (DHI) as an Architectural Hardware Consultant (AHC).

F. Warranty: Provide manufacturer's standard Three (3) Year warranty for material, finish, and proper operation defects from date of Substantial Completion.

PART 2 - PRODUCTS

2.01 QUALITY AND PERFORMANCE REQUIREMENTS

A. Quality: All door hardware to be Grade 1 (Heavy Duty Commercial), unless otherwise indicated.

B. Accessibility: All hinged door hardware to comply with governing Accessibility Standards specified.
    1. Operational force to retract latches or disengage devices that hold doors in closed position shall be as follows:
        a. Hardware operation by a forward, pushing, or pulling motion: 15 pounds maximum.
        b. Hardware operation by a rotational motion: 28 inch-pounds maximum.
    2. Height of operable parts shall be 34 inches minimum and 48 inches maximum above floor.
    3. Closing speeds shall be adjusted so that from an open position of 90 degrees, the time required to move the door to an open position of 12 degrees shall be 5 seconds minimum.
    4. Opening forced for fire doors, doors required to be equipped with panic hardware, break away features, or other factors requiring higher opening force for safety reasons shall have the minimum opening force allowable by authorities having jurisdiction. For other doors the force for pushing or pulling shall be as follows:
        a. Interior hinged doors: 5.0 pounds maximum.

a. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2" high.

G. Fire Rated Door Assemblies: Where fire rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C. Hardware devices shall conform to UL305 and accessibility performance requirements specified.

H. Smoke and Draft Control Door Assemblies: Where smoke and draft control door assemblies are required, provide door hardware that complies with requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105. Air Leakage Rate maximum of 0.3 cfm/sq. ft. at the tested pressure differential of 0.3 inch wg of water.

I. Means of Egress Doors: Latches shall not require more than 15 lbf to release the latch. Locks shall not require use of a key, tool, or special knowledge for operation.

J. High Wind and Impact Resistant Door Assemblies: Components and assemblies shall meet or exceed minimum impact resistance and design pressures indicated, but not less than -50/+50 psf, when tested in accordance with ASTM E330 and FBC, TAS 202 and TAS 203. Unit shall be tested, listed, and labeled by an independent testing agency acceptable to authorities having jurisdiction.

2.02 HARDWARE

A. Schedule: Refer to drawing door hardware schedule. Furnish in amounts and finishes indicated or as required for complete and operable facility.

B. Types and Manufacturers: Products of the following manufacturer's will be considered acceptable provided products are of equivalent weight, function, materials, design, and comply with ANSI/BHMA standards and quality and performance requirements specified. Note: Not all hardware types indicated herein may be indicated in drawing hardware schedule and required for project conditions.

C. Butts and Hinges (BHMA A156.1):
1. Ball Bearing Hinges:
   a. Manufacturers: Hager, Ives, McKinney, Soss, Stanley.
   b. Exterior Exposure BHMA (A156.1): A5111. Non-rising pins, size 4 1/2 inch x 4 1/2 inch.
   c. Interior Exposure BHMA (A156.1): A2111, size 4 1/2 inch x 4 1/2 inch.
   d. Exterior Exposure Finish BHMA (A156.18): 630.
   e. Interior Exposure Finish BHMA (A156.18): 626.

D. Locks and Latches (BHMA A156.2):
1. Passage Latches with Lever Handles:
   a. Manufacturers: Corbin Russwin, Dormakaba, Hagar, Sargent, Schlage, Yale.
   b. BHMA (A156.2): Function Type F75, Series 4000, Grade 2. Lever trim style equal to Yale "Augusta AU" series (Basis of Design). Solid one piece cast with rectangular cross section in "J" shape with straight angled safety return end and overall face dimension of 5 inches minimum, 3 1/2 inch minimum diameter escutcheon trim.
   c. Finish BHMA (A156.18): 626.

2. Privacy Locks with Lever Handles:
   a. Manufacturers: Corbin Russwin, Dormakaba, Hagar, Sargent, Schlage, Yale.
   b. BHMA (A156.2): Function Type F76A, Series 4000, Grade 2. Lever trim style equal to

Yale “Augusta AU” series (Basis of Design). Solid one piece cast with rectangular cross section in “J” shape with straight angled safety return end and overall face dimension of 5 inches minimum, 3 1/2 inch minimum diameter escutcheon trim..
c. Finish BHMA (A156.18): 626.

3. Office Locks with Lever Handles:
   a. Manufacturers: Corbin Russwin, Dormakaba, Hagar, Sargent, Schlage, Yale.
   b. BHMA (A156.2): Function Type F82A, Series 4000, Grade 2. Lever trim style equal to Yale “Augusta AU” series (Basis of Design). Solid one piece cast with rectangular cross section in “J” shape with straight angled safety return end and overall face dimension of 5 inches minimum, 3 1/2 inch minimum diameter escutcheon trim.
   c. Finish BHMA (A156.18): 626.

4. Storeroom Locks with Lever Handles:
   a. Manufacturers: Corbin Russwin, Dormakaba, Hagar, Sargent, Schlage, Yale.
   b. BHMA (A156.2): Function Type F86, Series 4000, Grade 2. Lever trim style equal to Yale “Augusta AU” series (Basis of Design). Solid one piece cast with rectangular cross section in “J” shape with straight angled safety return end and overall face dimension of 5 inches minimum, 3 1/2 inch minimum diameter escutcheon trim.
   c. Finish BHMA (A156.18): 626.

5. Latch Guards:
   a. Manufacturers: Cal-Royal, Don-Jo, Hager, Ives, Rockwood, Latch-Gard.
   b. BHMA (A156.2): Series 4000. 12 gauge minimum lock guard with security pin, through carriage bolted, eliminate opening between door and frame latch point.
   c. Finish BHMA (A156.18): 630 or 663.

E. Exit Devices (BHMA A156.3):
1. Entry Lock Exit Panic with Single Point Rim Locking:
   a. Manufacturers: Corbin Russwin, Dormakaba, Sargent, Von Duprin, Yale.
   b. BHMA (A156.3): Type 1, Function Type 03. Interior wide stile push pad actuating bar, through sex bolt mounted. Roller strike.
   c. Exterior Architectural Door Trim BHMA (A156.6): J407. 1/8 inch thick x 3 inch wide x 16 inch high flat plate with rectangular pull and cylinder hole,
   d. Fire Rated Assemblies: Comply with UL305.
   e. Exterior Exposed Finish BHMA (A156.18): 630.
   f. Interior Exposed Finish BHMA (A156.18): 689.

2. Exit Only Panic with Single Point Rim Locking:
   a. Manufacturers: Corbin Russwin, Design Hardware, Dormakaba, Sargent, Von Duprin, Yale.
   b. BHMA (A156.3): Type 1, Function Type 01. Interior narrow stile push pad actuating bar, through bolt mounted.
   c. Fire Rated Assemblies: Comply with UL305.
   d. Finish BHMA (A156.18): 689.

3. Fire Exit Passage Panic with Single Point Rim Latching:
   a. Manufacturers: Corbin Russwin, Design Hardware, Dormakaba, Sargent, Von Duprin, Yale.
   b. BHMA (A156.3): Type 1, Function Type 23. Interior wide stile push pad actuating bar, through bolt mounted. Lever and escutcheon trim style equal to Dormakaba ”YR” series (Basis of Design). Solid one piece cast with rectangular cross section in “J” shape with straight angled safety return end and overall face dimension of 5 inches minimum.
   c. Fire Rated Assemblies: Comply with UL305.

d. Finish BHMA (A156.18): 626.

4. Fire Exit Passage Panic with Surface Vertical Rod Two Point Latching:
   a. Manufacturers: Corbin Russwin, Design Hardware, Dormakaba, Sargent, Von Duprin, Yale.
   b. BHMA (A156.3): Type 2, Function Type 23. Interior wide stile push pad actuating bar, through bolt mounted. Lever and escutcheon trim style equal to Dormakaba ”YR” series (Basis of Design). Solid one piece cast with rectangular cross section in “J” shape with straight angled safety return end and overall face dimension of 5 inches minimum. Surface vertical rods with dust proof bottom strikes.
   c. Fire Rated Assemblies: Comply with UL305.
   d. Finish BHMA (A156.18): 626.

F. Closers (BHMA A156.4):
1. Pivot Hinges:
   a. Manufacturers: Hagar, Ives, Rixson.
   b. BHMA (A156.4): C07172. 3/4 offset.
   c. Finish BHMA (A156.18): 626

2. Surface Closer with Cover, Regular Arm, Pull Side Mounted:
   a. Applications: Exterior aluminum entrance doors.
   b. Manufacturers: Cal Royal, Corbin Russwin, Dormakaba, Hager, LCN, Norton.
   c. BHMA (156.4): C02011-PT4C. Provide accessory plates and spacers as required. Through bolt attached.
   d. Finish BHMA (A156.18): 689.

