Colorado State University, Facilities Management for clarification and/or the City of Ft. Collins.

1.03 STATE ELECTRICAL PERMIT

The Contractor shall obtain and pay for permits and inspection charges required by the State of Colorado Electrical Board (if required).

1.04 STATE PLUMBING AND BOILER PERMIT

Permits and agency inspection of plumbing and boiler installations are required by the State of Colorado Plumbing Board and the Boiler Inspection Section. The Contractor shall arrange and pay for such permits and inspections (if required).

2 NOT USED

3 EXECUTION

3.01 MEANS AND METHODS

The Contractor is responsible for coordinating all regulatory agency inspections including but not limited to:

1. Foundation inspection
2. General structural inspection
3. Mechanical inspections
4. Electrical inspections
5. Certificate of Occupancy inspection (or Certificate of Compliance)
6. Notification when deficiencies have been corrected

The contractor has exclusive responsibility for construction means and techniques including compliance with all regulations governing safety and health of employees and the public in the vicinity of the construction. The Contractor shall assess proposed conditions and make all necessary preparations and precautions such as shoring, bracing, scaffolding, and other temporary construction necessary to accomplish the work in full compliance with the requirements of this section.

It shall be the exclusive responsibility of the Contractor to arrange and procure any other permits, licenses, inspection, and all other documentation of compliance required by governing Federal, State, County, Municipal and special laws and regulations.

END OF SECTION 01060

The General Conditions, Supplementary General Conditions and Division 1, General Requirements are hereby made a part of this section as fully as if repeated herein.

1 GENERAL

1.01 COMPLETION AND FINAL INSPECTION

A. The Contractor shall file a written notice with the Architect/Engineer that the work in the opinion of the Contractor, is complete under the terms of the contract.
Within ten (10) days after the Contractor files written notice that the work is complete, the Architect/Engineer, the Principle Representative, and the Contractor shall make a final inspection of the project to determine whether the work has been completed in accordance with the contract documents. A final punch list shall be made by the Architect/Engineer in sufficient detail to fully outline to the Contractor:
1. Work to be completed, if any;
2. Work not in compliance with the drawings and specifications, if any;
3. Unsatisfactory work for any reason, if any.

B. The required amount of copies of the punch list will be countersigned by the Architect/Engineer, the Authorized Representative of the Principle Representative and will be transmitted by the Architect/Engineer to the Contractor and the Principle Representative.
The combined total number of punch-list items identified by the Contractor, Consultant, and Owner shall not exceed 40. If more than 40 deficiencies are identified, the inspection shall be canceled and the Contractor shall assume responsibility for payment of additional inspection visitation at that rate of $91.00 (Ninety One and 00/100 Dollars) per hour.

C. Within 10 working days of the issuance of the final punch-list, the Contractor shall have completed all punch list items. At that time, the Contractor shall advise the Consultant in writing that the work has been thoroughly inspected and is ready for final acceptance.

D. Comply with procedures stated in General Conditions of the Contract for issuance of Certificate of Occupany.

E. Owner may occupy designated portions of the Project for the purpose of installation of equipment, under provisions stated in Certificate of Substantial Completion.

F. Contractor shall submit written certification that:
1. Contract Documents have been reviewed.
2. Project has been inspected for compliance with Contract Documents.
3. Work has been completed in accordance with Contract Documents.
4. Equipment and systems have been tested in the presence of Owner's Representative and are operational.

1.02 CLOSE-OUT FORMS

A. The Architect/Engineer will complete the Closing-out Checklist and Contract Close-out forms, included at the end of this Section, and forward them to the Contractor.

B. The Contractor will complete and date all items indicated to be completed on the Closing-out Checklist and Contract Close-out forms. When all items are completed, the Contractor will sign both forms and forward them to the Architect/Engineer along with a letter stating that all punch list items are complete.

C. The Architect/Engineer verifies that all items are complete, signs both forms and sends them to the Owner.

D. The Contractor shall also submit the following prior to the final application for payment:
1. Contractor's Affidavit of Payment of Debit and Claims: AIA G706.
2. Contractor's Affidavit of Release of Liens (claims): AIA G706A, with:
   a. Consent of Surety to final payment: AIA G707
   b. Contractor's release of waivers of claims.
   c. Separate release of waivers of claims for subcontractors, suppliers and others with claim rights, against property of owner, together with list of those parties.

2) ASTM C150, Type I concrete with non-chloride accelerating admixture conforming to the requirement of ASTM C 494 Type C or E.

e. Use of chloride containing mixtures will constitute grounds for removal and replacement of concrete at no cost to Owner.

f. Concrete shall not be poured if air temperature at the time of placement is below 25 degrees F.

G. Hot weather requirements

1. Mix design, handling and placement of concrete shall be in accordance with ACI 305r except as indicated in this specification.

2. If air temperature at the time of installation is above 90 degrees F, concrete may be placed if the following conditions are met:

a. Dampen forms and subgrade prior to placing concrete.

b. Concrete delivery temperature must not exceed 90 degrees F.

c. Cover freshly placed concrete with white plastic sheeting or damp burlap between t he placement and finishing steps.

d. Use a set retarding admixture conforming to the requirement of ASTM C 494, Type B or D.

e. Place concrete as soon as possible after mixing: avoid placing delays. Avoid placing concrete during hottest hours of the day.

f. Apply curing/sealing compound immediately after finishing concrete surface.

2 PRODUCTS

2.01 MATERIALS:

A. Portland cement

1. ASTM C150, Type I except as noted in cold weather requirements above.
2. Type III high early strength cement at Contractor's option except in hot weather placement.

