

SECTION 02051

SELECTIVE DEMOLITION

PART 1 GENERAL

1.01 DESCRIPTION

- A. Most of the selective demolition work is identified in the construction documents. Additional required demolition may include, but not be limited to, trenching and boring at floor slabs and walls for utilities, removal of portions of existing ceilings, as well as, hole cutting for new conduits through walls.

1.02 JOB CONDITIONS

- A. Contractor shall inspect items identified for removal prior to commencing demolition activities. If hazardous material is located on the items for removal, contractor shall notify the Architect and Owner's Representative immediately. Removal of asbestos containing material shall be performed by the Owner.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 DEMOLITION ACTIVITIES

- A. Contractor shall provide all necessary bracing and shoring of walls and structure during demolition activities. All openings cut into existing construction shall be supported until permanent supports or braces are installed.
- B. Contractor shall provide protection of items to remain from damage during demolition activities.
- C. Demolition shall include the removal and disposal of debris or structures that obstruct, encroach upon or otherwise obstruct the work.
- D. Existing materials in area of Project identified to be relocated or returned to Owner, shall be relocated by contractor to Owner's designated location.

3.02 WASTE REMOVAL

- A. All debris and demolition material shall be removed from the site and disposed of properly at a landfill suitable for the debris.

3.03 BLASTING

- A. Blasting shall not be allowed on this project.

END OF SECTION

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete formwork.
- B. Floors and slabs on grade.
- C. Concrete foundation walls.
- D. Concrete reinforcement.
- E. Joint devices associated with concrete work.
- F. Miscellaneous concrete elements, including equipment pads, light pole bases, flagpole bases, thrust blocks, and manholes.
- G. Concrete curing.

1.02 REFERENCES

- A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International; 1991 (Reapproved 1997).
- B. ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International; 1996.
- C. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International; 1996.
- D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; 1989 (Reapproved 1997).
- E. ACI 305R - Hot Weather Concreting; American Concrete Institute International; 1991.
- F. ACI 306R - Cold Weather Concreting; American Concrete Institute International; 1988.
- G. ACI 308 - Standard Practice for Curing Concrete; American Concrete Institute International; 1992 (Reapproved 1997).
- H. ACI 318 - Building Code Requirements for Reinforced Concrete and Commentary; American Concrete Institute International; 1999.
- I. ASTM A 185 - Standard Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement; 1997.
- J. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 1996a.
- K. ASTM C 33 - Standard Specification for Concrete Aggregates; 1997.
- L. ASTM C 39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 1996.

- M. ASTM C 94 - Standard Specification for Ready-Mixed Concrete; 1998.
- N. ASTM C 150 - Standard Specification for Portland Cement; 1997a.
- O. ASTM C 171 - Standard Specification for Sheet Materials for Curing Concrete; 1997a.
- P. ASTM C 173 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 1994a.
- Q. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete; 1997.
- R. ASTM C 309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 1998a.
- S. ASTM C 618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete; 1998.
- T. ASTM C 881 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 1990.
- U. ASTM C 1059 - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 1991.
- V. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 1997.
- W. ASTM D 994 - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type); 1994.
- X. ASTM D 1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 1983 (reapproved 1991).
- Y. ASTM E 1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; 1996.
- Z. COE CRD-C 513 - COE Specifications for Rubber Waterstops; Corps of Engineers; 1974.
- AA ASTM F710

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Reinforcing Drawings, including placement drawings and bar schedules showing all shapes, sizes, and dimensions
- C. Concrete Mix Designs, including historical performance reports prepared by an Independent Testing Laboratory.
- D. Product Data: Submit manufacturers' data on manufactured products.
- E. Samples: Submit two, 6 inch long samples of waterstops and construction joint devices.
- F. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction for concrete accessories.
- G. Project Record Documents: Accurately record actual locations of embedded utilities and

components that will be concealed from view upon completion of concrete work.

- H. Record Documents: Accurately record actual locations of each truckload of material that was tested.

1.04 QUALITY ASSURANCE

- A. Pre-Construction Meeting: The concrete foreman and/or the concrete subcontractor is to attend a weekly construction progress meeting prior to the commencement of any concrete work, and review of the concrete requirements is to be an agenda item.
- B. Perform work of this section in accordance with ACI 301 and ACI 318.
 - 1. Maintain one copy of each document on site.
- C. All concrete provided is to be tested in accordance with the guidelines of Section 1400.
- D. Acquire cement from same source and aggregate from same source for entire project.
- E. Follow recommendations of ACI 305R when concreting during hot weather.
- F. Follow recommendations of ACI 306R when concreting during cold weather.
- G. Notify Architect, Structural Engineer and Owner's Representative 24-hours in advance of any concrete placement. The Architect, or it's consultants, must examine conditions prior to any concrete placement.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide a stain-free and "true" final appearance.
 - 2. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
 - 3. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches of concrete surface.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420), unless indicated otherwise on drawings.
 - 1. Deformed billet-steel bars.
 - 2. Unfinished.
- B. Welded Steel Wire Fabric: ASTM A 185, plain type.
 - 1. Mesh Size and Wire Gage: As indicated on drawings.
- C. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gage.
 - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
 - 3. Provide stainless steel, galvanized, or plastic components for placement within 1-1/2 inches of weathering surfaces.

2.03 UNDERSLAB STRATA

- A. Sand Fill Under sidewalks: 2" +/- 0.5". ASTM C33.
- B. Capillary Break below Floor Slab(s) on grade: minimum 4" thick layer of 3/4" gap graded stone (no fines). Bottom of rock layer to be equal to or higher than the outside grade. Provide varmint resistive weeps to exterior grade.

2.04 CONCRETE MATERIALS

- A. Cement: ASTM C 150, Type I - Normal Portland type.
- B. Fine and Coarse Aggregates: ASTM C 33.
- D. Water: Clean and not detrimental to concrete.

2.05 ADMIXTURES

- A. Air Entrainment Admixture: ASTM C 260. Use in all exterior concrete. Refer to Concrete / Structural Notes on the drawings.
- B. All admixtures are to be approved by the Architect and Engineer before using. These must be included in the Concrete Mix designs submitted for approval.

2.06 CONCRETE ACCESSORIES

- A. Reglets: Formed steel sheet, galvanized, with temporary filler to prevent concrete intrusion during placement.
- B. Bonding Agent: ASTM C 1059, Type II acrylic non-redispersable type.
- C. Epoxy Bonding System: ASTM C 881, type as required by project conditions.
- D. Vapor Barrier: Extremely low permeance 15 mil vapor barrier, with all laps a minimum of 6" and taped continuously with tape recommended by manufacturer. Acceptable products:
 1. Stego Wrap (15 mil) Vapor Barrier by STEGO INDUSTRIES LLC, San Juan Capistrano, CA. (877) 464-7834 www.stegoindustries.com
 2. W.R. Meadows® premoulded membrane with Plasmatic Core.
 3. Vaporguard® by Reef® Industries
 4. Equal pre-approved products. See Section 01600.
- E. Non-Shrink Grout: ASTM C 1107; premixed compound consisting of aggregate, cement, water reducing and plasticizing agents.
 1. Minimum Compressive Strength at 28 Days: 7,000 psi.
- F. Curing: Chemical Curing Compounds will not be permitted on surfaces to receive surface applied waterproofing compounds or adhesive applied floor finishes, including tile and carpet. Use water sprinklers with edge dams and curing cover to maintain wet surface for not less than seven (7) days then reduce to a damp surface for three additional days. Failure to maintain the required curing environment may result in rejection of work. Curing compounds may be used on exterior slabs only.
- G. Moisture-Retaining Cover: ASTM C 171; white curing paper or white burlap-polyethylene sheet.
- H. Liquid Curing Compound: ASTM C 309, Type 1, clear or translucent. EXTERIOR CONCRETE ONLY.

2.07 JOINT DEVICES AND MATERIALS

- A. Waterstops: Rubber type, COE CRD-C 513. Provide joint materials manufactured by Greenstreak or equal.
- B. Joint Filler: Nonextruding, resilient asphalt impregnated fiberboard or felt, 1/2 inch thick and full depth of slab less 1/2 inch.
- C. Construction Joint Devices: Integral galvanized steel or extruded plastic, 3.5 inch thick, or as shown on the drawings, formed to tongue and groove profile, with removable top strip exposing sealant trough, knockout holes spaced at 6 inches, ribbed steel spikes with tongue to fit top screed edge (must be removed prior to next pour). Site-built joint device in combination with tooled edges as detailed are acceptable.
- D. Smooth Dowels: to be size and type as shown on drawings.
- E. Sealant and Primer: As specified in Section 07900.

2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Normal Weight Concrete:
 - 1. Compressive Strength, when tested in accordance with ASTM C 39 at 28 days: As indicated on drawings. If not noted, allow for 4,000psi in bid, but confirm required strength during the submittal process.
 - 2. Water-Cement Ratio: Maximum 40 percent by weight.
 - 3. Total Air Content: 5 percent, per ASTM C 173 -- Exterior exposed concrete only.
 - 4. Maximum Slump: 4 inches.
 - 5. Maximum Aggregate Size: .75 inch.
 - 6. Use accelerating admixtures in cold weather only when approved by Architect. Use of admixtures will not relax cold weather placement requirements.
 - 7. The Use of calcium chloride shall not be allowed.
 - 8. Use set retarding admixtures during hot weather when approved by Architect.
 - 9. Use superplasticizer for pumped placements when approved by the Architect.