3. Surface Closer with Cover, Hold Open Cush-N-Stop Parallel Arm, Pull or Push Side Mounted:
   a. Applications: Exterior delivery aluminum entrance and steel doors in non-wind borne debris regions.
   b. Manufacturers: Cal Royal, Corbin Russwin, Dormakaba, Hager, LCN, Norton.
   c. BHMA (156.4): C02061-PT4C. Provide accessory plates and spacers as required.
   d. Finish BHMA (A156.18): 689.

4. Surface Closer with Cover, Hold Open Extra Heavy Duty Parallel Arm, Pull or Push Side Mounted:
   a. Applications: Exterior delivery aluminum entrance and steel doors in wind born debris regions.
   b. Manufacturers: Cal Royal, Corbin Russwin, Dormakaba, Hager, LCN, Norton.
   c. BHMA (A156.4): C02061-PT4C. Provide accessory plates and spacers as required.
   d. Finish BHMA (A156.18): 689.

5. Surface Closer with Cover, Spring Cush-N-Stop Parallel Arm, Pull or Push Side Mounted:
   a. Applications: Interior high frequency use steel and wood doors, interior high frequency use fire rated steel and wood doors.
   b. Manufacturers: Cal Royal, Corbin Russwin, Dormakaba, Hager, LCN, Norton.
   c. BHMA (156.4): C02061-PT4C.
   d. Finish BHMA (A156.18): 689.

6. Surface Closer with Cover, Regular Arm, Pull Side Mounted:
   a. Applications: Exterior exit only and exterior access to fire sprinkler or electrical room steel doors. Interior limited use fire rated steel and wood doors.
   b. Manufacturers: Cal Royal, Corbin Russwin, Dormakaba, Hager, LCN, Norton.
   c. BHMA (156.4): C02011-PT4C. Through bolt mounted.
   d. Finish BHMA (A156.18): 689.

G. Cylinders (BHMA A156.5):
   1. Removable (Interchangeable) Cores:
      a. Manufacturer: Schlage series (No Substitutes) to match Owner's facility keying system, Contractor furnished and installed.
      b. BHMA (A156.5): "E" Keyway, function compatible with devices specified.
      c. Finish BHMA (A156.18): 626.

   2. Cylinders for Removable (Interchangeable) Cores:
      a. Manufacturers (Compatible with cores): Schlage (No Substitutes).
      b. BHMA (A156.5): "E" Keyway, function compatible with devices specified.
      c. Finish BHMA (156.18): 626.

H. Architectural Door Trim (BHMA A156.6):
   1. Architectural Door Trim - Push / Pull (Aluminum Entrances):
      a. Manufacturers: C.R. Laurence, Don-Jo, Kawneer, Ives, Rockwood.
      b. Pull BHMA (A156.6): J402. 1 inch diameter D-shape bent bar, vertical pull 12 inch center to center, 3 3/4 inch projection.
      c. Push BHMA (A156.6): J504. 1 inch diameter straight bent bar, horizontal push door length with 2 1/4 inch projection.
      d. Finish BHMA (A156.18): 630.

   2. Architectural Door Trim - Pull with Push Plate (Multi-User Restrooms):
      a. Manufacturers C.R. Laurence, Don-Jo, Hager, Ives, Rockwood.
      b. BHMA (156.6): J405. 3/4 inch diameter straight bent bar. Vertical pull 8 inch center to center with barrier free 2 1/2 inch clearance projection. Push plate 1/8 inch thick, 4 inch wide, 16 inch high, with beveled safety edges. Exposed recessed mounted fasteners compatible with substrate.
      c. Finish BHMA (A156.18): 630.

   3. Door Plates:
      a. Manufacturers: Hager, National Guard Products, Pemko, Rockwood, Zero International.
      b. BHMA (A156.6): J102. Fabricated from 0.050 inch thick stainless steel with beveled safety edges all sides, attached with manufacturer's standard machine or self-tapping screw fasteners.
      c. Sizes: Refer drawings.
      d. Finish BHMA (A156.6): 630.

I. Mortis Locks (BHMA A156.13):
   1. Mortis Entry Lock (Removable Core) with Lever Handles and Escutcheon Trim:
      a. Manufacturers: Corbin Russwin, Sargent, Schlage, Yale.
      b. BHMA (A156.13): Function Type F04, Series 1000. Lever trim style equal to Dormakaba "LR" series with escutcheon trim style "M" series (Basis of Design). Solid one piece cast with rectangular cross section in "J" shape with straight angled safety return end and overall face dimension of 5 inches minimum
      c. Exterior Exposure Finish BHMA (A156.18): 630.

J. Auxiliary Hardware (BHMA A156.16):
   1. Wall Stops:
      a. Manufacturers: Hager, National Guard Products, Rockwood, Yale, Zero International.
      b. BHMA (A156.16): L02251. Concave bumper with concealed mounted steel fastener compatible with substrate.
      c. Finish BHMA (A156.18): 630 with gray rubber bumper.

2. Floor Stops:
   a. Manufacturers: Hager, National Guard Products, Rockwood, Yale, Zero International.
   b. BHMA (A156.16): L02141. Low dome rubber bumper with exposed recessed mounted steel fastener compatible with substrate.
   c. Finish BHMA (A156.18): 630 with gray rubber bumper.

3. Manual Surface Bolts:
   a. Manufacturers: Hager, National Guard Products, Rockwood, Yale, Zero International.
   b. BHMA (A156.16): L04161. Manual operation bolt, locks in both up and down position, universal top and bottom strikes, exposed recessed mounted steel fasteners compatible with substrate.
   c. Finish BHMA (A156.18): 626.

4. Manual Surface Bolts (High Wind and Impact Resistant):
   a. Manufacturers: Corbin Russwin, Sargent, Yale.
   b. BHMA (A156.16): L04161. Manual operation bolt, locks in both up and down position, universal top and bottom strikes, exposed recessed mounted steel fasteners compatible with substrate.
   c. Finish BHMA (A156.18): 626.
   d. High Wind and Impact Resistance (Florida Building Code Compliance): Comply with quality and performance requirements specified.

5. Door Viewers:
   a. Manufacturers: Hager, Ives, Rockwood, Schlage.
   b. BHMA (A156.16): L23222. One-way wide angle (190 degree) viewer. Install at height in compliance with accessibility requirements.
   c. Finish BHMA (A156.18): 626.

6. Door Silencers (Steel Frames):
   a. Manufacturers: Cal-Royal, Hager, Ives, Rockwood, Trimco.
   b. BHMA (A156.16): L03011. Rubber, compression fit.
   c. Finish: Grey or Black.

K. Thresholds (BHMA A156.21):
1. Thresholds (Aluminum Entrances):
   a. Manufacturers: Kawneer, EFCO, Oldcastle Building Envelope, National Guard Products, Pemko, Rockwood, Zero International.
   b. BHMA (A156.21): J35131. Height and profile compliant with governing accessibility standards. Fabricated full length of door opening. Coped ends as required to accommodate offset pivots. Set in sealant bed and attached with exposed recessed mounted corrosion resistant metal fasteners compatible with substrate.
   c. Finish BHMA (A156.18): 689.

2. Thresholds (Steel Doors and Frames – Design Pressures Less Than -50/+50 PSF):
   a. Manufacturers: Global, National Guard Products, Pemko, Rockwood, Zero International.
   b. BHMA (A156.21): J32130. Height and profile compliant with governing accessibility standards. Fabricated full length of door opening. Set in sealant bed and attached with exposed recessed mounted corrosion resistant metal fasteners compatible with substrate.
   c. Finish BHMA (A156.18): 689.

3. Thresholds (Steel Doors and Frames – Design Pressures Exceeding -50/+50 PSF):
   a. Manufacturers: Global, National Guard Products, Pemko, Rockwood, Zero International.

b. BHMA (A156.21): J35132. Height and profile compliant with governing accessibility standards. Fabricated full length of door opening. Set in sealant bed and attached with exposed recessed mounted corrosion resistant metal fasteners compatible with substrate.
c. Finish BHMA (A156.18): 689 with black rubber gasket.