B. Aggregate

1. Conform to ASTM c33.
2. Aggregates shall not contain deleterious materials or materials that cause popouts such as chert, flint, coal, lignite, clay or other friable materials in excess of those allowed in table 3 of ASTM c 33.
3. Coarse aggregates: provide coarse aggregates conforming to ASTM c 33 consisting of crushed stone or washed gravel having a clean, hard, strong, durable, uncoated particles free from injurious amounts of soft or flaky pieces, alkali, organic matter, or other deleterious substances. Provide coarse aggregate with a maximum of 1-1/2 inches, five percent is to pass a No. 4 sieve.
4. Fine aggregates: provide fine aggregates conforming to ASTM c 33 consisting of natural sand having clean, hard, strong, durable, uncoated grains, free of injurious amounts of dust, lumps, soft or flaky particles, shale, alkali, organic matter, or other deleterious substances. Provide fine aggregates with a minimum of nine percent passing through a No. 100 sieve. In addition not more than 45 percent is to be retained between any two consecutive sieves.

C. Water shall be clean, potable, free of oil, acids, salts, or other deleterious matter and complying with ASTM c94

D. Steel reinforcing

1. Free from flaking rust, scale and dirt.
2. ASTM A615, grade 60, deformed
3. Wire fabric: cold drawn ASTM A185
4. Wire fabric shall be in flat sheets and shall be designated as shown on drawings.
5. Synthetic fiber: fibrillated polypropylene fibers engineered and designed for use in concrete complying with ASTM C 1116, Type III, 1/2 inch to 1 inch long. Not required in foundations if approved by Owner.

E. Admixtures

2.10 FLEXIBLE COUPLING

A. All pipe openings shall be constructed with an approved flexible wedge-type gasket conforming to ASTM D 443 capable of providing water tight joint with zero leakage around the installed pipe.

B. An approved flexible butt type sleeve shall be used for precast installations.

2.11 WATER QUALITY STRUCTURE

A. Washed Gravel

1. 12 inch to 3 inch washed rocks.

B. Riser Pipe

1. Four inch diameter ductile iron pipe

2. Cap shall be ductile iron and be threaded to fit pipe.

C. Perforated Underdrain

1. See Section 02712 - Foundation Drainage System for Perforated Underdrain.

2.12 TRENCH DRAIN GRATE

A. Neenah model No. R-4990-BX (type P) or approved equivalent.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that trench cut is ready to receive work, and excavations, dimension, and elevations are as indicated on Drawings.

B. Beginning of installation means acceptance of existing conditions.

3.02 PREPARATION

A. Hand trim excavations to required elevations. Correct over excavation with bedding material.

B. Remove large stones or other hard matter which could damage pipe or impede consistent backfilling or compaction.

3.03 INSTALLATION - PIPE

A. Install pipe and rubber gaskets in accordance with manufacturer's instruction. Seal joints watertight. Lay pipe from downstream end to upstream end with pipe bell or upstream end.

2. Release:
   a. Plastic Film: polyethylene sheet, as recommended by Manufacturer.

C. Sealants: Joint sealers shall be type specified in Section 07900. Provide in color to match colored concrete.

2.03 MIXES

A. Color Additives: Mix in accordance with manufacturer's instructions. Mix until color additives are uniformly dispersed throughout mixture and disintegrating bags, if used, have disintegrated.

B. Do not retemper mix by adding water in field.

2.05 CONCRETE COLORS

A. Concrete Color: Provide cement, sand, aggregate and color additive as required for color as selected by Architect.

B. Dosage rate of color additive shall not exceed 10 percent of weight of cementitious materials in mix.

3 EXECUTION

3.01 PREPARATION:

A. Grade Control: The lines and grades shown for concrete items shall be established and maintained by means of line and grade stakes.

B. Subgrade Preparation: The sand cushions shall not be disturbed by traffic or other operations and shall be maintained in a satisfactory condition. Subgrade shall be uniformly damp and free from standing water.

C. Impounded water and debris shall be removed from the forms and excavations before any concrete is deposited. Wood forms and sand cushions shall be wetted in advance of placing concrete.

4. Protect adjacent finished surfaces from splatters.

3.02 INSPECTION: Refer and fulfill requirements of Section 02619, Site Concrete.

3.03 INSTALLATION:

A. Formwork: Forms shall be built to the shapes and dimensions of the concrete, set to lines and grades, braced and secured to withstand the placing of the concrete and maintain their shapes and positions.

B. Expansion Joints: Expansion joint filler strips shall be spaced as shown or not over 40 feet o.c. and around all fixed objects within or abutting concrete. Concrete edges at expansion joints shall be neatly tooled. Hold expansion material down 1/2", fill with joint sealer. Expansion joint filler strips shall be 1/2" thick unless otherwise detailed on the drawings.

C. Control Joints: Formed, sawed, or tooled groove in the concrete to create a weakened plane and regulate the location of cracking shall be placed as shown on the drawings and/or at a maximum spacing at 10 feet o.c.

D. Reinforcing Steel: Shall be installed in locations shown on the drawings.

E. Concrete: Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to rehandling or flowing. The placing of concrete shall be carried on at such a rate that the concrete is at all times plastic and flows readily into the spaces between the reinforcement, inserts, forms, etc.

F. Do not add water to concrete at job site, fog or spray surface with water, or put into pumps or onto tools or brooms.

G. Do not apply Davis Colors or color additives meant for integral coloring to surface of concrete.

3.04 FIELD TESTING:

A. Concrete shall be field tested by an independent testing agency as called for in Section 02619, Site Concrete.

3.05 FINISHING OF COLORED CONCRETE

1. Patterned Stamped: Apply pattern in accordance with tool manufacturer's instructions. Touch-up pattern and finish edges with hand tools as necessary.
2. Cookie Cutter-Type Tools: Use release film.