2.09 MIXING

- A. Transit Mixers: Comply with ASTM C 94.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Earth forms are permitted for continuous and spot footings only.
- B. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301. All forms shall conform to the shape, lines, and dimensions of members as shown on drawings, and shall be substantially free from surface defects. All concrete shall be formed, except flat areas to be finished, unless shown or noted otherwise on the drawings. Construct forms sufficiently tight to prevent leakage of water.
- C. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to over-stressing by construction loads.

- D. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- E. Align joints and make watertight. Keep form joints to a minimum.
- F. Obtain approval before framing openings in structural members which are not indicated on the Drawings.
- G. Apply form release agent on formwork in accordance with manufacturer's recommendations. Apply prior to placement of reinforcing steel, anchoring devices and embedded items.
- H. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings which are effected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.
- I. Provide formed openings where required for items to be embedded in passing through concrete work.
- J. Locate and set in place items which will be cast directly into concrete.
- K. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.
- L. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.
- M. Loosen forms carefully. do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- N. Store removed forms in manner that surfaces to be in contact with fresh concrete will not be damaged. Discard damaged forms.
- O. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
- P. For floor slabs on grade, first place a 4" layer of 3/4" Class A (no fines) rock, thoroughly consolidated with a plate compactor.
- Q. For sidewalks on grade, first place a 2" leveling course of well consolidated (plate compactor) sand.
- R. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.

3.03 INSTALLING REINFORCEMENT

- A. Fabricate concrete reinforcing in accordance with CRSI Manual of Practice, ACI 318.
- B. Locate reinforcing splices not indicated on drawings, at point of minimum stress. Review location of splices with Architect/Engineer.
- C. Contractor shall include in his base bid the in-place cost of one (1) ton of reinforcing steel in addition to all other steel shown on the drawings or called for in the specifications.
- D. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

- E. Place, support and secure reinforcement against displacement. Do not deviate from required position. Accommodate placement of formed openings.
- F. Install wire fabric in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Place concrete for floor slabs in accordance with ACI 302.1R.
- C. Notify Architect, Structural Engineer and Owner's Representative not less than 24 hours prior to commencement of placement operations.
- D. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.
- E. Concrete shall be conveyed from mixer to the place of final deposit by methods which will prevent segregation or loss of materials. Chutes shall be metal and have maximum slope of 4 to 12. Chutes greater than 20 feet long are not permitted.
- F. The concreting shall be carried on at such a rate that concrete is plastic at all times and flows readily into spaces between bars. Concrete temperature shall be 60-80 degrees Fahrenheit. No concrete that is partially hardened or has been contaminated by foreign materials shall be deposited, nor shall re-tempered concrete be used.
- G. Separate slabs on grade from vertical surfaces with joint filler.
- H. Each batch shall begin at a bulkhead, edge form, or into the edge of the previously placed concrete to avoid stone pockets and segregation.
- I. Do not interrupt successive placement; do not permit cold joints to occur. If there is a delay in casting, the concrete placed after the delay shall be thoroughly spaded and consolidated at the edge of that previously place.
- J. Bring concrete to the correct level with a straight edge and strike off. Use floats to smooth the surface, leaving the concrete free of humps or hollows.
- K. Place concrete continuously between predetermined expansion, control, and construction joints.
- L. Place floor slabs in joint pattern indicated on drawings.
- M. Type and use of vibrator shall be in conformance with ACI 309, "Recommended Practice for Consolidation of Concrete", lower frequency vibrators may be used with "flowing" concrete. Vibrators shall be inserted in accordance with manufacturer's instructions.
- N. Screed slabs on grade level, maintaining surface flatness of maximum of 1/8" in 10 ft.
- O. Minimum of two (2) hours are required between placing columns and floors.
- P. Install joint devices in accordance with manufacturer's instructions.
- Q. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

- R. Saw cut joints within 12 hours after placing. Use 3/16 inch thick blade, cut into 1/4 depth of slab thickness.

3.05 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
 - 1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
- D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
 - 1. Steel trowel surfaces that will receive carpeting, resilient flooring, seamless flooring, thin set quarry tile, and thin set ceramic tile.
 - 2. Steel trowel surfaces that will be left exposed.
 - 3. After concrete has been properly placed, struck off, and darried or bullfloated, it shall not be worked until ready for floating. Lapse time between darrying and power floating may vary from 2 to 8 hours depending on weather conditions, concrete temperature, and concrete mixture. Power floating shall begin when the water sheen has disappeared, and/or mix has stiffened sufficiently that the weight of a man standing on it leaves only a slight imprint on the surface. If two power floating operations are necessary to bring surface to desired state, concrete shall be allowed to stiffen or become harder before beginning second floating operation.
 - 4. Both power and hand troweling shall be required. Begin power troweling as soon as little or no cement paste clings to blades. Continue troweling until surface is dense, smooth, and free of all minor blemishes, such as trowel marks.
 - 5. Final hand troweling shall be required to remove slight imperfections left by troweling machines and to bring surface to a dense, smooth polished finish. continue hand troweling until a ringing sound is heard as the trowel passes over surface.
 - 6. Steps and platforms receive a light broom finish following sufficient troweling to seal the surface and remove all minor blemishes, such as trowel marks.
 - 7. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:100 nominal.

3.06 CONTROL JOINTS

- A. Control joints shall be located as shown on drawings or per approved alternative layout.
- B. Saw cut joints within 12 hours after placing. Use 3/16 inch thick blade.
- C. Perform sawing of control joints with approved mechanical saw in satisfactory working condition, adequately powered to cut rapidly to the depth and width shown on drawings. Saws shall be water cooled and have suitable guides to insure straight line cutting.
- D. Begin sawing as soon as the concrete hardens sufficiently to prevent undue raveling of the edges. Succeeding joints shall be sawed consecutively from beginning to end of the days pour and sawed soon enough to prevent uncontrolled cracking.
- E. Remove residue by flushing with water and cleaning with air jet prior to placing joint filler.

3.07 CURING AND PROTECTION

- A. Comply with requirements of ACI 308. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 - 1. Normal concrete: Not less than 7 days.
- C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
- D. Surfaces Not in Contact with Forms:
 - 1. Start initial curing as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than seven (7) days by water ponding, water-saturated sand, water-fog spray, or saturated burlap. Where curing compound is used, apply at the rate of 400 square feet per gallon in accordance with recommendations of the manufacturer and shall not be used on any surface against which additional concrete or other cementitious finishing materials are to be bonded.
 - 2. Begin final curing after initial curing but before surface is dry.
 - a. Moisture-retaining cover: Seal in place with waterproof tape or adhesive. Do Not Use Paper products.
 - b. Curing compound (DO NOT USE on floors requiring Para-Seal): Use on exterior concrete ONLY. Apply in two coats at right angles, using application rate recommended by manufacturer.

3.08 JOINT SEALANTS

- A. Paving: Vulkem 202 or Sonneborn "Sonometric 2"
- B. Sidewalks: Soft joints, Pecora Synthacalk GC9.
- C. Interior Floor Slabs:
 - 1. Exposed: Slabs subject to motorized vehicular traffic; semi-flexible epoxy "Masterfill" CJ or as approved by the Architect. Joints shall be refilled if cracking of sealant occurs.
 - 2. Exposed slabs not subjected to vehicular traffic: "Pecora" Synthacalk GC9 or as approved by the Architect.
 - 3. Slabs beneath floor finishes: Hard filler "Floorstone" or as approved by the Architect.

3.09 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01400.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to Architect for review and approval prior to commencement of concrete operations.
- D. Compressive Strength Tests: ASTM C 39. For each test, mold and cure four concrete test cylinders. Obtain test samples for every 25 cu yd or less of each class of concrete placed.
- E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- F. Perform one slump test for each set of test cylinders taken.

3.10 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to Architect, Owner's Representative, and General Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by the Contractor when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

END OF SECTION

SECTION 05400
LIGHTGAUGE METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Load Bearing Formed Steel Stud Framing.
- B. Non-Bearing Formed Steel Stud Framing on Exterior Wall.
- C. Formed Steel Joist Framing and Bridging.
- D. Any other lightgauge framing system noted on the structural Contract Drawings.

1.02 RELATED SECTIONS

- A. Section 09260 – Gypsum Board Assemblies.

1.03 REFERENCES

- A. American Iron and Steel Institute (AISI):
 - 1. Specification for the Design of Cold Formed Steel Structural Members.
- B. American National Standards Institute (ANSI):
 - 1. ANSI Z49.1, Safety in Welding and Cutting.
- C. American Society of Testing and Materials (ASTM):
 - 1. ASTM A653, Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Coated (Galvannealed) by the Hot-Dip Process.
 - 2. ASTM C645, Standard Specification for Non-Load Bearing (Transverse and Axial) Steel Studs, Runners (Track) and Rigid Furring (Hat) Channels.
 - 3. ASTM C754, Standard Specification for Installation of Steel Framing Members to Receive Screw Attached Gypsum Wallboard, Backing Board, or Water Resistant Backing Board.
 - 4. ASTM C955, Standard Specification for Load Bearing Steel Studs, Runners (Track) and Bracing and Bridging for Screw Application of Gypsum Board and Metal Plaster Bases.
- D. American Welding Society (AWS):
 - 1. AWS D1.3, Structural Welding Code – Sheet Steel.
- E. Steel Structures Painting Council (SSPC):
 - 1. Painting Manual.