L. Gaskets (BHMA A156.22):
1. Perimeter Seal Gaskets (Exterior Steel Doors and Frames):
a. Manufacturers: Draftseal, Fenseal, Pemko, Schlegel, Zero International.
b. BHMA (A156.22): R0H185 or R0G185. Thermoplastic urethane (TPU) foam, UV stabilized polyethylene cover, kerf mounted compression set, replaceable.
c. Finish: Black cover.
d. Maximum Air Leakage: When tested according to ASTM E283 with tested pressure differential of 0.3 inch wg as follows:
1) Gasketing on Single Doors: 0.3 cfm/sq. ft. of door opening.
2) Gasketing on Double Doors: 0.50 cfm/sq. ft. of door opening.

2. Perimeter Seal Gaskets (Exterior Steel Doors and Frames – Design Pressures Exceeding -50/+50 PSF):
a. Manufacturers: National Guard Products, Pemko, Zero International.
b. BHMA (A156.22): R3E165. 6063-T6 aluminum alloy and temper retainer with silicone rubber gasketing.
c. Finish BHMA (A156.18): 689 retainer with black silicone rubber.
d. Maximum Air Leakage: When tested according to ASTM E283 with tested pressure differential of 0.3 inch wg, as follows:
1) Gasketing on Single Doors: 0.3 cfm/sq. ft. of door opening.
2) Gasketing on Double Doors: 0.50 cfm/sq. ft. of door opening.

3. Perimeter Smoke Seal Gaskets (Interior Fire Rated Steel Doors and Frames):
a. Manufacturers: National Guard Products, Pemko, Zero International.
b. BHMA (A156.22): R0G154. Thermoplastic elastomer (TPE) compression bulb and stabilizer flange with self-adhesive backing.
c. Finish: Black vinyl.
d. Smoke Tested: When tested according to UL1784 meeting requirements of NFPA 105 with not more than 3.0 cfm per square foot at 0.10 inch water column.
e. Fire Tested: Tested to UL 10B Standard Fire Test and UL 10C Positive Pressure Fire Tests of Door Assemblies.

4. Split Astragals (Aluminum Entrances Double Doors):
a. Manufacturers: Kawneer, National Guard Products, Pemko, Schlegel, Zero International.
b. BHMA (A156.22): R0A715. Double row brush weatherstripping, door edge recessed mounted, replaceable, mechanically attached.
c. Finish BHMA (A156.18): 689 retainer with gray brush fiber.
d. Maximum Air Leakage: When tested according to ASTM E283 with tested pressure differential of 0.3 inch wg as follows:
1) Gasketing on Double Doors: 0.50 cmf/sq. ft. of door opening.

5. Split Astragals (Exterior and Interior Double Doors):
a. Manufacturers: National Guard Products, Pemko, Rockwood, Zero International.
b. BHMA (A156.22): R3E735. 6063-T6 aluminum alloy temper retainer with silicone rubber gasketing.
c. Finish BHMA (A156.18): 689 retainer with black silicone rubber.
d. Maximum Air Leakage: When tested according to ASTM E283 with tested pressure differential of 0.3 inch wg as follows:

1) Gasketing on Double Doors: 0.50 cmf/sq. ft. of door opening.

6. Split Smoke Seal Astragals (Interior Fire Rated Double Doors):
   a. Manufacturers: National Guard Products, Pemko, Rockwood, Zero International.
   b. BHMA (A156.22): R3E734. 6063-T6 aluminum alloy temper retainer with silicone rubber gasketing.
   c. Finish BHMA (A156.18): 689 retainer with black silicone rubber.
   d. Smoke Tested: When tested according to UL1784 meeting requirements of NFPA 105 with not more than 3.0 cfm per square foot at 0.10 inch water column.
   e. Fire Tested: Tested to UL 10B Standard Fire Test and UL 10C Positive Pressure Fire Tests of Door Assemblies.

7. Door Bottom Shoe (Exterior Steel Doors):
   a. Manufacturers: Global, Hager, National Guard Products, Pemko, Zero International.
   b. BHMA (A156.22): R3G414. 6063-T6 aluminum alloy temper retainer with 1 inch minimum high flanges with slotted openings for adjustable surface mounted exposed corrosive resistant fasteners, 1/2 inch high thermoplastic elastomer (TPE) flexible friction weather seal.
   c. Finish BHMA (A156.18): 689 retainer with gray or black TPE insert.

8. Door Bottom Sweep (Aluminum Entrances):
   a. Manufacturers: Kawneer, National Guard Products, Pemko, Zero International.
   b. BHMA (A156.22): R3G535. 6063-T6 aluminum alloy temper retainer with 7/8 inch minimum high flange with beauty snap cover, concealed surface mounted corrosive resistant fasteners, 1 inch high thermoplastic elastomer (TPE) flexible friction weather seal.
   c. Finish BHMA (A156.18): 689 retainer with gray or black TPE insert.

9. Door Bottom Sweeps (Interior Fire Rated Doors):
   a. Manufacturers: Draftseal, Hager, National Guard Products, Pemko, Reese, Zero International.
   b. BHMA (A156.22): R3A434. 6063-T6 aluminum alloy temper retainer with 3/4 inch minimum high flange with slotted openings for adjustable surface mounted exposed corrosive resistant fasteners, 5/8 inch high nylon brush.
   c. Finish BHMA (A156.18): 689 retainer with gray nylon brush.
   d. Smoke Tested: When tested according to UL1784 meeting requirements of NFPA 105 with not more than 3.0 cfm per square foot at 0.10 inch water column.
   e. Fire Tested: Tested to UL 10B Standard Fire Test and UL 10C Positive Pressure Fire Tests of Door Assemblies.

10. Door Top Rain Drips:
   a. Manufacturers: Hager, National Guard Products, Pemko, Zero International.
   b. BHMA (A156.22): R3Y976. 6063-T6 aluminum alloy temper retainer with 5/8 inch minimum high flange and 2 1/2 inch wide drip, surface mounted exposed corrosive resistant fasteners
   c. Finish BHMA (A156.18): 689.

M. Continuous Hinges (BHMA A156.26):
   1. Continuous Geared Hinges:
      a. Manufacturers: Hagar, Ives, McKinney, Pemko, Stanley.
      b. BHMA (A156.26): A31011G. Minimum 0.120 inch thick, hinge leaves with minimum overall width of 4 inches, fabricated to full height of door and frame and to template screw locations, with components finished after milling and drilling are complete.
      c. Finish BHMA (A156.18): 628

N. Auxiliary Locks (BHMA A156.36):
   1. Deadlocks with Single Point Locking:
      a. Manufacturers: Adams Rite.
      b. BHMA (A156.36): E8211. Dead bolt, exterior cylinder with removable core, inside lever handle and latch indicator stating “LOCKED” and “OPEN”, armored dead bolt strike.
      c. Finish BHMA (A156.18): 628.

   2. Deadlocks with Three Point Locking:
      a. Manufacturers: Adams Rite.
      b. BHMA (A156.36): E82111. Dead bolt with concealed threshold and header bolts, exterior cylinder with removable core, inside lever handle and latch indicator stating “LOCKED” and “OPEN”, armored dead bolt strike, dust proof threshold strike.
      c. Finish BHMA (A156.18): 628.

O. Multipoint Locks (BHMA A156.37):
   1. Store Entry Mortis Deadlocks with Three Point Locking:
      a. Manufacturers: Corbin Russwin, Sargent.
      b. BHMA (A156.37): Function Type F14. Series 1000 Operational Grade 1 and Security Grade 1. Mortis lock with double cylinder. Key from either side retracts and projects deadbolt at head and threshold. Trim from either side retracts latchbolt at center. Latchbolt and deadbolt are independent of each other. Indicator to show rod dogging status of deadbolts. Exterior cylinder with removable core. Lever and escutcheon trim style equal to Sargent ”LWI” series (Basis of Design). Solid one piece cast with rectangular cross section in “J” shape with straight angled safety return end and overall face dimension of 5 inches minimum.
      c. Finish BHMA (A156.18): 630.
      d. High Wind and Impact Resistance (Florida Building Code Compliance): UL Certification Directory ZHEM.R21744 – Latching Hardware. FBC Product Approval Number FL2998. Comply with quality and performance requirements specified.

2.03 KEYING

A. Keying: Refer to hardware schedule key legend. Doors with removable core lock cylinders shall be keyed. Include construction keying and control keying with removable core cylinders. Coordinate final keying with Owner’s facility keying system.

B. Supply 2 change keys for each lock.

C. Key Tags:
   1. Manufacturer: Barska, Kidde, Lund, or approved equal.
   2. Key Tags: Color white, label with project number and door numbers corresponding to door schedule.

2.04 FASTENINGS

A. Furnish all necessary screws, bolts, and other fasteners of suitable size and type to properly anchor the hardware.

B. Furnish fastenings, where necessary, with expansion shields, toggle bolts, sex bolts, and other anchors, according to the material to which hardware is to be applied and the recommendations of the hardware manufacturer.