3.06 CURING

A. Colored Concrete: Apply curing compound for colored concrete in accordance with manufacturer's instructions. Apply curing compound at consistent time for each pour to maintain close color consistency.

3.07 TOLERANCES

A. Minor variations in appearance of colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

3.08 FORM REMOVAL: Forms shall remain in place at least 12 hours after the concrete has been placed and then may be removed without injuring the concrete. Bars or heavy tools shall not be used against the concrete in removing forms. Any concrete found defective after form removal shall be satisfactorily repaired promptly by the Contractor.

END OF SECTION 02750

1. For concrete having a specified compressive strength of 5,000 psi or less: Chip and clean per Subparagraph (1). Dry pack, finish, and cure per Subparagraph (1).
2. For concrete having a specified compressive strength greater than 5,000 psi: Chip and clean per Subparagraph (1). At Contractor's option, dampen surface and apply Sikatop Non-Sag mortar, or equivalent, followed by specified finish (no curing required); or apply thin coat of the specified bonding compound followed by dry pack, finish and cure per Subparagraph (1).

F. Other equivalent repair procedures may be used subject to review and acceptance by the Architect and Structural Engineer.

3.14 FORMED SURFACE FINISHES (ACI 301, 5.3.3)

A. Formed surface finishes per ACI 301 5.3.3.5 and as follows:
1. Rough Form Finish: Provide concrete surface having the texture imparted by the form facing material used, with tie holes filled and defective areas repaired and patched and all fins and other projections exceeding 0.25" in height rubbed down or chipped off. Provide for formed concrete surfaces not exposed to view.
2. Smooth Form Finish: Produce smooth form finish by selecting form material to impart a smooth, hard, uniform texture and arranging form panels in an orderly and symmetrical pattern with a minimum of seams. Repair and patch defective areas with all fins or other projections completely removed and smoothed. Provide for formed concrete surfaces exposed to normal view or that are to be covered with a coating material directly applied to concrete in the finished building. This includes waterproofing, painting or similar systems. Fill tie holes and finish flush with and to match adjacent surfaces.

3.15 INSTALLATION OF EMBEDDED ITEMS (ACI 301 2.3.1.10)

A. Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached thereto.

B. Concrete poured on metal deck: See Division 5, structural steel specification section for specific requirements.

3.16 SCREEDS (ACI 301 2.3.1.5)

A. Continuous intermediate screed strips set prior to concrete placement are required. Set screeds and adjust as necessary to achieve proper slab elevation and thickness. For slabs poured over metal deck, place screeds along beam lines. Set screeds and adjust as necessary to achieve uniform slab thickness over the beams, allowing for beam camber and deflection. Additional slab thickness between beams due to metal deck deflection is acceptable.

B. Concrete poured on metal deck: See division 5 structural steel specification section for specific requirements.

3.17 JOINTING SLABS-ON-GRADE

A. Construction Joints: Field form construction and pour joints with keyway and depressed slab as shown on the drawings.

B. Control Joints: Construct joints by sawcutting. Make saw cut as soon as possible after placing concrete without dislodging aggregate. Saw cut to a depth of 1/4 of slab thickness.

C. Slip Joints: Separate slabs-on-grade from vertical surfaces with the specified expansion joint material unless otherwise shown on the drawings.

D. Slab Construction: Place slabs-on-grade in as large a placement as practical. Locate construction joints on column center lines or under partitions unless shown otherwise. Provide slab-on-grade control joints at intervals not to exceed 15-feet in perpendicular directions.

E. Slab Joints: All joints in slabs covered by finish floor materials such as VCT, carpet, ceramic tile, etc., will be filled with leveling compound by the flooring contractor. Fill all joints in exposed slabs-on-grade with the specified epoxy joint filler.

3.18 SLAB FINISHES (ACI 301 5.3.4)

1 GENERAL

1.01 DESCRIPTION OF THE WORK

A. Extent of architectural precast concrete work is shown on Drawings. Precast concrete is to match existing in all respects.

1.02 RELATED SPECIFICATIONS

A. Section 03300 - Cast in Place Concrete
B. Section 07900 - Sealants

1.03 SUMMARY

A. This Section includes architectural precast concrete units, plant cast.
B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 4 Section "Unit Masonry" for masonry facing, pointing mortar, and anchorages.
   2. Division 7 Section "Water Repellents" for water-repellent finish treatments.
   3. Division 7 Section "Flashing and Sheet Metal" for flashing receivers and reglets.
   4. Division 7 Section "Joint Sealants" for elastometric joint sealants and sealant backings.

1.04 PERFORMANCE REQUIREMENTS

A. Structural Performance: Engineer, fabricate, and install architectural precast concrete units to withstand design loads within limits and under conditions indicated.
B. Engineering Responsibility: Engage a fabricator who utilizes a qualified professional engineer to prepare design calculations, Shop Drawings, and other structural data for architectural precast concrete units.