1.04 SUBMITTALS

- A. Shop Drawings:

1. Indicate component details; bearing; anchorage; type, size, and location of connections; and accessories or items required of related work.
 2. Indicate stud and ceiling joist layout and sizes.
 3. Describe method for securing studs to tracks and for screwed, bolted, or welded framing connections.
- B. Section Properties: Submit section properties, material strengths and ASTM specification compliance verification for each size member, strap or brace of each gauge used.
- C. Connections: Submit manufacturer's data for each type of manufactured connection, screw, or fastener verifying conformance with Contract Drawings.

1.05 QUALITY ASSURANCE

- A. Manufacturing Standard: All lightgauge framing shall be equivalent to Dietrich Industries, Inc. published standards and installation recommendations, which will be used as a quality standard reference in the event the Contractor furnishes materials in which the submitted manufacturer does not have a published installation manual.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Lightgauge Steel Framing: Provide Dietrich Industries Inc. lightgauge structural framing system; including studs, joists, track, bridging and bracing members shown, scheduled, and as required for a complete installation.
- B. Steel studs, joists, track, clips, stiffeners, fasteners, and accessories shall be of the type, size, gauge, and spacing indicated on the Contract Drawings. Or if not indicated, as recommended by the manufacturer for the design loads and applications indicated.
- C. All studs, joists, track, clips, stiffeners, and accessories shall be formed from hot dipped galvanized steel corresponding to the requirements of ASTM A653, with a G60 coating unless noted otherwise on Contract Drawings, and a minimum yield strength of 33 ksi (33,000 psi) with the exception that 16 gauge and heavier studs and joists shall have a minimum yield strength of 50 ksi (50,000 psi).
- D. Touch-up primer for galvanized surfaces shall conform to SSPC Paint 20 T ype I Inorganic.
- E. Substitutions: All proposed material or connection substitutions will require review and approval of Engineer. Engineer will be compensated at Contractor's cost, \$95/hour with a minimum \$285 fee. This compensation will be on a per submittal basis. The following information will be provided in each Submittal:
1. Structural Calculations:
 - a. Submit structural calculations prepared by the manufacturer. Calculation shall bear the seal of an engineer registered in the state in which the project is located.
 - b. Calculations shall include a comparative analysis between the specified and proposed members, connections, or systems, demonstrating equal or better strength and performance.
 - c. Manufacturer's allowable span vs. load tables.

2. Section Properties: Submit section properties, material strengths and ASTM specifications for substitutions.
 3. Connections: Submit manufacturer's data for each type of manufactured connection, screw, or fastener proposed.
- F. Any substitutions must be approved in writing by the Engineer.

2.02 FABRICATION

- A. Do not begin fabrication of work prior to receiving approval of shop drawings and calculations. Fabricate per manufacturer's current printed instructions.
- B. Shop Fabrication: Fabricate items in shop to greatest extent possible so as to minimize field assembly of units at project site. Clearly mark units for assembly and coordinated installation.
- C. Framing components shall be cut squarely or at an angle to fit squarely against abutting members. Member shall be held firmly in position until properly fastened.

PART 3 EXECUTION

3.01 INSTALLATION

- A. General: Install all metal framing systems, steel studs and accessories in accordance with Contract Drawings and manufacturer's current printed instructions.
- B. Securely anchor track to floor and overhead structure or members. Abutting pieces of track shall be securely anchored to a common structural element, or they shall be butt welded or spliced together.
- C. Attachments of exterior metal framing components shall be as indicated or if not indicated, as recommended by the manufacturer for the design loads and applications indicated. Dissimilar structural components shall be attached by welding, screw attachment, or bolting. Wire tying of framing components in structural applications shall not be permitted.
- D. Allow for structural movement where indicated by providing connections designed specifically for that purpose; including vertical slide clips or deep leg deflection tracks. For studs attached to the bottom of structure, allow space between studs and top deep leg deflection track and brace wall as indicated or as recommended by the manufacturer.
- E. Splices in load bearing studs, joists or rafters shall not be permitted. Axially loaded studs shall have full bearing against inside track web, prior to stud and track attachment.
- F. At a minimum, 20 gauge studs shall be used adjacent to all interior door frames, and at walls to receive ceramic tile finish.
- G. Wall stud bridging shall be attached in a manner to prevent stud rotation. Bridging rows shall be spaced according to manufacturer's Load Table criteria or written recommendations. Gypsum wallboard shall not be considered as bridging.
- H. Provide web stiffeners at all points of applied concentrated loads and at all reaction points.
- I. Joist bridging shall be provided according to manufacturer's Joist Load Tables criteria or written recommendations.

- J. All structural joist and studs shall have a minimum of 10 inches of unpunched steel at bearing or support points.
- K. Touch-up field welds and damaged galvanized surfaces with primer.

3.02 METAL STUD MAXIMUM SPAN SCHEDULES

- A. The following schedules are based on Dietrich Industry, Inc. span tables and are given as a schedule of minimum stud sizes which will be accepted. In the table below, for studs 2-1/2"-25 gauge through 6"-20 gauge the maximum heights listed are for Drywall Studs. For 8"-20 gauge studs and 2 1/2" 18 gauge through 8"-14 gauge studs, the maximum heights listed are for CSJ studs. The most stringent requirements shall govern in conflicts between the schedule and manufacturer's metal stud maximum span table submittals.
- B. INTERIOR METAL STUDS NON LOAD BEARING WITH GYPSUM BOARD AND BRACING ON BOTH SIDES MAXIMUM DEFLECTION OF 1/240 WITH 5 P.S.F. AIR PRESSURE.

MAXIMUM HEIGHT <u>STUD SIZE</u>	<u>GAUGE</u>	MAXIMUM HEIGHT <u>at 16" oc</u>	<u>at 12" oc</u>
2-1/2"	25	10'-1"	11'-1"
3-5/8"	25	13'-4"	14'-8"
4"	25	14'-6"	15'-10"
2-1/2"	22	11'-7"	12'-8"
3-5/8"	22	15'-6"	17'-0"
4"	22	16'-8"	18'-4"
6"	22	23'-0"	25'-3"
2-1/2"	20	12'-3"	13'-6"
3-5/8"	20	16'-6"	18'-1"
4"	20	17'-9"	19'-7"
6"	20	24'-6"	27'-1"
8"	20	32'-10"	36'-2"
2-1/2"	18	14'-4"	15'-10"
3-1/2"	18	18'-7"	20'-6"
3-5/8"	18	19'-1"	21'-0"
6"	18	28'-4"	31'-2"
8"	18	35'-9"	39'-4"
2-1/2"	16	15'-5"	16'-11"
3-1/2"	16	19'-11"	21'-11"
3-5/8"	16	20'-6"	22'-6"
6"	16	30'-5"	33'-6"
8"	16	38'-4"	42'-3"
2-1/2"	14	16'-5"	18'-1"
3-1/2"	14	21'-4"	23'-5"
3-5/8"	14	21'-11"	24'-1"
6"	14	32'-7"	35'-11"
8"	14	41'-2"	45'-3"

NOTE: Interior walls as described above are not to be exposed to exterior wind loads and shall not be installed until building is enclosed.

- C. 20 gauge or heavier studs shall be used adjacent to all interior door frames, and at walls to receive ceramic tile finish.
- D. Exterior metal studs shall be of size, gauge, and type shown on the structural drawings.

END OF SECTION

SECTION 06100

ROUGH CARPENTRY

PART 1 GENERAL

1.01 DESCRIPTION

- A. Includes wood framing and blocking, as well as, concealed wood backing for wall mounted items.

1.02 REFERENCES

- A. AFPA – American Forest and Paper Association
- B. FS TT-W-571 – Wood Preservation: Treating Practices
- C. PS 1 – Construction and Industrial Plywood.
- D. PS 20 – American Softwood Lumber Standard.

1.03 DELIVERY AND STORAGE

- A. Materials shall be delivered to the site in undamaged condition, stored off ground in fully covered, well-ventilated areas, and protected from extreme changes in temperature and humidity.

PART 2 PRODUCTS

2.01 GENERAL LUMBER

- A. Comply with PS 20 and applicable grading rules of inspection in accordance with AFPA Grading Rules.
- B. Provide seasoned lumber with 19 percent moisture content at time of dressing and shipment, for sizes 2" or less in thickness.
- C. Provide lumber with 15 percent moisture content at time of dressing and shipment, for sizes 2" or less in thickness.

2.02 PANELS

- A. For types of concealed applications indicated below, provide wood panel products complying with PS 1 where applicable, and with "APA Performance Standard and Policies for Structural Use Panels" (Form E445) for requirements indicated.
- B. For following types of applications where exposure durability classification or span rating is not given, provide EXPOSURE 1 and rating required to suit support spacing indicated.
- C. Plywood Backing for Electrical and Telephone Equipment: APA C-D PLUGGED INT with exterior glue, fire-retardant treated, 1/2" thick except as otherwise indicated.

PART 3 EXECUTION

3.01 INSTALLATION:

- A. ROUGH CARPENTRY
 - 1. Install rough carpentry work to comply with recommendations of American Plywood Association (APA), unless otherwise indicated. For sheathing, underlayment and other products not covered in above standards, comply with recommendations of manufacturer of product involved for use intended. Set carpentry work to required levels and lines, with members plumb and true and cut to fit.

B. ATTACHMENTS

1. Securely attach carpentry work to substrates and supporting members using fasteners of size that will not penetrate members where opposite side will be exposed to view or receive finish materials. Install fasteners without splitting wood; fasten panel products to allow for expansion at joints unless otherwise indicated.

END OF SECTION

SECTION 06200

FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Solid surfacing window sills
- B. Wood Moldings
- C. Hardware and attachment accessories.