C. Furnish fastenings compatible with both hardware and substrate material and, if exposed, matching hardware finish.

2.05 FIRE DEPARTMENT EMERGENCY ACCESS KEY STORAGE DEVICES

A. General: Coordinate required type, acquisition, installation location, and approval requirements with governing authorities and Owner.

B. Manufacturer: Knoxbox Series 3200, color aluminum, unless otherwise required by governing authorities. Provide blocking and substrate as required to support per manufacturer's installation instructions. Unless otherwise directed install in exterior construction conditions as follows:
   1. Recess Mount: Pre-engineered metal building panel systems, exterior finishes over sheathing and cold form metal framing systems.
   2. Surface Mount: Load bearing concrete masonry units (CMU) systems.

C. Facility Hardware Keys: Owner to provide additional keys to facility exterior door(s) required to be stored in storage device in quantity required by governing authorities.

PART 3 - EXECUTION

3.01 INSTALLATION

A. General: Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
   1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
   2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

B. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations:
   1. ADA standards and governing accessibility code specified.
   2. Standard Steel Doors and Frames: ANSI / SDI A250.8.
   3. Custom Steel Doors and Frames: HMMA 831.
   4. Wood Doors: DHI's "Recommended Locations for Architectural Hardware for Wood Flush Doors".

C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or 1 hinge for every 30 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

D. Lock Cylinders: Install construction cores to secure building and areas during construction period.
   1. Replace construction cores with permanent cores as indicated in keying schedule.
   2. Furnish permanent cores to Owner for installation.

E. Thresholds: Set thresholds in full bed of butyl-rubber or polyisobutylene mastic sealant complying with Section 07 92 00.

F. Stops: Provide all stops for doors unless floor or other type stops are indicated in door hardware schedule. Do not mount floor stops where they will impede traffic.

G. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame. Do not notch perimeter gasketing to install other surface-applied hardware.

H. Astragal Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

I. Fastening: Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.

3.02 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
   1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
   2. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 70 degrees and so that closing time complies with accessibility requirements of authorities having jurisdiction.
   3. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.

B. Occupancy Adjustment: Prior to date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.03 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

END OF SECTION

SECTION 09 21 16

GYPSUM BOARD ASSEMBLIES

PART 1 – GENERAL

1.01 SUMMARY

A. Provide gypsum board assemblies where indicated. (Note: Cold-Formed Metal Framing specified under Section 05 40 00)
   1. Interior walls, partitions, and ceilings.
   2. Exterior wall, ceiling and soffit substrates for exterior finish materials.
   3. Fire rated assemblies.
   4. Remodeling at existing gypsum board construction.

1.02 SUBMITTALS

A. None required unless submitting for approved equals.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified.
   1. ASTM C442, Standard Specification for Gypsum Backing Board, Gypsum Coreboard, and Gypsum Shaftliner Board.
   2. ASTM C475, Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
   3. ASTM C840, Standard Specification for Application and Finishing of Gypsum Board.
   4. ASTM C1002, Standard Specifications for Steel Self Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
   5. ASTM C1047, Standard Specification for Accessories for Gypsum Wall Board and Gypsum Veneer Base.
   6. ASTM C1177, Standard Specification for Glass Matt Gypsum Substrate Used for Sheathing.
   7. ASTM C1280, Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing.
   8. ASTM C1396, Standard Specification for Gypsum Board.
   9. ASTM D3273, Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
   10. ASTM E90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
   11. ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials.

C. Fire Resistant for Fire Rated Assemblies: Where work is indicated for fire-resistance ratings, provide materials and installations identical with assemblies whose fire resistance rating has been determined per ASTM E119 by a testing and inspection organization acceptable to authorities having jurisdiction.

D. Moisture and Mold-Resistant Assemblies: Provide moisture and mold-resistant gypsum board products with surfaces complying with ASTM C1396 and ASTM C1177 in all locations subject to moisture exposure.

E. Performance: Structural and seismic performance meeting requirements of building code and local authorities.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Manufacturers of Gypsum Board: CertainTeed Gypsum, Inc., Georgia-Pacific Corp., National Gypsum Co., Temple-Inland, United States Gypsum Co., or approved equal.

B. Gypsum Board:
1. Gypsum Wallboard: ASTM C1396, Type X fire-rated type, , tapered edges.
2. Moisture Resistant Gypsum Backing Board: ASTM C1396, Type X fire-rated type.
3. Fiberglass-Mat Faced Gypsum Sheathing: ASTM C1177, Type X fire rated, ASTM D3273, mold resistant 10, fiberglass matt faced gypsum core, square edges.
4. Shaftwall: ASTM C442, Type SLX, Type X beveled edges, width required for blind installation in framing spacing and type indicated.

C. Joint Treatment Materials: ASTM C475 and ASTM C840, 2-coat joint compound, and other materials, paper, or fiberglass tape.

D. Trim Accessories: ASTM C1047. Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of galvanized steel unless otherwise indicated, with either knurled and perforated or expanded flanges for attachment, and beaded for concealment of flanges in joint compound. Provide all corner beads, edge trim-beads, and one-piece control joint beads. Provide decorative profiles factory primed of types indicated.

E. Fasteners: ASTM C1002, self-drilling, self tapping screws for power driving with special head design for gypsum board attachment (Type S), producing surface depression for proper concealment; 1-inch long for single ply, 1-5/8-inch long for double ply, 2-inch long for multiple plies. Use other fasteners as required.

F. Textures: All exposed to view surfaces to be smooth sanded finish, unless otherwise indicated. Where spray application for splatter, knock-down and orange-peel type textures specified, submit samples for Owner's review and approval.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Inspection: Coordinate with carpenter and insulator in placing of backing, blocking, bracing, and insulation where required in walls for acoustical treatment, millwork, fixtures, fittings, and accessories. Examine substrates for proper application of gypsum board systems. Beginning work means acceptance of conditions.

B. General: Install gypsum board assemblies in compliance with ASTM C840. Install gypsum board assemblies true, plumb, level, and in proper relation to adjacent surfaces.

C. Tolerances: Not more than 1/16-inch difference in true plane at joints between adjacent boards before finishing. After finishing, joints shall not be visible. Not more than 1/8-inch in 10 feet deviation from true plane, plumb, level, and proper relation to adjacent surfaces in finished work.

D. Partitions: Install boards vertically parallel to studs. DO NOT allow butt-to-butt joints and joints that do not fall over framing members. Arrange gypsum board joints on opposite sides of partitions to occur on different studs.

E. Ceilings and Soffits: Install boards across framing members in manner which minimizes number of end-butt joints and which avoids end joints in central area of each ceiling and soffit. Stagger end joints at least 24-inches.

F. Fastening: Fasten gypsum board to metal studs with specified screws spaced 16-inches on center for walls and 12-inches on center for ceilings of single layer application, 24-inches on center for wall and 16-inches on center for base layer, and 16-inches on center for wall and 12-inches on center for ceilings of double layer applications.

G. Expansion/Control Joints: Install expansion/control joints in ceilings exceeding 2500 sq. ft. in area and in partition and wall runs exceeding 30-feet unless otherwise indicated. DO NOT exceed a distance of 50-feet in either direction, between ceiling control joints and install a control joint where ceiling framing of furring changes direction. DO NOT exceed a distance of 30-feet between control joints in walls unless otherwise indicated.

H. Transitions, Trim, and Corners:
   1. Provide casing beads where edges of gypsum board meet dissimilar materials.
   2. Treat all internal angles formed by the intersection of either wallboard surfaces with metal trim and/or a taped joint system as indicated or required.
   3. Treat all vertical and horizontal external corners with metal bead corner reinforcement applied in accordance with manufacturer's recommendations.
   4. Where new partitions meet existing construction, remove existing corner beads to provide a smooth transition.

3.02 FIRE RATED SYSTEMS

A. Provide fire rated systems where indicated or where required by authorities having jurisdiction in accordance with ASTM E119.

B. Provided fire rated construction materials and installations identical with requirements of indicated recognized independent testing agency referenced assemblies.

C. Coordinate inspection requirements with authorities having jurisdiction prior to begging work. Upon request, provide documentations of fire-rated construction materials, means, and methods.

3.03 FINISHING

A. Finishing: Comply with ASTM C840. Refer to drawings for finish types and locations.
   1. Level 1: Concealed areas, plenums, service corridors, above ceilings. Except provide higher level of finish as required to comply with fire resistance ratings

and acoustical ratings.