1.05 SUBMITTALS

A. General: submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
B. Product Data and instructions for manufactured materials and products.
C. Shop Drawings prepared by or under the supervision of a qualified professional engineer detailing fabrication and installation of architectural precast concrete units. Indicate member locations, plans, elevations, dimensions, shapes, cross sections, and types of reinforcement, including special reinforcement. Include locations and details of hoisting points and lifting devices for handling and erection.
   1. Indicate separate face and back-up mix locations and thicknesses.
   2. Indicate welded connections by AWS standard symbols. Detail loose, cast-in, and field hardware, inserts, connections, and joints, including accessories.
   3. Indicate locations and details of anchorage devices that are to be embedded in other construction.
   4. For architectural precast concrete units indicated to comply with performance requirements, include engineering analysis data sealed and signed by the qualified professional engineer responsible for their preparation.
D. Design reference sample for initial selection, approximately 12 by 12 by 2 inches (300 by 300 by 50 mm), to illustrate quality of finishes, colors, and textures of exposed surfaces of architectural precast concrete units.
E. Samples for verification, approximately 12 by 12 by 2 inches (300 by 300 by 50 mm), to illustrate quality of finishes, colors, and textures of exposed surfaces of architectural precast concrete units.
F. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the "Quality Assurance" Article.
G. VOC compliance certificates signed by manufacturers certifying compliance of their products with regulations of authorities having jurisdiction over volatile organic compounds (VOCs).
H. Design mixes for each concrete mix.
I. Material test reports from a qualified independent testing agency evidencing compliance with requirements of the following based on comprehensive testing of current materials:
   1. Concrete materials

ACI 318 (ACI 318M).

D. Normal-Weight Concrete Face and Back-Up Mixes: Proportion mixes by either laboratory trial batch or field test data methods according to ACI 211.1, using materials to be used on the Project, to provide normal-weight concrete with the following properties:
   1. Compressive Strength (28-Day): 5000 psi (34.5 Mpa).
   2. Maximum Water-Cement Ratio at Point of Placement: 0.40.

E. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content complying with MNL-117 requirements.

F. Water Absorption: 12 to 14 percent by volume tested according to MNL-117.

G. Lightweight Concrete Back-up Mixes: Proportion mixes by either laboratory trial batch or field test data methods according to ACI 211.2, using materials to be used on the Project, to provide lightweight concrete with the following properties:
   1. Compressive Strength (28-Day): 5000 psi (34.5 Mpa).
   2. Unit Weight: Calculated equilibrium unit weight of 115 lb/cu. Ft. (1842 kg/cu. M), plus or minus 3 lb/cu, ft. (48 kg/cu. M), according to ASTM C 567.

H. Add air-entraining admixture at manufacturer's prescribed rate to result in lightweight concrete at point of placement having an air content complying with MNL-117 requirements.

I. When included in design mixes, add other admixtures to concrete mixes according to manufacturer's directions.

2.08 MOLDS

A. Accurately construct molds, mortar tight, of sufficient strength to withstand pressures due to concrete-placing operations, temperature changes, and for prestensioning and detensioning operations.

B. Maintain molds to provide completed architectural precast concrete units of shapes, lines, and dimensions indicted, within fabrication tolerances specified.

2.09 FABRICATION

A. Accurately position cast-in anchors, inserts, plates, angles, and other anchorage hardware for attachment of loose hardware and secure in place during precasting operations. Locate anchorage hardware where it does not affect the position of ;the main reinforcement or ;the placing of concrete.

B. Supply loose steel plates, clip angles, seat angles, anchors, dowels, cramps, hangers, and other hardware shapes not provided by other trades necessary for securing architectural precast concrete units to supporting and adjacent members.

C. Cast-in reglets, slots, holes, and other accessories in architectural precast concrete units to receive windows, cramps, dowels, reglets, waterstops, flashings, and other similar work as indicated. Coordinate with other trades for installation of cast-in items.

D. Cast-in openings larger than 10 inches (250 mm) in any dimension according to Shop Drawings. Other smaller holes may be field cut by trades requiring them when permitted by Architect.

E. Reinforcement: Comply with the recommendations of CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
   1. Clean reinforcement of loose rust and mill scale, earth, and other materials that reduce or destroy the bond with concrete.
   2. Accurately position, support, and secure reinforcement against displacement during concrete placement and consolidation operations. Completely conceal support devices to prevent exposure on finished surfaces. Do not use plastic-coated or uncoated metal chair supports.
   3. Place reinforcement to maintain at least 3/4 –inch (19-mm) minimum cover after finishing. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position while placing concrete. Direct wire tie ends away from finished, exposed concrete surfaces.
   4. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

1.06 RELATED WORK SPECIFIED ELSEWHERE

A. Concrete Formwork: Refer to Section 03100
B. Concrete Reinforcing: Refer to Section 03200.
C. Concrete Sealing: Refer to Section 03375.

1.07 SUBMITTALS: *(in addition see 1.05 – item b. above)*

A. Concrete Design: The concrete materials supplier shall submit design mixes for each of the types of concrete based on specified strengths and materials. Design methods shall be in accordance with "Building Code Requirements of Reinforced Concrete" (ACI 318-77).
B. Shop Drawings: Submit drawings in accordance with GENERAL REQUIREMENTS, Section 01000. Indicate complete reinforcing for each concrete member including materials, sizes, bends, dimensions, and placing details.
C. LEED Building Submittal Requirements:
    1. The CONTRACTOR and/or Subcontractor shall l submit the following costs for all work associated with the Transit Center. The three costs for labor, equipment and material shall equal the total construction cost for this Work.
        a. Material costs
    2. The CONTRACTOR shall submit information required to document Compliance with LEED goals. Information shall include:
        a. A letter of certification from the product manufacturer on the manufacturer's letterhead verifying information submitted. The letter must indicate the following:
            1. Project name
            2. LEED Credit Under Consideration:
                a. Recycled content, LEED MR 4.1 and MR 4.2.
                b. Local / regional materials, LEED MR 5.1.
            3. The detailed description of materials submitted, the location material fabrication or assembly, the quantity of the material and material costs and specific information as required by each goal.
            4. LEED Building submittal information shall be assembled into one package per Specification section.
            5. The A/E reserves the right to reject products and assemblies on the basis of incomplete or inaccurate LEED Building submittals.
    3. Mock-up 12'x12' area in field on exist. Slab shown on sheet A1.5