1.02 RELATED SECTIONS

- A. Section 06100 – Rough Carpentry
- B. Section 06400 – Architectural Woodwork
- C. Section 09901 – Paints and Coatings – Existing Schools

1.03 REFERENCES

- A. AWI/AWMAC (QSI) – Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2003

1.04 SUBMITTALS

- A. See Section 01300 – administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details accessories, to a minimum scale of 1-1/2 inch to 1 ft.
- C. Samples:
 - 1. Solid Surface Material: Two 3" x 3" min. of each color specified. One sample 6-inch length showing the edge detail.
 - 2. Wood Moldings: two 18-inch long samples of each shape as specified in the wood type.

1.05 QUALITY ASSURANCE

- A. Protect work in accordance with AWI Architectural Woodwork quality Standards illustrated Custom Grade.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Protect work from moisture damage

1.07 PROJECT CONDITIONS

- A. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

PART 2 PRODUCTS

2.01 SOLID SURFACING SILL MATERIAL

- A. Polyester/acrylic type with integral coloring
 - 1. Surface finish" Polished
 - 2. Color: As indicated on the drawings.
 - 3. Thickness 1/2" and edging as indicated on drawing. If not on drawing, provide options for approval.

2.02 LUMBER MATERIALS

- A. Lumber
 - 1. Red oak species plain sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for transparent finish.
 - 2. Wood species to match existing wood species in renovation projects. Verify species with architect prior to fabrication.

2.03 ADHESIVE

- A. Adhesive: Type recommended by AWI to suit application.

2.04 FABRICATION

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work

3.02 INSTALLATION

- A. Set and secure materials and components in place, plumb and level.

3.03 SCHEDULE

- A. Interior:
 - 1. Window Sills: solid surfacing.
 - 2. Moldings and Miscellaneous Trim: Verify with drawings; prepare for stain finish.

END OF SECTION

SECTION 06400
ARCHITECTURAL
WOODWORK

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes special fabricated cabinet units, countertops, cabinet hardware, prefinished surfaces, and preparation for installing utilities.
- B. Related Sections:
 - 1. Section 06100 – Rough Carpentry.
 - 2. Section 06200 – Finish Carpentry.
 - 3. Divisions 15 and 16 – Mechanical and Electrical: Rough-in and connection.

1.2 REFERENCES

- A. ANSI A135.4 – Basic Hardboard.
- B. ANSI A208.1 – Mat Formed Wood Particleboard.
- C. AWI (Architectural Woodwork Institute) – Quality Standards.
- D. BHMA A156.9 – Cabinet Hardware.
- E. FS MMM-A-130 – Adhesive, Contact.
- F. NEMA (National Electric Manufacturers Association) LD3 – High Pressure Decorative Laminates.
- G. PS 1 – Construction and Industrial Plywood.
- H. PS 20 – American Softwood Lumber Standard.
- I. WIC (Woodwork Institute of California) – Manual of Millwork.
- J. APA (American Plywood Association).

1.3 SUBMITTALS FOR REVIEW

- A. Section 01300 – Administrative Requirements: Procedures for submittals.
- B. Shop Drawings: Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location and schedule of finishes.
- C. Product Data: Provide data for hardware accessories and edging.
- D. Samples: Submit two: 1 1/2 x 2 1/2 inch size samples, illustrating each cabinet finish; 2 inch long size samples, illustrating each edging strip.
- E. Samples: Submit two samples of drawer pulls, hinges and closures, illustrating hardware finish.

1.4 QUALITY ASSURANCE

- A. Perform work in accordance with AWI Premium Quality.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with a minimum three (3) years of experience.

1.5 MOCKUP

- A. Arrange meeting with Owner/TPS where units will be examined to ascertain quality and conformity to AWI standards. These units shall establish a minimum standard of quality for this work.
- B. Mockup may be used as part of the Work.

1.6 DELIVERY, STORAGE AND PROTECTION

- A. Delivery: Materials shall be delivered to the site by the casework fabricator in undamaged dry condition.
- B. Protection: Protect units by covering completed work with 4-mil polyethylene film protective enclosure, applied in a manner which will allow easy removal and without damage to woodwork or adjoining work. Architectural woodwork contractor shall remove cover immediately before date of substantial completion.

PART 2 PRODUCTS

2.1 MATERIALS

- A. **Laminate Materials:**
 - 1. High Pressure Laminate (HPL): AWI 0.045 inch (1.1 mm) General Purpose quality; color, pattern and surface texture as scheduled.
 - 2. Melamine: General Purpose quality; color, pattern and surface texture as scheduled.
 - 3. Manufacturers:
 - a. Formica.
 - b. Wilsonart.
 - 4. **Premium laminate for reception desk and library circulation desk. Standard laminate at all other millwork.**
- B. **Epoxy Resin:** Chemical and abrasion resistant, durable top of 1 inch thick cast material of epoxy resins and inert products.
- C. **Wood MDF board:** PS 1; AWI standard, of grade to suit application; thickness as noted below by application.
- D. **Hardboard:** Pressed wood fiber with resin binder, standard grade, 1/4 inch (6 mm) thick, smooth on one side, located as noted below by application.
- E. **Hardwood Plywood:** PS 51; graded in accordance with AWI core materials of lumber, type of glue recommended for application; face veneer and cuts as noted below by application.
- F. **Backs:**
 - 1. Exposed finished backs shall be 3/4 inch thick with HPL on inside surface.
 - 2. Unexposed backs shall be **1/2 inch** thick MDF board core with melamine laminate on inside surface for upper and lower cabinets. Use 3/4 inch thick on full height cabinets.
- G. **Ends:** Finished ends shall be 3/4 inch thick with melamine laminate on inside surface. Exposed edges to be banded with PVC.
- H. **Partitions:** Partitions shall be 3/4 inch thick with melamine laminate on inside surface.
- I. **Bottoms and Bases:**
 - 1. Bottoms shall be 3/4 inch thick MDF board core. Interior surfaced with melamine laminate and exposed surfaced with HPL on the top side.
 - 2. Base, storage and shelving units shall have a separate framed and reinforced base attached to the bottom of the cabinets forming a 4 inch high base that shall be recessed 2 inches in the front (unless noted otherwise on the drawings).

J. **Shelves:**

1. All shelves shall be **1 inch thick** MDF board core.
2. Interior shelves shall be surfaced with white melamine laminate surface on two sides. All sides to be banded with white melamine laminate.
3. Exposed shelves shall be surfaced with HPL on two sides with PVC edge banding.
4. **Adjustable shelf edges shall be banded with 3mm PVC on front and back edges and with white melamine on both side edges.**
5. All adjustable shelves to be on metal shelf pegs inserted into shop drilled holes at 2 inches on center vertically.

K. **Countertops:**

1. HPL covered countertops shall be **2 layers of 5/8" MDF** with plastic laminate surface on one side. Backsplashes as indicated on drawings, laminate to match countertop w/ 3mm PVC banding on tops and ends to match plastic laminate. Include end curb where top abuts end wall. **Countertops at wet areas are to use moisture resistant MDF.**
2. Face edge of countertops shall be banded with 3mm PVC (hot mill glued) to match plastic laminate tops. Colors to match plastic laminate color shall be selected by TPS.

L. **Drawers:**

1. Drawer fronts shall be 3/4 inch thick with HPL exterior surface and white melamine interior surface.
2. Exposed edges to be banded with 3mm PVC (hot mill glued), color to match plastic laminate.
3. **Drawer boxes shall be 5/8" MDF board core surfaced with white melamine laminate.**

M. **Doors:**

1. Doors shall be 3/4 inch thick with HPL exterior surface and white melamine interior surface.
2. Exposed edges shall be banded with 3mm PVC (hot mill glued).

N. **Hardware:**

1. Adjustable shelf hardware shall be as specified above.
2. Pulls: Drawer and Door pulls shall be 4 inch "U" shaped, wire loop type pull with brushed nickel satin finish.
3. Hinges: Hinges shall be Blum concealed type, 125 degree opening. Provide four (4) hinges on full-height doors.
4. Drawer slides: Drawer slides shall be side-mount Repon type, full extension, metal ball bearing, 100 lb.
5. Locks: Disc tumbler cam locks. **All locks in individual rooms to be keyed alike.**

O. **Accessories:**

1. Adhesive: Type recommended by laminate manufacturer to suite application.
2. Counter tops, Ends, and Partition Edging: Semi-rigid PVC Vinyl Edge Trim; 3mm thickness; extruded convex shaped; smooth finish; of width to match component thickness/height; color to match adjacent surface.
3. Door and Drawer Edging: PVC Vinyl Edge; 3mm inch thick; smooth finish; of width to match component thickness; color to match adjacent surface.
4. Fasteners: Size and type to suite application.
5. Wire ways: Provide 3 inch diameter plastic wire ways at 48" o.c. at work surfaces; color shall be black.