2. Level 2: Areas of water-resistant gypsum backing board under tile, exposed areas where appearance is not critical.
3. Level 3: Areas to receive heavy or medium textured coatings, heavy-grade wall coverings.
4. Level 4: Areas to receive flat sheen or satin paint finish, light textured coatings, lightweight wall coverings.
5. Level 5: Areas to receive gloss, semi-gloss sheen paints, critical lighting conditions.

END OF SECTION

SECTION 09 51 00

ACOUSTICAL TILE CEILINGS

PART 1 – GENERAL

1.01 SUMMARY

A. Provide the following:
   1. Acoustical tile ceilings, trim, and concealed metal suspension system.

1.02 SUBMITTALS

A. None required unless submitting for approved equals.
B. Provide 2% of extra replacement tile matching each type of material provided to Owner at substantial completion.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers, which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
B. Performance: Fire, structural, and seismic performance meeting requirements of building code and local authorities. Acoustical performance based on project requirements.

PART 2 – PRODUCTS

2.01 ACOUSTICAL LAY-IN PANELS

A. Manufacturers: Armstrong is specified; equivalent products of BPB Celotex and USG Interiors are acceptable; or approved equal.
B. Type C-1: (Refer drawing finish schedule.)
   1. Style: Armstrong "1729" Fine Fissured.
   2. Size: 24 x 48 inches by 5/8-inch.
   3. Material: Mineral Base Panels, Water Felted.
   4. Edge Detail: Square.
   5. Pattern: Fissured pattern.
   6. Type, Form, and Finish: ASTM E 1264, Type III, Form 2 with painted finish.
   7. Class A Flame Resistance, Class I Flame Spread Rating of 25 or less, STC 35-39, NRC 0.55.
   8. Insulation Value: Average R-Value of 1.5 at 75°.
   9. Weight: 0.60 lbs./sq. ft.

2.02 SUSPENSION SYSTEM MATERIALS

A. Manufacturers: Armstrong is specified; equivalent products of Chicago Metallic, Donn, and National Rolling Mills are acceptable; or approved equal.
B. Type CG-1:
   1. Style: Armstrong "Prelude" 15/16 Exposed Tee System.
   2. Type: Exposed grid system, direct-hung double-web intermediate-duty system, ASTM C 635. Non-Fire-Resistance Rated.
   3. Finish: Steel members, treated and protected against rust and corrosion and factory finished with baked on vinyl enamel or polyester or anodized.

4. Color: White.
5. Wall Molding: Provide wall molding, of types and profiles indicated, of same material and finish as suspension system.

C. Attachment Devices: Type recommended by suspension system manufacturer for attachment or anchorage of ceiling hangers to structure above ceiling, sized for not less than 5 times the hanger design load for the structural classification indicated.
D. Hanger Wire: Minimum No. 12 gage, galvanized annealed steel wire. Provide seismic reinforcing as recommended by suspension system manufacturer for compliance with local building codes.

2.03 MISCELLANEOUS MATERIALS

A. Tile adhesive, staples, and sealant: Provide type recommended by manufacturer for specific project conditions.
B. Hold-down clips, impact clips, and seismic compression bracing: Provide type recommended by manufacturer for compliance with local building codes.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Install materials and suspension systems in accordance with manufacturer's instructions and recommendations and ASTM C 636. Coordinate installation with location of mechanical and electrical work to ensure proper locations.
B. Center locate system on room axis, leaving equally spaced border along perimeter. Lay directional patterned units one way with pattern parallel to longest room axis. Level ceiling to within 1/8-inch in 10 feet both directions. Scribe and cut panels to fit accurately. Measure and layout to avoid less than half panel units unless otherwise indicated.
C. Provide hold down clips at all units within 20 feet of an exterior door.
D. Seismic bracing, where required by local building codes, shall be located at 12 feet on center with the first line of bracing 4 feet or less from wall boundary. Seismic bracing shall consist of (4) splay wires at 45° to runner connections and 45° to plane of ceiling, (1) vertical connection wire provided with compression bracing of ½-inch rigid conduit extending full height between connection points. Coordinate with building official for inspection requirements.
E. Removal and reinstallation at existing ceilings: Remove and store materials for reuse. Handle with gloves to avoid damaging corners and edges. Clean tiles and grid system, which have been removed. Provide additional materials to complete the work and to replace damaged existing materials. New materials shall exactly match existing materials as approved.
F. Adjust, clean, and touch-up all system components.
G. Provide wrapped and labeled maintenance stock of new material equal to 2% of ceiling panels, tile, and suspension installed.

END OF SECTION

SECTION 09 77 00

SANITARY WALL & CEILING PANELS

PART 1 - GENERAL

1.01 SUMMARY

A. Provide sanitary wall panels, ceiling panels and surface preparation where indicated.

1.02 SUBMITTALS

A. Comply with Section 01 33 00.
B. Upon request submit for approval samples, product data, and maintenance

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
B. Performance: Fire performance meeting requirements of building code and local authorities.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Fiberglass Reinforced Panel (FRP) Wall Covering:
   1. Manufacturers: Nudo Products, Inc. specified; Equivalent by Crane Composites, Inc., Marlite, Sequentia or approved equal.
   2. Panel Type: “Fiber-Lite” by Nudo.
      a. Model No.: “LP-FR9”.
      b. Surface Burning Characteristics: Fire rating Class A (ASTM E-84-81A), flame spread index 25, smoke development value 335.
      c. Thickness: 0.90 inch minimum., 9000 psi flex strength (ASTM D790), 660,000 psi tensile strength (ASTM D638).
      d. Finish: “Pebble Texture”, embossed, tabor abrasion resistance 0.038.
      e. Water Absorption Percentage: 0.16 (ASTM D570).
      f. Panel sizes: Manufacturer’s standard sizes. Horizontal seams are not permitted
      g. Color: Refer to drawings. Unless otherwise indicated, to be selected by Architect from manufacturer’s standard samples.
   3. Certification: ICBO, USDA/FSIS.
   4. Trim, edges, moldings, flashing, and counterflashing: PVC, vinyl or aluminum as required for moisture resistant assembly. Color to match panel.
   5. Fasteners: Non-corroding type as required for substrate attachment. Stainless nails or screws. Nylon, chrome, or plastic, one-piece rivets, for sanitary maintenance. Colors to match panel.
   6. Adhesive: As recommended by manufacturer for substrate attachment conditions.
   7. Sealant: Comply with Section 07 92 00.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Acclimatize materials; prime and seal substrates; test substrates for moisture content and prepare surfaces in compliance with manufacturer's recommendations. Substrates must be flat, clean, dry and free of all dirt, dust, or grease.
B. Install in accordance with manufacturer's instructions. Apply adhesive and install with seams plumb to ensure tight closure except where pattern would not match. Do not place seams within 6" of corners.
C. Adhesive: Wall panels to be installed with 100% adhesive coverage. Fasteners are used in conjunction with adhesives in certain applications, where needed in high moisture conditions, uneven substrate, high abuse and large panel areas.
D. Expansion: Leave not less than 1/4" gap at ceilings and floor, 1/8" gap between wall panels for normal expansion and contraction. Allow not less than 1/8" gap around pipes, electrical fittings and other projections. Fill gaps with flexible, silicone-based sealant to complete moisture seal.
E. Fastener Position: Install fasteners not farther than 8" apart around outside edges and 12" apart on intermediate 16" centers. Stagger fasteners on opposing panel edges. Outside fasteners should be approximately 1" from panel edge.
F. Sealant: Seal all corner seams, ceiling and base junctures and fastener holes.
G. Remove air bubbles, blisters, wrinkles and other defects; horizontal seams are not permitted. Remove excess adhesive immediately; clean walls and protect surfaces.

END OF SECTION

SECTION 09 90 00

PAINTING

PART 1 – GENERAL

1.01 SUMMARY

A. Provide the following where indicated:
   1. Painting and surface preparation for interior and exterior surfaces as scheduled.
   2. Re-painting and surface preparation at areas of remodeling as scheduled.

1.02 SUBMITTALS

A. Comply with Section 01 33 00.

B. Paint Schedule: Submit paint schedule listing each material cross-referenced to finish schedules. Identify by manufacturer's catalog number and general classification.

C. Product Data: Submit manufacturer's data sheets on each paint or coating product to be used shall include:
   1. Product characteristics.
   2. Surface preparation instructions and recommendations.
   3. Primer requirements and finish specification.
   4. Storage and handling requirements and recommendations.
   5. Application methods.
   6. Clean-up information.
   7. Maintenance recommendations and instructions.

D. Samples: Upon request, submit samples of finish types and colors.

E. Mock-Ups: Upon request, finish 24"x24" minimum surface area for verification of products, colors, and sheens. Do not proceed with remaining work without prior written approval.