1.08 REFERENCE STANDARDS:

A. "Specification for Structural Concrete for Buildings", ACI 301, of the American Concrete Institute (ACI).
B. "Recommended Practices for Measuring, Mixing and Placing Concrete", ACI 304.
C. "Manual of Standard Practice for Detailing Reinforced Concrete Structures", ACI 315.
D. "Building Code Reinforcement for Reinforced Concrete", ACI 318.77.
E. "Standard Specifications for Ready-Mix Concrete", ASTM C 94-74A, of the American Society of Testing and Materials, (ASTM).
F. "Standard Specifications for Portland Cement", ASTM C 150.
G. "Standard Specifications for Concrete Aggregates", ASTM C 33.
H. "CRSI Recommended Practice for Placing Reinforcing Bars", CRSI 63, of the Concrete Reinforcing Steel Institute (CRSI).
I. "CRSI Recommended Practice for Placing Bar Supports, Specifications and Nomenclature", CRSI 65.
J. Preparation of test specimens and testing:
    1. ASTM C-31, Making and Curing Concrete-Test Specimens in the Field.
    2. ASTM C-39, Test for Compressive Strength of Cylindrical Concrete Specimens.
    3. ASTM C-42, Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
    4. ASTM C-173, Test for Air Content of Concrete - Pressure Method.
    5. ASTM C-231, Test for Air Content of Concrete - Volumetric.
    6. ASTM C-192, Making and Curing Concrete Test Specimens in the Laboratory.
    7. ASTM C-143, Method of Slump Test for Consistency of Portland Cement.

2.02 GROUT:

A. All grout shall be, transit-mixed or job-mixed, in accordance with Standard Specification for Mortar and Grout for Reinforced Masonry, ASTM C-476 and shall consist of one part portland cement, 2-1/2 parts sand and two parts pea gravel, and adequate water to produce a concrete of approximately ten (10) inches slump, and shall have a minimum ultimate compressive strength of 2,500 p.s.i. in 28 days.

2.03 MIXES:

A. Mortar Mix: Type S. Mortar, conforming to ASTM C-270 and consisting of 1 part portland cement, 1 part line putty and 6 parts sand by volume, or 1 part masonry cement and 3 parts sand by volume. Incorporate waterproofing admixture in mortar for exterior walls.

B. Mixing Mortar: Mix cementitious material and aggregate for a minimum of 5 minutes in a mechanical batch mixer. Add water in amounts compatible with convenience in using mortar. If mortar begins to stiffen from evaporation or absorption or a part of mixing water, retemper by adding to water and remix. Use mortar within 2 1/2 hours of initial mixing; do not use mortar after it has begun to set.

3 EXECUTION

3.01 INSTALLATION: Apply mortar and grout in accordance with Sandstone, Section 04470.

END OF SECTION 04100

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

F. Welding Electrodes: Comply with AWS standards.

2.07 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: SSPC-Paint 20.

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

C. Shims: Load bearing, high-density multimonomer plastic, nonleaching.

D. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.08 FABRICATION

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

1. Fabricate framing assemblies using jigs or templates.
2. Cut framing members by sawing or shearing; do not torch cut.
3. Fasten cold-formed metal framing members by welding or screw fastening, Wire tying of framing members is not permitted.
   a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
   b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.
4. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to Shop Drawings.

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

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

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

3 EXECUTION

3.01 EXAMINATION

A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.

B. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

C. Install load bearing shims or grout between the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations to ensure a uniform bearing surface on supporting concrete or masonry construction.

2.04 GLASS AND GLAZING MATERIALS

A. Tempered Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated), Type 1 (transparent flat glass), Quality-Q3. Provide products that have been tested for surface and edge compression according to ASTM C 1048 and for impact strength according to 16 CFR 1201 for Category II materials.
   1. Tinted Glass: PPG, VIRACON – Blue-Green #6. (submit 3 - 4" X 6" samples for approval)
   2. Thickness for Glass Infill Panels: **3/8 inch**, but not less than required for structural loads.
   3. Provide eased edges on all glass panels.
   4. Waterjet etch panels by other
   5. Contractor install

2.05 FASTENERS

A. General: Provide the following:
   1. Stainless-Steel Components: Type 304 stainless-steel fasteners.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.

C. Provide concealed fasteners for interconnecting railing components and for attaching railings to other work, unless exposed fasteners are the standard fastening method for railings indicated.
   1. Provide tamper-resistant flat-head machine screws for exposed fasteners, unless otherwise indicated.

D. Anchors: Provide torque-controlled expansion anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.

2.06 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.

B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm), unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

G. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
   1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   2. Obtain fusion without undercut or overlap.
   3. Remove flux immediately.
   4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

The General Conditions, Supplementary General Conditions and Division 1, General Requirements are hereby made a part of this section as fully as if repeated herein.

1 GENERAL

1.01 SCOPE: This section covers the fabrication, delivery, and installation of solid core flush wood doors with hardwood veneers, complete, including installation of finish hardware specified elsewhere.

1.02 SUBMITTALS: Submit complete shop drawings, including manufacturer's literature, in accordance with Division 1, General Requirements.

1.03 GUARANTEE: Solid core wood doors shall be guaranteed by the CONTRACTOR for a period of two (2) years from date of acceptance of the project against defects in materials and workmanship that will render the doors as unsuitable for the purpose for which they were manufactured. If any door proves defective in materials and workmanship and is unsuitable for the purpose for which it was manufactured, the door shall be replaced, including all charge for removal of the defective door and finishing of the new door, without additional cost to the Owner.