P. **Finish Wood:** Shall be as identified on drawings.

- Q. **Epoxy Resin Sinks:**
1. All sinks indicated in epoxy resin countertops shall be constructed of similar epoxy resin material and shall be "lipped" in design.
 2. All sinks in Handicap Sink Units and Prep Rooms shall be ADA compliant with minimum inside dimensions of 25" (side-to-side) x 15" (front-to-back) x 5" (deep).
 3. All sinks in Pods and Teacher Stations shall have a minimum inside dimension of 8" (side-to-side) x 12" (front-to-back) x 6" (deep).
- R. **Epoxy Resin Countertops:**
1. Epoxy resin countertops to be 1 inch thick, cast flat, with a uniform non-glare black matte finish. Backsplashes of heights as indicated on drawings, butt- jointed and cemented to top. Include end curb where tops abut end walls.
- S. **Solid Surface Countertops:**
1. Solid surface countertops to be 1/2 inch nominal thickness. Backsplashes of heights as indicated on drawings, butt-jointed and cemented to top. Include end curb where tops abut end walls.
 2. Tensile Strength = 3,400 psi
 3. Hardness (Barcol Impressor) = 60
 4. Fungi and Bacterial Resistant
 5. Boiling Water and High Temperature Resistant
 6. Methacrylate-based adhesive for chemically bonding seams
 7. Form joint seams between solid surfacing components so joints are inconspicuous in appearance and without voids.
 8. Manufacturer:
 - a. Corian, Price Group C
 - b. Wilsonart Quartz
- T. **Window Sills:**
1. Solid surface window sills to be 1/2 inch nominal thickness, butt-jointed and cemented to top, with 1" apron beneath.
 2. Tensile Strength = 3,400 psi
 3. Hardness (Barcol Impressor) = 60
 4. Fungi and Bacterial Resistant
 5. Boiling Water and High Temperature Resistant
 6. Methacrylate-based adhesive for chemically bonding seams
 7. Form joint seams between solid surfacing components so joints are inconspicuous in appearance and without void.
 8. Manufacturer: Corian

2.2 FABRICATION

- A. Shop assemble casework in one unit easily handled and to permit passage through building openings.
- B. Fit shelves, doors and exposed edges to be banded with PVC trim.
- C. Cap exposed plastic laminate finish edges with material of same finish and pattern.
- D. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners.
- E. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
- F. Glue and fasten backsplash with screws to countertop at a minimum of 12 inches on center.
- G. Millwork contractor to provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes, fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal cut edges.
- H. **Millwork shall be custom fabricated as identified on drawings. Manufacturer's standard millwork may only be substituted if it matches the sizes, configurations and styles indicated on drawings. Any substitutions shall be approved by TPS prior to bidding. If not approved prior to bidding, contractor shall not be allowed to substitute during fabrication.**

2.3 FINISH FOR MILLWORK

- A. General: The entire finish of millwork is work of this section.
- B. Shop Finishing: To the greatest extent possible, finish millwork at shop or factory. Defer only final touch-up, cleaning and polishing for time after delivery and installation.
- C. Preparations for Finishing: Comply with AWI Quality Standards for sanding, filling countersunk fasteners, back priming and similar preparations for finishing of architectural woodwork as applicable to each unit of work.
- D. Transparent Finish:
 - 1. AWI Finish System #3.
 - 2. Grade: Premium.
 - 3. Open Grain Woods: Filled finish.
- E. Exterior surfaces of finish wood on millwork shall have the following finish system.
 - 1. A first sealer coat shall be applied, thoroughly dried, sanded and dusted.
 - 2. A second sealer coat shall be applied and thoroughly dried.
 - 3. A double coat of chemical resistant synthetic varnish shall then be applied and thoroughly dried, providing a semi-gloss finish.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Coordinate unit models, quantities and delivery dates with Architect prior to start of work.

3.2 INSTALLATION

- A. Installation shall be performed by personnel trained in the installation of architectural woodwork.
- B. Set and secure casework in place rigid, plumb and level.
- C. **Use #10 truss head screws to secure casework to walls.**
- D. Use purpose designed fixture attachments at concealed locations for wall mounted components.
- E. Use threaded steel concealed joint fasteners to align and secure adjoining cabinet units and countertops.
- F. Secure cabinet and counter bases to floor using appropriate angles and anchorages.
- G. Use purpose designed color matching sealant at all countertop and backsplash joints at laminate clad countertops.
- H. Install a clear silicon sealant at joint between wall and top of backsplash at laminate clad countertops.
- I. Provide and install wire management grommets in work surfaces where indicated on drawings. Where grommet are not shown in work surfaces on drawings, provide grommets at 48" o.c. and verify exact locations with owner.

3.3 ADJUSTING

- A. Adjust work before delivery. Test work to be delivered for rigidity and ability to support loads.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.4 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings and fixtures.
- B. Protect millwork to ensure that work will be without damage or deterioration at the time of delivery and acceptance.

END OF SECTION

SECTION 06 8200
FIBERGLASS REINFORCED PLASTIC PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fiberglass reinforced polyester panel system for adhesive mounting.
- B. Moldings, adhesive, and joint sealants.

1.02 REFERENCES

- A. ASTM D 256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2005a.
- B. ASTM D 570 - Standard Test Method for Water Absorption of Plastics; 1998.
- C. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics; 2003.
- D. ASTM D 696 - Standard Test Method for Coefficient of Linear Thermal Expansion of Plastics Between -30 degrees C and 30 degrees C With a Vitreous Silica Dilatometer; 2003.
- E. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials; 2003.
- F. ASTM D 792 - Standard Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement; 2000.
- G. ASTM D 2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor; 1995 (Reapproved 2001).
- H. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- D. Maintenance Instructions.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.05 PROJECT CONDITIONS

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

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: Marlite; 202 Harger Street, Dover, OH 44622. ASD. Tel: (330) 343-6621. Fax: (330) 343-7296. Email: info@marlite.com www.marlite.com
- B. Substitutions: See Section 01600 - Product Requirements.

2.02 PANEL SYSTEM

- A. Panels: Marlite FRP Panels; fiberglass reinforced polyester, USDA approved for incidental food contact.
 - 1. Surface Burning Characteristics: Flame spread index of 20 or less, smoke developed index of 330 or less, when tested in accordance with ASTM E 84 (Class A/I).
 - 2. Surface Texture: Symmetrix, Sani-coat.
 - 3. Color: As selected from manufacturer's standard selection.
 - 4. Thickness: 3/32 inch, nominal.
 - 5. Width: 48 inches.
 - 6. Height: 96 inches.
 - 7. Flexural Strength: 10,000 psi, when tested in accordance with ASTM D 790.
 - 8. Flexural Modulus: 3,100 psi, when tested in accordance with ASTM D 790.
 - 9. Tensile Strength: 7,000 psi, when tested in accordance with ASTM D 638.
 - 10. Tensile Modulus: 1,600,000 psi, when tested in accordance with ASTM D 638.
 - 11. Barcol Hardness: 35, when tested in accordance with ASTM D 2583.
 - 12. Impact Resistance: 7.2 ft-lb/in, when tested in accordance with ASTM D 256, Izod method.
 - 13. Coefficient of Thermal Expansion: 0.0000157 in/in/degree F, measured in accordance with ASTM D 696.
 - 14. Water Absorption: 0.72 percent, when tested in accordance with ASTM D 570.
 - 15. Specific Gravity: 1.8, when tested in accordance with ASTM D 792.
- B. Panel Trim: Extruded PVC, in manufacturer's standard colors.
 - 1. Outside corners, inside corners, edge trim, and division molding.
- C. Sealant: Marlite Silicone Sealant; gunnable silicone rubber; clear.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify CJC Architects of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Take panels out of cartons and allow to acclimatize to room conditions for at least 48 hours prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Clean surfaces thoroughly prior to installation.
- D. Protect existing surfaces from damage due to installation.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Use the adhesives recommended by the panel manufacturer unless prohibited by local regulations; obtain manufacturer's approval of alternative adhesives.
- C. Install continuous bead of silicone sealant in each joint and trim groove and between trim and adjacent construction, maintaining 1/8 inch expansion space.
- D. Avoid contamination of panel faces with adhesives, solvents, or cleaners; clean as necessary and replace if not possible to repair to original condition.
- E. Protect installed products until completion of project.
- F. Touch-up, repair or replace damaged products after Substantial Completion.

END OF SECTION

SECTION 07840 FIRESTOPPING

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Section, apply to work specified in this section.

1.02 DEFINITIONS

- A. Firestopping: Material or combination of materials used to retain integrity of fire-rated construction by maintaining an effective barrier against the spread of flame, smoke, and hot gases through penetrations in, or construction joints between, fire rated wall and floor assemblies.

1.03 GENERAL DESCRIPTION OF THE WORK OF THIS SECTION

Only tested firestop systems shall be used in specific locations as follows:

- A. Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.
- B. Gaps between the top of walls and ceilings or roof assemblies.
- C. Expansion joints in walls and floors.
- D. Openings and penetrations in fire-rated partitions or walls containing fire doors.
- E. Openings around structural members which penetrate floors or walls.

1.04 REFERENCES

- A. Test Requirements: ASTM E 814, "Standard Method of Fire Tests of Through Penetration Fire Stops"
- B. Test Requirements: UL 1479, "Fire Tests of Through-Penetration Firestops"
- C. Test Requirements: UL 2079, "Tests for Resistance of Building Joint Systems"
- D. International Firestop Council Guidelines for Evaluating Firestop Systems Engineering Judgments
- E. Inspection Requirements: ASTM E 2174, "Standard Practice for On-site Inspection of Installed Fire Stops."
- F. All major building codes: IBC and IFC

1.05 QUALITY ASSURANCE

- A. A manufacturer's direct representative (not distributor or agent) to be on-site during initial installation of firestop systems to train appropriate contractor personnel in proper selection

and installation procedures. This will be done per manufacturer's written recommendations published in their literature and drawing details.

- B. Firestop System installation must meet requirements of ASTM E 814, UL 1479 or UL 2079 tested assemblies that provide a fire rating equal to that of construction being penetrated.
- C. Firestop Systems do not reestablish the structural integrity of load bearing partitions/assemblies, or support live loads and traffic. Installer shall consult the structural engineer prior to penetrating any load bearing assembly.
- D. For those firestop applications that exist for which no UL tested system is available through a manufacturer, a manufacturer's engineering judgment derived from similar UL system designs or other tests will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineering judgment drawings must follow requirements set forth by the International Firestop Council.