F. Installer Warranty: Submit warranty specified.

G. Manufacturer Warranty: Submit warranty specified.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Provide products of approved manufacturers which have been in satisfactory use in similar service for three years. Deliver, handle, store, and dispose materials in accordance with manufacturer's instructions.

B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified, or as accepted or directed by the Architect:
   1. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials.
   2. Architectural Painting Specification Manual by the Master Painters Institute (MPI), including identifiers, evaluation, system, preparation and approved product list.
   3. Test Method for Measuring Total Volatile Organic Compound (VOC) Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).

C. Installer Qualifications: Painting contractor shall have a minimum of five (5) years proven satisfactory experience and maintain direct supervision and qualified personnel throughout duration of the work. Upon request, provide a list of three (3) comparable projects including name, location, designer / specifier, general contractor, value of painting work, and dates of commencement and completion.

D. Testing and Inspections (Where required by Owner):
   1. Owner shall secure the services of a qualified independent testing agency to perform testing, inspections, and documentation of materials used and work performed to confirm adherence to accepted trade practices, standards and specifications.
   2. Contractor shall coordinate the testing and inspection services with the progress of the work. The contractor shall provide sufficient notice to allow proper scheduling of all personnel. The contractor shall provide safe access to work for performing testing and inspections.

1.04 WARRANTIES

A. Installer Warranty: Provide Two (2) year installation warranty that all painting work has been performed in accordance with Master Painters Institute (MPI) Painting Manual requirements for project conditions and material manufacturer's instructions.

B. Manufacturer Warranty: Provide Five (5) year material warranty that products installed per manufacturer's instructions shall be free of peels, blisters, or performance defects and signed by an authorized representative.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Manufacturers: Sherwin Williams specified. Equal products by PPG Industries acceptable (No substitutes). First-line commercial-quality products for all coating and accessory material systems. All paint and coating materials shall be from a single manufacturer for each system used.

B. Environmental: All materials used shall be lead and mercury free and shall have low VOC content in compliance with EPA standards and regulations for project conditions.

C. Flame Spread and Smoke Development Ratings: Comply with ASTM E84, flame spread rating of 0 to 25, smoke development rating of 0 to 450.

D. Compatibility: All materials used shall be compatible with substrate materials and service use environmental exposure conditions.

E. Coatings: Ready mixed except field catalyzed coatings of good flow and brushing properties, capable of drying or curing free of blemishes, streaks, sags, or air entrapment.

F. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners, and other materials required to achieve the finishes specified for project conditions as recommended by material manufacturer.

2.02 FINISHES, MIXING AND TINTING

A. Finish and Colors: Refer to drawing interior and exterior finish schedules for colors, gloss / sheen, and locations.

B. Mixing and Tinting: All paint shall be ready-mixed and pre-tinted. Re-mix all paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and color and gloss uniformity. Mix in accordance with manufacturer's instructions. Where thinner is used, addition shall not exceed paint manufacturer's recommendations. Do not use kerosene or any such organic solvents to thin water-based paints.

PART 3 – EXECUTION

3.01 EXAMINATION AND PREPARATION

A. Examine the areas and conditions under which painting work is to be preformed. DO NOT proceed with the work until unsatisfactory conditions have been corrected. Starting of painting work will be construed as acceptance of the surfaces within any particular areas.

B. Perform all preparation and cleaning procedures in strict accordance with the MPI standards and paint or coating manufacturer's instructions. Remove all hardware, plates, lighting fixtures, and similar items in place and not to be finish painted or provide protection prior to surface preparation and painting operations. DO NOT finish over equipment identification plates or fire rated assembly labels. Remove, if necessary, for the complete painting of the items and adjacent surfaces. Re-install the removed items by workmen skilled in the trades involved, after painting is complete.

C. Cementitious Materials: Prepare cementitious surfaces to be painted by removing all chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze. Determine the alkalinity and moisture content of the surfaces to be painted by performing appropriate test. If the surfaces are found to be sufficiently alkaline to cause blistering and burning of the finish paint, correct this condition before application of paint.

D. Wood: Clean wood surfaces to be painted of all dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those surfaces exposed to view and dust off. Prime, stain, or seal wood required to be job painted immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of such wood, including cabinets, counters, cases, etc. Scrape and clean small, dry seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before application of the priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sandpaper smooth when dried.

E. Gypsum Wall-Board: DO NOT paint over gypsum wallboard work until taped joints are thoroughly dry.

F. Ferrous Metals: Touch-up shop applied prime coats which have damaged or bare areas. Wire-brush, solvent clean, and touch up with the same primer as the shop coat.

G. Galvanized Surfaces: Clean free of oil and surface contaminates with an acceptable non-petroleum-based solvent.

H. Aluminum: Remove film of oil and grease before painting by washing with mineral spirits.

I. Existing Materials to Remain: At existing areas to be re-painted, remove blistered or peeling paint to sound substrates. Remove chalk deposits and mildew and wash all surfaces with mild detergent. Perform related minor preparation including caulk and glazing compounds. Spot prime bare areas before priming and painting as specified.

J. Concrete Masonry Unit (CMU): Individual job applications will require that the Contractor pay particular attention to the weather conditions prior to and during applications of products. A cold weather application is given if the temperatures are such that it is necessary for installation. All manufacturers' application data should be followed on temperature and humidity installation. Upon installation, the Contractor shall confirm a pin hole free surface is achieved of the coating system. After application, the Contractor shall peer down on the wall from the top of the building to make sure all of the ledges are covered and are pin hole free. It is recommended that the products are sprayed up, down and side-to-side. It is required that spray application be back rolled as well for proper coverage. Contractor must also verify mil thickness at each coating prior to applying succeeding coatings.

3.02 APPLICATION

A. Apply paint by brush, roller, spray, or other acceptable practice in accordance with the manufacturer's directions. Paint applied by spray shall be back rolled. Use brushes best suited for the type of material being applied. Use rollers or carpet, velvet back, or high pile sheep wood as recommended by the manufacturer for material and texture required.

B. The number of coats and paint film thickness required is the same regardless of the application method. DO NOT apply succeeding coats until previous coat has completely dried. Sand between each enamel or varnish coat application with fine sand paper or rub surfaces with pumice stone where required to produce an even smooth surface in accordance with coating manufacturer's directions.

C. Apply additional coats when undercoats, stains, or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance.

D. Give special attention to ensure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a film thickness equivalent of that of flat surfaces.

3.03 STANDARD SCHEDULE OF TREATMENTS

A. General:
   1. Finish and Colors: Refer to drawing interior and exterior finish schedules.
   2. Coverage: Paint or coating material coverage rates shall be in strict accordance with manufacturer's specifications, unless otherwise indicated.

B. Interior gypsum board or plaster walls and ceilings:
   1. One coat of latex primer sealer.
   2. Two coats of acrylic latex paint.

C. Interior Wood- Transparent:
   1. Filler coat (for open grained wood only).
   2. One coat of stain.
   3. One coat of sealer.
   4. Two coats of varnish, satin.

D. Exterior and Interior Wood- Painted:
   1. One coat of acrylic primer sealer.
   2. Two coats of exterior acrylic paint.

E. Exterior and Interior Ferrous Metal:
   1. One coat of rust-inhibiting primer.
   2. Two coats exterior alkyd paint.

F. Exterior and Interior Galvanized Metal:
   1. Chemical wash.
   2. Galvanized iron primer.
   3. Two coats exterior alkyd paint.

G. Exterior and Interior Concrete, Concrete Masonry Units (Not Defined Under Special Schedule of Treatments):
   1. General Application
      a. One coat interior/exterior latex block filler. Sherwin Williams “Pro Industrial Heavy Duty Block Filler B42W150”. Not less than 16 Wet mils thick.
      b. Two coats elastometric coating. Sherwin Williams “CONFLEX XL Smooth High Build Acrylic Coating CF11W51”. Not less than 5.7 Wet mils thick each coat.
   2. Cold Weather Application
      a. One coat Acrylic resin block surfacer. Sherwin Williams “Loxon Block Surfacer”. Not less than 8 Wet mils thick.
      b. Two coats solvent borne masonry coating (waterproof sealer). Sherwin Williams “Ultracrete Solvent Borne Smooth B46”. Not less than 8 Wet mils each coat or 16 mils total.