1.04 SUBMITTALS

A. LEED Building Submittal Requirements for the Main Operations and Maintenance Facility:
   1. The ARCHITECT shall submit the following costs for all Work. The three costs for labor, equipment, and materials must equal the total construction cost for the Work.
      a. Material cost
   2. The ARCHITECT shall submit the following information for each steel door and frame used:
      a. The percentage of post-consumer recycled content in the product by weight and the percentage of post-industrial recycled content in the product by weight. The two recycled content figures must be stated individually.
      b. Manufacturing location.
      c. Data from the product manufacturer on the manufacturer's letterhead verifying information submitted. The letter must indicate the following:
         1) Project name
         2) LEED credits under consideration:
            a) Materials and Resources Credit 4.1: Recycled content.
            b) Materials and Resources Credit 5.1: Local/regional material.
            c) MR7: certified wood

B. Action Submittals for all Other Building, Including LEED Buildings.
   1. Shop Drawings: Prepare specifically for this Project, indicting locations and size of each door, veneer species, type and characteristics, elevation of each kind of door, details of construction, location and extent of hardware blocking, fire ratings, factory finishing, if any, glass and glazing, and other pertinent data.
      a. For factory-premachined doors, also indicate dimensions and locations of cutouts for finish hardware and cutouts for light an louver openings.
      b. Use same reference numbers for door openings and details as Contract Drawings.

C. Information Submittals:
   1. Manufacturer's Certification of Compliance in accordance with Section 01640, MANUFACTURERES' SERVICES.
   2. Manufacturer's instructions for care and handling.
   3. Maintenance instructions for sealing door edges.

2 PRODUCTS

2.01 MFG: Weyerhauser, Haley

2.02 MATERIALS:

A. Face Veneers: Face veneers for all wood doors shall be 1/16" thick ANSI/HPMA HP 1983 premium grade, solid core birch veneer.

B. Doors:

1. Shall conform to the requirements of NWMA (National Woodwork Manufacturers Association) Industry Standards, ANSI/NWMA I.S. 1 Series and the latest revisions thereto.

2. Interior flush doors shall be 1-3/4" thick, shall conform to the requirements for PREMIUM GRADE, JOB FIT, prepared for hardware furnished under Section 08700, shall have STAVED LUMBER CORES (Glued Wood Blocks), AWI Specification SLC-5, with top and bottom rails 1-1/8" wide, 5/8" vertical stiles, and crossband.

3 EXECUTION

3.01 INSTALLATION:

A. Doors: Doors shall be hung with equal clearance at jambs and heads. Undercut for floor finishes or coverings and ventilating purposes as required. Doors shall be installed plumb and true to alignment.

B. Door grilles: Install door grilles where called for in door schedule. Install with matching hardwood stops. Grilles to be furnished by Mechanical ARCHITECT.

C. Hardware: The furnishing of Finish Hardware for this project is included in Section 08700. Hardware shall be accurately fitted with templates provided by the Hardware Supplier and in accordance with the manufacturer's written instructions. Butts, lock plates and strikes shall be neatly fitted and accurately mortised to insure smooth and quiet operation of all parts.

3.02 FINISHING: Immediately after cutting and fitting, but before hanging, doors are to be sealed and painted with two coats of clear finish, including top and bottom edges, as specified in Section 09900.

END OF SECTION 08211

Alternate Bid: approved but Base Bid must be Kawneer Co., Inc products

1. Pittco Architectural Metals, Inc.
2. YKK AP America Inc.
3. EFCO Corporation
4. ARCH Aluminum Glass Co., Inc.
5. or approved equal by Architect.

2.2 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Sheet and Plate: ASTM B 209 (ASTM B 209M).
2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221 (ASTM B 221M).
3. Extruded Structural Pipe and Tubes: ASTM B 429.
4. Structural Profiles: ASTM B 308/B 308M.
5. Welding Rods and Bare Electrodes: AWS A5.10/A5.10M.

B. Steel Reinforcement: With manufacturer's standard corrosion-resistant primer complying with SSPC-PS Guide No. 12.00 applied immediately after surface preparation and pretreatment. Select surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

1. Structural Shapes, Plates, and Bars: ASTM A 36/A 36M.
2. Cold-Rolled Sheet and Strip: ASTM A 1008/A 1008M.
3. Hot-Rolled Sheet and Strip: ASTM A 1011/A 1011M.

2.3 FRAMING SYSTEMS

A. Framing Members: Manufacturer's standard extruded-aluminum framing members of thickness required and reinforced as required to support imposed loads.

~~1.~~ Construction: Framing members are composite assemblies of two separate extruded-aluminum components permanently bonded by an elastomeric material of low thermal conductance Thermal slotted framing members are not approved.

B. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.

C. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials.

1. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
2. Reinforce members as required to receive fastener threads.
3. Use exposed fasteners with countersunk Phillips screw heads, finished to match framing system.

The General Conditions, and Supplementary General Conditions and Division 1, General Requirements are hereby made a part of this section as fully as if repeated herein.

1 GENERAL

1.01 SCOPE: This section includes the furnishing of all labor, materials, services and equipment required in conjunction with aluminum doors, entrance framing, and window framing, complete, including:

A. Aluminum Doors
B. Aluminum Frames

1.02 RELATED WORK SPECIFIED ELSEWHERE:
SEALANTS - SECTION 07900

A. Glass and Glazing - Section 08800.
B. Hardware - Section 08700.

1.03 SUBMITTALS: Furnish the following for Architect's approval:

A. Manufacturer's literature
B. Shop drawings.
C. LEED Building Submittal Requirements:
   1. The ARCHITECT and/or Subcontractor shall submit the following costs for all work associated with the Transit Center. The three costs for labor, equipment and material shall equal the total construction cost for this Work.
      a. Material costs
   2. The ARCHITECT shall submit information required to document Compliance with LEED goals. Information shall include:
      a. A letter of certification from the product manufacturer on the manufacturer's letterhead verifying information submitted. The letter must indicate the following:
         1. Project name
         2. LEED Credit Under Consideration:
            a. Recycled content, LEED MR 4.1 and MR 4.2.
            b. Local/regional materials, LEED MR 5.1.
            c. Certified Wood, LEED MR 7.
            d. Low VOC adhesives and sealants, LEED EQ 4.1
            e. Low VOC paints, LEED EQ 4.2
            f. Low VOC Composite Woods, LEED EQ 4.4.
         3. The detailed description of materials submitted, the location material fabrication or assembly, the quantity of the material and material costs and specific information as required by each goal.
   3. LEED Building submittal information shall be assembled into one package per Specification section.
   4. The A/E reserves the right to reject products and assemblies on the basis of incomplete or inaccurate LEED Building submittals.
D. Action Submittal:
   1. Shop Drawings:
      a. Shop Drawings showing construction and installation details, and electrical characteristics and control diagrams for motor operators.
      b. Identify each door with same reference as used on Drawings.
   2. Color Samples: Manufacturer's current color sample(s) for factory finished coatings.

1.04 SUBSTITUTIONS: For products of equal quality to be considered as substitution, support technical literature, samples, drawings and performance data must be submitted five (5) days prior to bid date in order to make a valid comparison of the product involved.

3. National Certified Testing Laboratories (NCTL).

D. Glazier Qualifications: Engage an experienced glazier who has completed glazing similar in material, design, and extent to that indicated for Project with a record of successful in-service performance.

E. Single-Source Responsibility for Glass: Obtain glass from one source for each product indicated below:
   1. Primary glass of each (ASTM C 1036) type and class indicated.
   2. Heat-treated glass of each (ASTM C 1048) condition indicated.
   3. Laminated glass of each (ASTM C 1172) kind indicted.
   4. Insulating glass of each (ASTM E773 & 774) construction indicted.
   5. Coated glass of each (ASTM 1376) construction indicated

E. Preconstruction Compatibility and Adhesion Testing: Submit to sealant manufacturers, samples of each glass, gasket, glazing accessory, and glass-framing member that will contact or affect glazing sealants for compatibility and adhesion testing as indicted below:
   1. Use test methods standard with sealant manufacturer to determine if priming and other specific preparation techniques are required for rapid, optimum glazing sealants adhesion to glass and glazing channel substrates.
      a. Perform tests under normal environmental conditions during installation.
   2. Investigate materials failing compatibility or adhesions tests and get sealant manufacturer's written recommendations for corrective measure, including using special primers.
   3. Testing is not required when glazing sealant manufacturer can submit required preparation data that is acceptable to Architect and is based on previous testing of current sealant products for adhesion to and compatibility with submitted glazing materials.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect glazing materials to comply with manufacturer's directions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
   1. Where insulating glass units will be exposed to substantial altitude changes, comply with insulating glass fabricators recommended for venting and sealing to avoid hermetic seal ruptures.

1.08 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with glazing when ambient and substrate temperature conditions are outside the limits permitted by glazing materials manufacturer or when glazing channel substrates are wet from rain, frost, condensation, or other causes.

1.09 WARRANTY

A. General: Warranties specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

B. Manufacturer's Warranty on Insulating Glass: Submit written warranty signed by manufacturer of insulating glass agreeing to furnish replacements for insulating glass units that deteriorate as defined in "Definitions" article, f.o.b.point of manufacture, freight allowed Project site, within specified warranty period indicted below. Warranty covers only deterioration due to normal conditions of use and not to handling, installing, protecting, and maintaining practices contrary to glass manufacturer's published instructions.
   1. Warranty Period: Manufacturer's standard but not less than 10 years after date of Manufacture.

2 PRODUCTS

3. Sound Attenuation Blankets: ASTM C665, semi-rigid mineral or glass fiber blanket without membrane, Class 25 flame-spread. Provide 1.5" mineral fiber 3.0 lb. density or full thickness rigid board, molded styrene with 'k' factor not more than 0.25.

3 EXECUTION

3.01 INSTALLATION OF METAL SUPPORT SYSTEM:

A. GENERAL

1. To the extent not otherwise indicated, comply with ASTM C754, and manufacturer's instructions. Coordinate with mechanical and electrical work. Do not attach or support metal framing to ducts, pipes, conduit.
2. Do not bridge building expansion joints with support system, frame both sides of joints with furring and other support as indicated.

B. CEILING FRAMING

1. Secure hangers to structural support by connecting directly to structure where possible, otherwise connect to inserts, clips or other anchorage devises or fasteners as indicated.
2. Space ceiling suspension main runners 4'0" o.c., and space hangers as indicated, or if not otherwise indicated, at 4'0" o.c. along runners; coordinate with structure. Level main runners to a tolerance of 0.125" in 12'-0", measured both lengthwise on each runner and transversely between parallel runners.
3. Scape ceiling furring members 24" o.c., except as otherwise indicated.
4. Wire-tie or clip furring members to main ceiling runners and to other structural supports as indicated.

C. PARTITION FRAMING:

1. Isolate stud system from transfer of structural loading to system, both horizontally and vertically. Provide slip or cushioned type joints to attain lateral support free from axial loading.
2. At partitions supported by on-grade slabs, provide bottom slip joint to accommodate 1.5" vertical movement.
3. Install runner tracks at floors, ceiling and structural walls and columns where gypsum wallboard stud systems abuts other work.
4. Extend partition stud system through acoustical ceilings to the structural support substrate above the ceiling.
5. Space studs 16" o.c., except as otherwise indicated and secure to runners at each contact surface with screws or special crimping tool.
6. Frame openings other than odor openings in same manner as required for door openings; and install framing below sills of openings to match framing required above door heads. Provide 20 gauge (0..0329") double studs at each jamb.
7. Install supplementary framing, runners, furring, blocking and bracing at opening and terminations in the work, and at locations required to support fixtures, equipment, services, heavy trim, furnishings, and similar work which cannot be adequately supported directly on gypsum board alone. Refer to Section 06100 for wood blocking.