1.06 SUBMITTALS

- A. Submit Product Data: Manufacturer's specifications and technical data for each material including the composition and limitations, documentation of UL firestop systems to be used and manufacturer's installation instructions to comply with Section 1300.
- B. Manufacturer's engineering judgment identification number and drawing details when no UL system is available for an application. Engineering judgment must include both project name and contractor's name who will install firestop system as described in drawing.
- C. Submit material safety data sheets provided with product delivered to job-site.

1.07 INSTALLER QUALIFICATIONS

- A. Engage an experienced Installer who is certified, licensed, or otherwise qualified by the firestopping manufacturer as having been provided the necessary training to install manufacturer's products per specified requirements. A manufacturer's willingness to sell its firestopping products to the Contractor or to an Installer engaged by the Contractor does not in itself confer qualification on the buyer.

PART 2 PRODUCTS

2.01 FIRESTOPPING, GENERAL

- A. Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by the firestopping manufacturer based on testing and field experience.
- B. Provide components for each firestopping system that are needed to install fill material. Use only components specified by the firestopping manufacturer and approved by the qualified testing agency for the designated fire-resistance-rated systems.
- C. Firestopping Materials are either "cast-in-place" (integral with concrete placement) or "post installed." Provide cast-in-place firestop devices prior to concrete placement.

2.02 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with through penetration firestop systems (XHEZ), joint systems (XHBN), and perimeter firestop systems (XHDG) listed in Volume II of the UL Fire Resistance Directory; provide products of the following manufacturers as identified below:
 - 1. Hilti, Inc., Tulsa, Oklahoma
800-879-8000/www.us.hilti.com
 - 2. Other manufacturer's meeting the requirements of this section are acceptable.

2.03 MATERIALS

- A. Use only firestop products that have been UL 1479, ASTM E 814, or UL 2079 tested for specific fire-rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements, and fire-rating involved for each separate instance.
- B. Provide a firestop system with a "F" Rating as determined by UL 1479 or ASTM E 814 which is equal to the time rating of construction being penetrated.
- C. Provide a firestop system with an Assembly Rating as determined by UL 2079 which is equal to the time rating of construction being penetrated.

PART 3 EXECUTION

3.01 PREPARATION

- A. Verification of Conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
 - 1. Verify penetrations are properly sized and in suitable condition for application of materials.
 - 2. Surfaces to which firestop materials will be applied shall be free of dirt, grease, oil, rust, laitance, release agents, water repellents, and any other substances that may affect proper adhesion.
 - 3. Provide masking and temporary covering to prevent soiling of adjacent surfaces by firestopping materials.
 - 4. Comply with manufacturer's recommendations for temperature and humidity conditions before, during and after installation of firestopping.
 - 5. Do not proceed until unsatisfactory conditions have been corrected.

3.02 COORDINATION

- A. Coordinate location and proper selection of cast-in-place Firestop Devices with trade responsible for the work. Ensure device is installed before placement of concrete.
- B. Responsible trades to provide adequate spacing of field run pipes to allow for installation of cast-in-place firestop devices without interferences.

3.03 INSTALLATION

- A. Regulatory Requirements: Install firestop materials in accordance with UL Fire Resistance Directory.
- B. Manufacturer's Instructions: Comply with manufacturer's instructions for installation of through-penetration and construction joint materials.
 - 1. Seal all holes 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 UL 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.

3.04 FIELD QUALITY CONTROL

- A. Examine sealed penetration areas to ensure proper installation before concealing or enclosing areas.
- B. Keep areas of work accessible until inspection by applicable code authorities.
- C. Perform under this section patching and repairing of firestopping caused by cutting or penetrating of existing firestop systems already installed by other trades.

3.05 ADJUSTING AND CLEANING

- A. Remove equipment, materials and debris, leaving area in undamaged, clean condition.
- B. Clean all surfaces adjacent to sealed holes and joints to be free of excess firestop materials and soiling as work progresses.

END OF SECTION

SECTION 07900

JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preparing substrate surfaces.
- B. Sealant and joint backing for joints in the superstructure.

1.02 REFERENCES

- A. ASTM C790 - Use of Latex Sealing Compounds.
- B. ASTM C1193-00 Standard Guide for Use of Joint Sealants
- C. ASTM C834 - Latex Sealing Compounds.
- D. ASTM C920 - Elastomeric Joint Sealants.
- E. ASTM D1056 - Flexible Cellular Materials - Sponge or Expanded Rubber.
- F. ASTM D1565 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open-Cell Foam).
- G. SWRI (Sealant, Waterproofing and Restoration Institute) - Sealant and Caulking Guide Specification.

1.03 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, color and availability.
- C. Manufacturer's Installation Instructions: Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

1.04 QUALITY ASSURANCE

Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

1.05 QUALIFICATIONS

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

PART 2 PRODUCTS

2.01 SEALANTS

- A. Silicone Sealant (Type S): One part, air curing, non-sagging, non-staining, non-bleeding, self leveling
- B. Acrylic Emulsion Sealant: One part, non-sagging, mildew-resistant, paintable.
- C. Fire Retardant Sealant: Shall resist the spread of fire, smoke and other gases, sealant shall meet or exceed the fire-rating of the construction in which the joint occurs.
- D. Other sealants as required.

2.02 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round, closed cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

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

3.03 INSTALLATION

- A. Install sealant in accordance with manufacturer's instructions.
- B. Measure joint dimensions and size materials to achieve 2:1 width/depth ratios.
- C. Install joint backing to achieve a neck dimension no greater than ½ of the joint width.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- E. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- F. Tooling joints not required. Sealant shall be self-leveling compound.

3.04 CLEANING

- A. Clean adjacent soiled surfaces.

3.05 PROTECTION OF FINISHED WORK

- A. Protect sealants until cured.

END OF SECTION

SECTION 08100
STEEL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. The work under this section shall include the furnishing of all items shown on the drawings and as specified including, but not limited to, the following.
 - 1. Steel Doors
 - 2. Steel Door Frames
 - 3. Steel Sidelight, Borrowed lite & transom frames

1.02 RELATED SECTIONS

- A. Section 06200 - Finish Carpentry
- B. Section 08200 – Wood Doors
- C. Section 08255 – FRP Flush Doors
- D. Section 08710 - Finish Hardware
- E. Section 08715 – Finish Hardware Schedule

1.03 REFERENCES

- A. Steel Doors and Frames in this section must meet all standards as established by the following listing.
 - 1. Door and Hardware Preparation ANSI 115.
 - 2. Life Safety Codes NFPA-101 (Latest edition).
 - 3. Fire Doors and Windows NFPA-80 (Latest edition).
 - 4. Steel Door Institute ANSI/SDI-100 (Latest edition)
 - 5. UL10C and UBC 7 – 2 Positive Pressure fire testing.

1.04 SUBMITTAL

- A. Coordinate approved shop drawings with all other trades and manufacturers whose products are used in conjunction with the Steel Doors and Frames under Section 08100.
- B. Finish hardware supplier is to furnish templates, template reference number and/or physical hardware to the steel door and frame supplier in order to prepare the doors and frames to receive the finish hardware items.
- C. Each floor of the building is to be detailed separately.
- D. The steel door and frame supplier will furnish to the architect (6) complete copies of the proposed steel door and frames schedule and/or shop drawings. **Using the same reference number for details and openings as those on the contract drawings.** After receipt of the approved door schedule the steel door and frame supplier will make any corrections and submit to the architect (6) sets of corrected schedules.

- E. Upon request of the architect or for any substitution to this specification, (4) copies of the steel door & frame manufacturers catalog cut sheets are to be submitted to the architect before any material is placed on the job site.

1.05 QUALITY ASSURANCE

- A. Provide Steel Doors and Frames complying with the Steel Door Institute recommended specifications for Standard Steel Doors and Frames ANSI/SDI 100 (Latest edition).

1.06 DELIVERY, STORAGE & HANDLING

- A. Doors and frames must be properly marked with door opening mark number to correspond with the schedule.
- B. Deliver all steel doors in cartons and palletized to provide protection during transit and job storage.
- C. Inspect doors and frames upon delivery for damage. Minor damage is to be repaired, provided the repair is equal to new work and acceptable to the architect.
- D. Store doors and frames at the job site under cover. Place units on wood sills on the floor in a manner that will prevent rust and damage. Avoid the use of non-vented plastic or canvas shelters, which could create a humidity chamber. If the wrapper on the door becomes wet, remove the carton immediately. Provide a 1/4 inch space between stacked doors to promote air circulation.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provided their products meet the requirements of the specifications.
 - 1. Ceco Door Products
 - 2. Curries Company
 - 3. Other SDI or NAAMM members that conform to the specific requirements of this specification.

2.02 HARDWARE LOCATIONS & GENERAL REINFORCEMENTS

- A. Locate hardware on doors and frames in accordance with the manufacturer's standard location.
- B. When steel frames are used with wood doors, the hardware preparation in the door is governed by the location on the frame. If the doors are factory mortised, the door supplier is responsible for coordinating hardware locations.
- C. Hardware reinforcements are to be in accordance with the minimum standard gages as listed in SDI-100.
- D. Doors shall be mortised, reinforced and function holes provided at the factory in accordance with the hardware schedule and templates provided by the hardware supplier. Through bolt holes, attachment holes, or drilling and tapping for surface hardware, shall be done by others in the field.