3.04 SPECIAL SCHEDULE OF TREATMENTS – NEW CONSTRUCTION CONCRETE MASONRY UNIT (CMU) BUILDING EXTERIOR THERMAL ENVELOPE ASSEMBLY

A. General:
   1. Where required: Refer to drawings.
   2. Substrate Conditions: Concrete masonry unit assemblies to have less than Twelve Percent (12%) moisture content, ph less than 13, and mortar cured for Seven (7) days minimum.
   3. Finish and Colors: Refer to drawing finish schedules.
   4. Coverage: Paint or coating material coverage rates shall be in strict accordance with manufacturer’s specifications, unless otherwise indicated.
   5. Application: Each coat specified shall be spray applied and back rolled.

B. Concrete Masonry Unit (CMU) Exterior Surface Coatings:
   1. Primer:
      a. Sherwin Williams “LOXON” Acrylic Block Surfacer “LX01W0200-LXN BLOCK SURF WHT”. Not less than 16 Wet mils thick. Two coats may be required to achieve pinhole free surface.
      b. PPG Industries “Perma-Crete” Concrete Block & Masonry Surfacer / Filler “4-100XI“. Not less than 16 Wet mils thick. Two coats may be required to achieve pinhole free surface. Minimum 16 hour recoat period.
   2. Coat 1:
      a. Sherwin Williams “LOXON” Self-Cleaning Acrylic Coating “LX13W0051-LXN SELF-CLEAN EW”. Not less than 6 Wet mils. thick.
      b. PPG Industries “Perma-Crete” Acrylic High-Build “4-22XI”. Not less than 6 Wet mils thick. Minimum 4 hour recoat period.
   3. Coat 2:
      a. Sherwin Williams “LOXON” Self-Cleaning Acrylic Coating “LX13W0051-LXN SELF-CLEAN EW”. Not less than 6 Wet mils thick.

b. PPG Industries “Perma-Crete” Acrylic High-Build “4-22XI”. Not less than 6 Wet mils thick. Minimum 4 hour recoat period.

C. Concrete Masonry Unit (CMU) Interior Surface Coatings:
   1. Application: Apply prior to installation of interior surface furring, insulation, and gypsum board assemblies.
   2. Primer:
      a. Sherwin Williams “LOXON” Water Blocking Primer “LX12W0050-LXN WTR BLCK PR WH”. Not less than 6 Wet mils thick. Application with overnight drying between Coat 1.
      b. PPG Industries “Perma-Crete” Concrete Block & Masonry Surfacer / Filler “4-100XI“. Not less than 16 Wet mils thick. Two coats may be required to achieve pinhole free surface. Minimum 16 hour recoat period.
   3. Coat 1:
      a. Sherwin Williams “LOXON” Water Blocking Primer “LX12W0050-LXN WTR BLCK PR WH”. Not less than 6 Wet mils. thick.
      b. PPG Industries “Perma-Crete” Acrylic High-Build “4-22XI”. Not less than 6 Wet mils thick. Minimum 4 hour recoat period.
   4. Coat 2:
      a. PPG Industries “Perma-Crete” Acrylic High-Build “4-22XI”. Not less than 6 Wet mils thick. Minimum 4 hour recoat period.

3.05 FIELD QUALITY CONTROL AND STANDARD OF ACCEPTANCE

A. Quality Assurance:
   1. Refer to Testing and Inspection for additional requirements.
   2. Contractor shall utilize industry standard measuring devices during paint and coating applications to verify minimum coverage rates and thickness specified are being provided.

B. Painted surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent:
   1. Brush / roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.
   2. Evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and reentrant angles.
   3. Damage due to touching before paint is sufficiently dry or any other contributory cause.
   4. Damage due to application on moist surfaces or caused by inadequate protection from the weather.
   5. Damage and/or contamination of paint due to blown contaminates (dust, spray paint, etc.).

C. Painted surfaces shall be considered unacceptable if any of the following are evident under natural lighting source for exterior surfaces and final lighting source (including daylight) for interior surfaces:
   1. Visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than Thirty-Nine (39) inches.
   2. Visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than Thirty-Nine (39) inches.
   3. Visible defects are evident on ceiling, soffit, or other overhead surfaces when viewed at normal viewing angles.
   4. When the final coat of any surface exhibits a lack of uniformity of color, sheen, texture, and hiding across full surface area.

3.06 REPAIR, PROTECTION AND CLEAN-UP

A. Repair:
   1. Follow MPI standards and paint manufacturer's instructions for repair and painting of existing finishes.
   2. Use finish coat of respective new surface paint or coating system for minor repair of existing finishes. Use system primer where existing finishes are damaged down to substrate surface.

B. Protection:
   1. Protect all surfaces and areas, including landscaping, walks, drives, and adjacent building surfaces (including glass, aluminum surfaces, etc.) and equipment and any labels and signage from painting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and repair damage caused by failure to provide such protection.
   2. Erect barriers or screens and post signs to warn of or limit or direct traffic away or around work area as required.

C. Clean-Up:
   1. Remove all paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
   2. Keep work area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.
   3. Remove combustible rubbish materials and empty paint containers each day and safely dispose in accordance with requirements of authorities having jurisdiction.
   4. Clean equipment and dispose of wash water / solvents and other cleaning and protective materials (e.g. rags, drop cloths, masking papers, etc.), paints thinners, paint removers / strippers in accordance with safety requirements of authorities having jurisdiction.

END OF SECTION

SECTION 13 34 19

PRE-ENGINEERED METAL BUILDING SYSTEM ERECTION

PART 1 – GENERAL

1.01 SUMMARY

A. Provide handling and erection of Owner supplied pre-engineered metal building package where indicated.
   1. Structural steel main building frames, secondary framing, bracing, including purlins and girts, engineered and fabricated by the building systems supplier.
   2. Steel wall and roof system including mechanical equipment roof curbs, roof penetration flashing, soffits, trim, closures, flashing, counter flashing, fasteners, accessories, gutters, downspouts, engineered and fabricated by the building system supplier.
   3. Exterior swing doors, frames and hardware fabricated and pre-assembled by the owner.
   4. Pre-engineered metal building insulation system. Refer to Section 07 21 00.

B. Refer to Section 00 31 00 for the pre-engineered metal building permit drawings for additional information on scope of work.

1.02 SUBMITTALS

A. Submit pre-engineered metal building shipping inventory Where required by local building official submit for review field test and inspections of high-strength bolting installation as outlined under FIELD TESTING AND INSPECTIONS paragraph.

B. Submit project forms, photos, and copies of shipping bill of lading as indicated herein.

1.03 QUALITY ASSURANCE

A. Comply with governing codes and regulations. Use experienced installers. Receive, handle, store, and install materials in accordance with manufacturer's instructions.

B. Standards: Comply with the provisions of the following specifications and standards, except as otherwise noted or specified.
   1. AISC- Specifications for Structural Steel Buildings
   2. AISC- MB (Category- Metal Building) Standards
   3. MBMA Low Rise Building Systems Manual
   4. AWS D1.1/D1.1M-2004 Structural Welding Code- Steel
   5. ASTM A36/A36M-12 Standard Specification for Carbon Structural Steel
   6. ASTM A325-10 Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
   7. ASTM A490-12 Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength

1.04 FIELD TESTING AND INSPECTIONS

A. Comply with Section 01 45 16 – Quality Control Procedures.

B. Owner shall provide the services of a qualified independent testing laboratory to perform periodic field testing and inspection on approximately 10% of the A325 or A490 high-strength bolting (in accordance with nationally recognized standards and per local code requirements) to determine that the requirements for bolts, nuts, and washers are installed and tightened per manufacturer's recommendations.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Refer to Section 00 31 00 for information available on the Pre-engineered metal building permit drawings.

PART 3 – EXECUTION

3.01 RECEIPT AND HANDLING OF OWNER SUPPLIED PRE-ENGINEERED METAL BUILDING SYSTEM

A. Refer to Section 00 90 00 – Project Forms for additional information.
B. The following procedures shall be required when an Owner supplied Pre-Engineered Metal Building package is to be use:
    1. Contractor's representative shall be on-site before the building unloading begins and shall remain on-site for the entire duration of the unloading process.
    2. Contractor's representative shall take photos from all angles of the load before the unloading process begins. Pay particular attention to strapping locations and existence of nose tarps. The truck line has been instructed not to remove straps or nose tarps before photos are taken.
    3. Any shipping damage shall be noted on the trucking company's bill of lading and shall be documented with photos. A Shipping Damage form shall be filled out and signed by both the Contractor's representative and the truck driver. Owner shall be notified immediately by phone of any shipping damage. The photographs, copy of the bill of lading and shipping damage form shall be forwarded to Owner's office (Attn: Real Estate) within 48 hours.
    4. Failure to comply with the above outlined procedure will result in the Contractor being held liable for the cost of any and all building damage.
C. The pre-engineered metal building package shall be inventoried and a Building Shortage form shall be filled out and forwarded to Owner (Attn: Real Estate) within 48 hours. Utilize both the manufacturer's manifest attached to the shop drawings and the manifest shipped with the building to perform the inventory. The manifest that comes with the building will be in the 'A' box. A copy of this manifest shall be forwarded to Owner along with the required forms. Failure to comply with the above outlined procedure will result in Contractor being held liable for the cost of any missing parts.
D. Should Contractor encounter manufacturing errors or deficiencies with the building, Contractor shall provide notice to Owner in writing, within 48 hours of the discovery of the error or defect. All questions regarding pre-engineered metal building, erection problems, shortages, etc. shall be communicated to Owner and NOT the manufacturer of the pre-engineered building.
E. Strict adherence to the above-itemized guidelines is required.