D. FURRING:

1. Space wall furring members 24" o.c., except as otherwise indicated.
2. At exterior walls, nail 'Z' furring to walls, spaced 24: o.c. Set insulation boards and temporarily secure in place with adhesive.
3. Provide furring, framing to conceal all pipes, ducts, conduits, raceways not indicated as exposed.

3.02 GENERAL GYPSUM BOARD INSTALLATION

A. GENERAL

1. Install sound attenuation blankets in partitions as indicated, prior to gypsum board unless readily installed after board has been installed. Install sound batts above acoustical ceiling as

B. Just before final acceptance of tilework, remove paper and rinse protective coat of neutral cleaner from all tile surfaces.

END OF SECTION 09310

a. TYPE 1: #360 – Baltic Blue
b. TYPE 2: #522 – Savannah
c. TYPE 3: #103 – Beige

1. Manufacturers

A. Construction Specialties, Inc., Muncy, Pa., Mississauga, Ontario

2. Materials

A. C/S Acrovyn 3000

3. Fabrication

A. General: Fabricate wall covering to comply with requirements indicated for design, dimensions, detail, finish and sizes.

4. Accessories

A. Acrovyn Wall Covering shall be furnished as a complete packaged system, containing all primers and adhesive. Primer and adhesive materials shall be clay based and non-hazardous.

3. Total Weight Excluding Coatings: 21 oz/lin. yd.
4. Width: 54 inches (1372 mm).
5. Backing Fiber Content: Polycotton.
6. Backing Material: Osnaburg.
7. Repeat: Random.
8. Stain-Resistant Coating: DuPont; Tedlar/Teflon.

2.3 ACCESSORIES

A. Adhesive: Mildew-resistant, nonstaining, strippable adhesive, for use with specific wall covering and substrate application, as recommended in writing by wall-covering manufacturer, and with a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Primer/Sealer: Mildew-resistant primer/sealer complying with requirements in Division 9 Section "Painting (Professional Line Products)" and recommended in writing by wall-covering manufacturer for intended substrate.

C. Seam Tape: As recommended in writing by wall-covering manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for levelness, wall plumbness, maximum moisture content, and other conditions affecting performance of work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

to be removed.

3. Provide shade hardware that allows for removal and remounting of the shade bands without having to remove the shade tube, drive or operating support brackets.
4. Provide shade hardware system that allows for field adjustment of motor or replacement of any operable hardware component without requiring removal of brackets regardless of mounting position (inside or outside mount).
5. Provide shade hardware system that allows for removable regular roll fascia(s) to be mounted continuously across two or more shades without requiring exposed fasteners.
6. Provide positive mechanical engagement of drive mechanism to shade roller tube. Friction fit connections for drive mechanism to shade roller tube shall not be acceptable.
7. Use only Delrin engineered plastics by DuPont for all plastic components of shade hardware. Styrene based plastics are not acceptable: polyester or reinforced polyester shall not be acceptable.
8. BLACK OUT SHADES required for rooms 69 and N192.

C. Shade Roller and Shadecloth Attachment:
1. Use extruded aluminum shade roller tube of diameter and wall thickness required to support shade fabric without (excessive) deflection. Roller tubes less than 2.55 inches 965 mm) in diameter are not acceptable.
2. Provide for positive mechanical engagement with drive / brake mechanism.
3. Provide for positive mechanical attachment of shadeband without requiring use of adhesives, adhesive tape, staples or rivets. Two sided pressure sensitive adhesive tape is not acceptable, shade bands staples to roller tube shall not be acceptable.
4. Attach shadebands to tube such that removal and replacement of a shadeband can be accomplished without removing either the tube from the brackets or without removing shade brackets or the drive operator. Shadebands must be replaceable onsite.

D. Shade Motors and Motor Control System: Hard-wired system Shade Motors:
1. Tubular, asynchronous (nonsynchronous) motors with built-in reversible capacitor operating at 110V ac (60-Hz), single-phase, temperature Class A, thermally protected, totally enclosed, maintenance free with line voltage power supply equipped with locking disconnect plug assembly furnished with each motor.
2. Conceal shade motors inside shade roller tube.
3. Each shade motor draws a maximum current of 2.3 amps.
4. Use motors rated at the same nominal speed for all shades in the same room.
5. Total hanging weight of shadeband shall not exceed 80 percent of the rated lifting capacity of the shade motor and tube assembly.

E. Wall switches: Paddle switches "Dekora" style in a color determined by the design professional.

2.03 ACCESSORIES

A. Shade Pockets for Recessed Mounting in Acoustical, Plaster or Drywall Ceilings: Install shades in MechoShade "no-cost" pocket, open to the plenum. Provide extruded aluminum removable closure panel to provide access to shades (closure mount provided consistent with ceiling type).

2.04 FABRICATION

A. Fabricate units to completely fill existing openings from head to sill and jamb to jamb, unless specifically indicated otherwise. Comply with manufacturer's edge clearance standards and recommendations.

B. Fabricate Shadecloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided Shadecloth to roll true and straight without shifting sideways more than 1/8 inch in either direction per 8 feet of shade height due to warp distortion or weave design.

C. Provide battens in nonrailroaded shades as required by the manufacturer to assure proper tracking and uniform rolling of the shadebands, in accordance with the manufacturer's published width by height fabricate guide and standards.