2.03 STEEL DOORS

- A. Material - Exterior and as indicated on the schedule
 - 1. Sheets are to be made of commercial quality hot dipped zinc coated steel that complies with ASTM A924 A60.
 - 2. Vertical edges will join the face sheets by a continuous weld extending the full height of the door. Welds are to be ground, filled to make them invisible and provide a smooth flush surface.
 - 3. Hinge reinforcement to be not less than 7 gage (3/16") plate 1-1/4" X 9". Approved equal is a 12 gage continuous channel with formed holes drilled and tapped. The manufacture is to provide test information with submittal that this type reinforcement is equal to a 3/16" or 7 gage plate reinforcement.
 - 4. Reinforce tops and bottoms of all doors with a continuous steel channel not less than 16 gage, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel is flush with the top of the face sheets of the door. Plastic fillers are NOT acceptable.
 - 5. Door Cores
 - a. Insulated doors are to be completely filled with a rigid polyurethane core chemically bonded to all interior surfaces with a minimum insulation value of R10.
 - b. Insulated doors to have 20 gage vertical steel stiffeners spanning the full thickness of the interior space between door faces. Stiffeners are spaced not more than 6" apart, and attached by spot welds spaced not more than 5" on centers. Spaces between stiffeners are to be filled with fiberglass insulation (Min. density 0.8#/cubic ft.)
 - 6. Door face sheets shall be 16 gage.
- B. Materials - Other doors as indicated on the schedule.
 - 1. Face sheets are to be made of commercial quality cold rolled steel that complies with ASTM A366 or A620.
 - 2. Vertical edges to have a hairline edge seam.
 - 3. Hinge reinforcement shall be not less than 7 gage (3/16") plate 1-1/4" X 9". Approved as equal is a 12 gage continuous channel with formed holes drilled and tapped. The manufacture is to provide test information with submittal that this type reinforcement is equal to a 3/16" or 7 gage plate reinforcement.
 - 4. Reinforce tops and bottoms of all doors with a continuous steel channel not less than 16 gage, extending the full width of the door and welded to the face sheet. Doors with an inverted top channel to have a steel closure channel screwed in place so that the web of the channel is flush with the top of the face sheets of the door. Plastic filler is NOT acceptable.
 - 5. Door Cores
 - a. Doors are to be fully filled with a one piece resin-impregnated honeycomb bonded to both faces.
 - b. Or doors are to be fully filled with a one piece polystyrene core, securely bonded to both faces.

2.04 STEEL FRAMES

- A. Materials - Exterior
 - 1. To be hot dipped zinc coated steel that complies with ASTM designations A924 A60.
 - 2. Weld the face seam and the full web of the frame corner or intersection. Grind and dress the weld area smooth. Apply a zinc rich primer over the grinding area, and finish with a matching prime paint.
 - 3. All exterior door frames shall be 14 gage
- B. Materials - Interior
 - 1. Cold rolled steel that complies to ASTM A366 or A620.

2. Weld the face miter seam. Grind and dress the weld smooth. Finish with a matching prime paint.
 3. All interior door frames shall be 14 gage
- C. Fabrication
1. Provide steel frames for doors, transoms, sidelights, borrowed lites, and other openings to the size and design as shown on the architectural drawings.
 2. All finished work shall be strong and rigid, neat in appearance, square, true and free of defects.
 3. Jamb depths, trim, profile and backbends to be as scheduled and shown on approved shop drawings.
 4. When shipping limitations so dictate, frames for large openings are to be fabricated in sections for splicing or splining in the field by others.
 5. Hardware reinforcements are to be in accordance with the minimum standard gages as listed in SDI-100.
 6. Frames shall be mortised, reinforced, drilled and tapped at the factory for template mortised hardware only, in accordance with approved hardware schedule and template provided by the hardware contractor. Where surface mounted hardware is to be applied, frames shall have reinforcing plates only; all drilling and tapping to be done in the field by others.
 7. Hinge reinforcements to be 7 gage steel.
 8. All frames shall be fully welded. Knock-down type frames shall not be acceptable unless specifically identified as Knock-down on Door Schedule.
- D. Anchors
1. Floor anchors to be provided at each jamb.
 2. Anchors for masonry walls to be of the wire type.
 3. Anchors for stud partitions to be steel of a suitable design, not less than 18 gage thickness,
 4. Dust boxes/mortar guards to be no less than 26 gage.
 5. All frames that are to be welded are to have a steel spreader during shipping and handling. Spreader bars are for bracing only and are not be used to size the frame opening.
 6. Loose glazing stops are to be of 16 gage galvanized steel, butted at corner joints and secured to the frame with countersunk cadmium or zinc-plated screws.
 7. Except on weather-stripped frames, punch the stop for 3 silencers on single door and 2 on double door frames.

2.05 LABELED DOORS & FRAMES

- A. Construct and install doors and frames to comply with current issue of National Fire Protection Association (NFPA) Standard Number 80, as herein specified.
- B. Doors and/or frames for labeled openings shall bear either a stamped or applied label from a nationally recognized testing agency.
- C. All doors and frames shall have been tested in accordance with UL10C and UBC 7-2 Positive Pressure.

2.06 PRIME FINISH

- A. Doors and frames are to be cleaned, and chemically treated to insure maximum finish paint adhesion. All surfaces of the door and frame exposed to view shall receive a factory applied coat of rust inhibiting primer. The finish to meet the requirements for acceptance stated in ANSI A224.1 "Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces." The prime finish is not intended to be the final layer of protection from the elements. Field painting using a good grade of paint to be provided in accordance with the recommendations

of the door and frame manufacturer. For specialty types of finished coatings, the paint supplier should also be consulted.

PART 3 EXECUTION

3.01 INSPECTION

- A. It is the responsibility of the General Contractor to make sure that all dimensions for existing opening or existing frames (strike height, hinge spacing, hinge back set, etc.) given to the steel door and frame manufacturer are accurate.
- B. It is the responsibility of the General Contractor to assure that scratches or disfigurements caused in shipping or handling are properly cleaned and touched up with a rust inhibitive primer.

3.02 INSTALLATION

- A. Frames
 - 1. Prior to installation, all frames must be checked for rack, twist and out of square conditions.
 - 2. Place frames prior to enclosing walls and ceilings. Set frames accurately in position, plumbed and braced securely until permanent anchors are set. Remove shipping bar spreader and insert a wood spreader cut to the opening width, notched to clear the stops.
 - 3. Fill frames in masonry walls with mortar.
 - 4. When temperature conditions necessitate an additive to be used in the plaster or mortar to prevent freezing, the contractor installing the frames shall coat the inside of the frames, in the field, with a corrosion inhibiting bituminous material.
 - 5. SDI-105, "Recommended Erection Instructions for Steel Frames" and SDI-110 "Standard Steel Doors and Frames for Modular Masonry Construction" shall indicate the proper installation procedures.
- B. Doors
 - 1. Install doors plumb and in true alignment in a prepared opening and fasten them to achieve the maximum operational effectiveness and appearance.
 - 2. Proper door clearance must be maintained in accordance with SDI-110.
 - 3. Where necessary, only metal hinge shims are acceptable to maintain clearances.
 - 4. "Installation Guide for Doors and Hardware" published by DHI is recommended for further details.
- C. Hardware must be applied in accordance with hardware manufacturer's templates and instructions.

3.03 ADJUST & CLEAN

- A. Check and re-adjust operating finish hardware items in hollow metal work just prior to final inspection. Leave work in complete and proper condition.
- B. Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply to touch-up or compatible air-drying primer.

END OF SECTION

SECTION 08200

WOOD DOORS

PART 1 GENERAL

1.01 DESCRIPTION

- A. Standards for manufacturing, machining and installation of wood doors.

1.02 RELATED SECTIONS

- A. Section 06200 - Finish Carpentry
- B. Section 08100 - Hollow Metal Doors & Frames
- C. Section 08710 - Door Hardware
- D. Section 08800 - Glass & Glazing

1.03 QUALITY ASSURANCE

- A. Provide doors meeting or exceeding the minimum standards as set forth by the following organizations unless standards are modified or exceeded by this specification.
 - 1. WDMA IS 1A-Window and Door Manufacturers Association.
 - 2. Architectural Woodwork Institute (AWI), Section 1300 and 1500
 - 3. National Electrical Manufacturers Association (NEMA).
 - 4. National Fire Protection Association (NFPA).
- B. All doors shall be the product of the same manufacturer to insure uniformity of quality and appearance throughout the project.
- C. Fire doors shall bear labels approved by Underwriters Laboratories, Inc or Intertek Testing (WHI). Any discrepancies between the architectural drawings and the procedures and limitations as set forth by the testing agencies shall be brought to the architect's attention.
- D. Provide each fire rated door with a label permanently attached to either the hinge stile or to the top rail, showing testing agency approval for classification scheduled.
- E. The top of each door shall bear a label from the manufacturer indicating the door construction, face veneer species, cut and grade. If the doors are factory finished the label shall also have the finishing information.
- F. The Door Manufacturer shall provide a letter, signed by an authorized company representative, to the Architect stating that the doors have been manufactured in compliance with this specification.

1.04 SUBMITTAL

- A. Shop Drawings: Submit schedules and elevations indicating door sizes, construction, swing, label, undercut, and applicable hardware locations. Dimensions and detail openings for glass lites, louvers, and grilles.
- B. Samples: Doors are to be factory finished, manufacturer shall submit veneer samples of specified veneer with their standard finish colors at architect's request, or a color sample from the architect will be sent to the manufacturer for duplication. Samples are to be submitted representing the color selected on veneer typical of grain patterns and coloration for the specified species and cut.