3.02 RECEIPT AND HANDLING OF OTHER OWNER SUPPLIED MATERIALS AND/OR EQUIPMENT

A. Refer to Section 00 90 00 – Project Forms for additional information.
B. The following procedures shall be required when other Owner supplied insulation, doors and frames, or other materials and /or equipment are to be used.
    1. Inspect and inventory all shipments upon arrival. If damage, loss and/or shortage is apparent upon delivery, do not accept the shipment until Contractor makes notation of the damages on all copies of the carrier's Bill of Lading. Have the truck driver sign the Bill of Lading acknowledging the damage, loss and/or shortage notation.
    2. The packaging and crating material should be kept intact, if at all possible, in case there is concealed damage to the material and/or equipment, which is not found until after a shipment has been signed for.

3. Notify the manufacturer of all damage, loss and/or shortage in any shipment with a copy to Owner. Refer to the Freight Claim Policy or Delivery Procedures for Freight Damage of the manufacturer of the material and/or equipment in Section 00 90 00.
4. Strict adherence to the above guidelines is required. Failure to comply with the above guidelines will result in the Contractor being held liable for the cost of any damage, loss and/or shortage to Owner supplied material and/or equipment. Owner shall have the right for reimbursement and/or credit for value of damage, loss and/or shortage to material and/or equipment.

3.03 GENERAL

A. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction and with uniform appearance. Coordinate with work of other sections.
B. Contractor shall verify that field measurements of new and/or existing building construction, foundation, floor slab, anchor bolt size, and placement are as indicated on pre-engineered metal building erection drawings.
C. Field modification of parts shall be in accordance with the best standard procedures and require the approval of the manufacturer's Engineer and be the responsibility of the Contractor.

3.02 ERECTION- FRAMING

A. Erect framing in accordance with MBMA Low Rise Building Systems Manual, Common Industry Practices.
B. The erector shall furnish temporary guys and bracing where needed for squaring, plumbing, and securing the structural frame against loads, such as wind load, acting on the exposed framing and seismic forces, as well as loads due to erection equipment and erection operations, but not including loads resulting from the performance of work by others. Bracing furnished by the manufacturer for the metal building system cannot be assumed to be adequate during erection. The temporary guys, braces, falsework and cribbing are the property of the erector, and the erector shall remove them immediately upon completion of erection.
C. Connect to new and/or existing building construction where indicated.
D. Do not field cut or alter structural members without approval of the metal building manufacturer engineer.
E. After erection, prime welds, abrasions, and surfaces not shop primed.

3.03 ERECTION- WALL AND ROOFING SYSTEMS

A. Install in accordance with manufacturer's instructions.
B. Exercise care when cutting pre-finished material to ensure cuttings do not remain on the finish surface.
C. Transition to new and/or existing building construction where indicated to form weather tight enclosure.
D. Fasten cladding system to structural supports, align, level, and plumb.

3.04 ERECTION-STEEL DOORS, FRAMES AND HARDWARE

A. Steel Doors and Frames:
   1. Comply with Section 08 11 19 – Steel Doors and Frames.
   2. Install pre-assembled swing doors and frames in accordance with manufacturer's instructions and shop drawings.
   3. Install doors and frames in compliance with SDI-100. Set frames accurately in position, plumb, aligned, and securely anchored to adjacent construction.

4. Erect fire doors and frames in compliance with NFPA 80 and requirements of authorities having jurisdiction.
5. Clearances: provide clearances of not more than 1/8 inch at jambs and heads, and not more than ¾ inch from floor or 3/16 inch from threshold. Exterior doors provide 3/8 inch undercut for accessibility threshold standards.
6. Touch-up damaged coating and leave ready to receive finish painting.

B. Door Hardware:
1. Comply with Section 08 71 00 – Door Hardware.
2. Install hardware, adjust as required to provide smooth and proper operation with secure latching or locking.

3.05 ERECTION- ACCESSORIES

A. Flashing and Sheet Metal.
1. Comply with Section 07 60 00 – Flashing and Sheet Metal.
2. Install gutters and downspouts in strict accordance with manufacturer's instructions.
3. Field break and install manufacturer's sheet metal stock as required at flashing, counter-flashing, trim, closure, and other locations where performed parts are not provided by the pre-engineered metal building manufacturer. Install prefabricated sheet metal flashings, copings and accessories as supplied by pre-engineered metal building manufacturer as indicated on drawings. Install per SMACNA standards (latest revision).

B. Joint Sealants:
1. Comply with Section 07 92 00 – Joint Sealants.
2. Install sealants in strict accordance with manufacturer's instructions.
3. Seal wall, roof, and trim accessories weathertight.

3.06 ERECTION- PRE-ENGINEERED METAL BUILDING INSULATION

A. Comply with Section 07 21 00 – Building Insulation.
1. Install pre-engineered metal building insulation per manufacturer's recommendations.
2. Install batt insulation in joints, voids, cracks, and cavities to provide continuous thermal envelope.

END OF SECTION

Routing List
_____ Owner (KE)
_____ Contractor
_____ Architect/Consultant (ESA, St. Eng, Mett, RTM)
_____ Other (City, File, Plan Room)

PROPOSAL REQUEST NO. 1

DATE: July 31, 2026

TO: Vision General Contractors of GA, LLC
802 Burnt Hickory Rd Ste. C SW
Cartersville, GA 30120

PROJECT: O'Reilly Auto Parts Store
Commerce Pkwy
Adairsville, GA (ADV)

Please submit an itemized quotation for changes in the Contract Sum and/or Time incidental to proposed modifications to the Contract Documents described herein.
THIS IS NOT A CHANGE ORDER, NOR A DIRECTION TO PROCEED WITH THE WORK DESCRIBED HEREIN.

Description (written description of the Work):
Changes due to O'Reilly request.

Drawings

Sheets C1.1, C1.2, C1.6, C2.1, C2.2, C3.1, C3.2 and L1.1 (Stephenson Engineering, Inc.)

1. Replace each sheet in its entirety with the corresponding attached sheet. Sheets C1.1, C1.2, C1.6, C2.1, C3.1, C3.2 and L1.1 reflect changed proposed pavement areas on site to light-duty and heavy-duty asphalt paving, as shown on these revised sheets. Sheet C2.2 reflects added detail for light-duty asphalt pavement (#13), and detail for heavy-duty asphalt paving (#14).

Attachments

1. Sheets C1.1, C1.2, C1.6, C2.1, C2.2, C3.1, C3.2 and L1.1, revised 7/30/26

Routing List
_____ Owner (KE)
_____ Contractor
_____ Architect/Consultant (ESA, ST-ENG, METT, RTM)
_____ Other (City, File, Plan Room)

PROPOSAL REQUEST NO. 2

DATE: September 22, 2026

TO: Vision General Contractors of GA, LLC
802 Burnt Hickory Rd Ste. C SW
Cartersville, GA 30120

PROJECT: O'Reilly Auto Parts Store
Commerce Pkwy
Adairsville, GA (ADV)

Please submit an itemized quotation for changes in the Contract Sum and/or Time incidental to proposed modifications to the Contract Documents described herein.
THIS IS NOT A CHANGE ORDER, NOR A DIRECTION TO PROCEED WITH THE WORK DESCRIBED HEREIN.

Description (written description of the Work):
Changes due to contractor coordination.

Drawings

Sheets D1.1, C1.1, and C1.2 (Stephenson Engineering, Inc.)

1. Replace each sheet in its entirety with the corresponding attached sheet. Sheet D1.1: Shows a portion of existing curb along the East Side of the building to be removed, for proposed curb and gutter to be installed at a lower elevation. Sheets C1.1 and C1.2: Shows proposed spot elevations on curb and gutter lowered. Curb, gutter and sidewalk may be monolithic concrete pour for better stability and maintenance.

Attachments

1. Sheets D1.1, C1.1, and C1.2, revised 9/21/26