- C. Product Information: Submit manufacturer's product description showing compliance with specifications, along with finishing instructions, installation instructions, and any general recommendations manufacturer may have for the care and maintenance of each door type.

1.05 DELIVERY, STORAGE & HANDLING

- A. No doors shall be delivered to the building until weatherproof storage space is available. Store doors in a space having controlled temperature and humidity range between 30 and 60 percent. Stack doors flat and off the floor, supported to prevent warpage. Protect doors from damage and direct exposure to sunlight.
- B. Do not walk or place other material on top of stacked doors. Do not drag doors across one another.
- C. Contractor shall use all means necessary to protect doors from damage prior to, during, and after installation. All damaged doors shall be repaired or replaced by the contractor at no cost to the owner.
- D. Doors shall be palletized at factory in stacks of no more than 30 doors per pallet. Door edges shall be protected with heavy corner guards.

1.06 WARRANTY

- A. All work in this Section shall be warranted by a **FULL DOOR WARRANTY** (from the date of installation) against defect in materials and workmanship, including the following:
 - 1. Delamination in any degree.
 - 2. Warp or twist of 1/4" or more in any 3'0" x 7'0" section of a door.
 - 3. Telegraphing of any part of core assembly through face to cause surface variation of 1/100" or more in a 3" span.
 - 4. Any defect which may, in any way, impair or affect performance of the door for the purpose which it is intended. Replacement under this warranty shall include hanging, installation of hardware, and finishing.
- B. Periods of warranty after date of installation:
 - 1. Interior solid core and mineral core Life of original installation.
 - 2. Exterior solid core - 1 year.
- C. Doors must be stored, finished, hung and maintained per manufacturers recommendations set forth in their Full Door Warranty.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Listed manufacturers are believed to conform to the criteria stated for material quality standards, function and appearance. Manufacturers are still subject to meeting the requirements for 5-ply hot-pressed (cold-pressed will not be accepted) door construction procedures and warranties set forth in this specification.
 - 1. Algoma Hardwoods, Inc.
 - 2. Eggers Hardwood Products Corporation
 - 3. Oshkosh Architectural Door Company

2.02 MATERIAL & COMPONENTS

- A. Flush Interior Doors: Shall be 1 ¾" thick, with a solid particleboard core. Face veneer shall be custom grade or better. Provide a minimum of ½" thick edge strips of to match face veneer.
- B. Flush Fire Rated Doors: Shall be 1 ¾" thick, with a solid core of incombustible material approved by a nationally recognized testing agency. Face veneer shall be custom grade or better. Provide a minimum of ½" thick edge strips to match face veneer.
- D. Species: Plain sliced red oak.
- C. Finish: Doors shall have factory finish. On site finishing will not be accepted.

PART 3 EXECUTION

3.01 FABRICATION

- A. Fabricate all wood doors in strict accordance with the referenced standards specified herein.

3.02 MACHINING & FITTING

- A. All wood doors shall be machined by the manufacturer for cutouts, hinges, locks and all hardware requiring routing and mortising. Any required rabbeting to properly hang doors will be performed by the manufacturer prior to finishing. Doors shall be sized to allow 1/8" clearance at top and each side, and ¾" at bottom (unless specified otherwise.) Factory drilling of pilot holes is not required except for "B" & "C" label fire doors at mortise hinge locations.

3.03 INSTALLATION OF HARDWARE

- A. Contractor shall install hardware according to approved hardware schedule for proper locations.
- B. Install with full-threaded wood screws furnished by hardware manufacturer.
- C. Drill proper size pilot hole for all screws. (Full mortise hinges require 5/32" pilot holes.)
- D. Securely anchor hardware in correct position and alignment.
- E. Adjust hardware and door for proper function and smooth operation, proper latching, without force or excessive clearance.

3.04 INSTALLATION OF DOORS

- A. Fire rated doors shall be installed in accordance with the requirements of the labeling agency and NFPA #80 and #101.
- B. Doors shall be installed plumb and square.

END OF SECTION

SECTION 08255
FRP FLUSH DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fiberglass reinforced polyester (FRP) flush doors with aluminum frames.

1.2 RELATED SECTIONS

- A. Section 08100 – Steel Doors & Frames
- B. Section 08710 - Door Hardware
- C. Section 08715 – Finish Hardware Schedule

1.3 REFERENCES

- A. AAMA 1503-98 - Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
- B. ANSI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings.
- C. ASTM B 117 - Operating Salt Spray (Fog) Apparatus.
- D. ASTM B 209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- E. ASTM B 221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- F. ASTM D 256 - Determining the Pendulum Impact Resistance of Notched Specimens of Plastics.
- G. ASTM D 543 - Evaluating the Resistance of Plastics to Chemical Reagents.
- H. ASTM D 570 - Water Absorption of Plastics.
- I. ASTM D 638 - Tensile Properties of Plastics.
- J. ASTM D 790 - Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- K. ASTM D 1308 - Effect of Household Chemicals on Clear and Pigmented Organic Finishes.
- L. ASTM D 1621 - Compressive Properties of Rigid Cellular Plastics.
- M. ASTM D 1623 - Tensile and Tensile Adhesion Properties of Rigid Cellular Plastics.
- N. ASTM D 2126 - Response of Rigid Cellular Plastics to Thermal and Humid Aging.
- O. ASTM D 2583 - Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.
- P. ASTM D 5420 – Impact Resistance of Flat Rigid Plastic Specimens by Means of a Falling Weight.
- Q. ASTM D 6670-01 - Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/Products.

- R. ASTM E 84 - Surface Burning Characteristics of Building Materials.
- S. ASTM E 90 - Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
- T. ASTM E 283 - Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- U. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- V. ASTM E 331 - Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- W. ASTM F 476 - Security of Swinging Door Assemblies.
- X. ASTM F 1642-04 – Standard Test Method for Glazing Systems Subject to Air blast Loading.
- Y. NWWDA T.M. 7-90 – Cycle Slam Test Method
- Z. SFBC PA 201 - Impact Test Procedures.
- AA. SFBC PA 203 - Criteria for Testing Products Subject to Cyclic Wind Pressure Loading.
- AB. SFBC 3603.2 (b)(5) - Forced Entry Resistance Test.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide door assemblies that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturer's corresponding standard systems.
- B. Air Infiltration: For a single door 3'-0" x 7'-0", test specimen shall be tested in accordance with ASTM E 283 at pressure differential of 6.24 psf. Door shall not exceed 0.90 cfm per linear foot of perimeter crack.
- C. Water Resistance: For a single door 3'-0" x 7'-0", test specimen shall be tested in accordance with ASTM E 331 at pressure differential of 7.50 psf. Door shall not have water leakage.
- D. Indoor air quality testing per ASTM D 6670-01: GREENGUARD Environmental Institute Certified including GREENGUARD for Children and Schools Certification.
- E. Hurricane Test Standards, Single Door with Single-Point Latching:
 - 1. Uniform Static Load, ASTM E 330: Plus or minus 75 pounds per square foot.
 - 2. Forced Entry Test, 300 Pound Load Applied, SFBC 3603.2 (b)(5): Passed.
 - 3. Cyclic Load Test, SFBC PA 203: Plus or minus 53 pounds per square foot.
 - 4. Large Missile Impact Test, SFBC PA 201: Passed.
- F. Blast Test, Doors and Frames, ASTM F 1642-04, 6 psi / 41 psi-msec: Minimal Hazard.
- G. Swinging Door Cycle Test, Doors and Frames, ANSI A250.4: Minimum of 25,000,000 cycles.
- H. Cycle Slam Test Method, NWWDA T.M. 7-90: Minimum 5,000,000 Cycles.
- I. Swinging Security Door Assembly, Doors and Frames, ASTM F 476: Grade 40.
- J. Salt Spray, Exterior Doors and Frames, ASTM B 117: Minimum of 500 hours.

- K. Sound Transmission, Exterior Doors, STC, ASTM E 90: Minimum of 25.
- L. Thermal Transmission, Exterior Doors, U-Value, AAMA 1503-98: Maximum of 0.29 BTU/hr x sf x degrees F. Minimum of 55 CRF value.
- M. Surface Burning Characteristics, FRP Doors and Panels, ASTM E 84:
 - 1. Flame Spread: Maximum of 200, Class C.
 - 2. Smoke Developed: Maximum of 450, Class C.
- N. Surface Burning Characteristics, Class A Option On Interior Faces of FRP Exterior Panels and Both Faces of FRP Interior Panels, ASTM E 84:
 - 1. Flame Spread: Maximum of 25.
 - 2. Smoke Developed: Maximum of 450.
- O. Impact Strength, FRP Doors and Panels, Nominal Value, ASTM D 256: 15.0 foot-pounds per inch of notch.
- P. Tensile Strength, FRP Doors and Panels, Nominal Value, ASTM D 638: 14,000 psi.
- Q. Flexural Strength, FRP Doors and Panels, Nominal Value, ASTM D 790: 21,000 psi.
- R. Water Absorption, FRP Doors and Panels, Nominal Value, ASTM D 570: 0.20 percent after 24 hours.
- S. Indentation Hardness, FRP Doors and Panels, Nominal Value, ASTM D 2583: 55.
- T. Gardner Impact Strength, FRP Doors and Panels, Nominal Value, ASTM D 5420: 120 in-lb.
- U. Abrasion Resistance, Face Sheet, Taber Abrasion Test, 25 Cycles at 1,000 Gram Weight with CS-17 Wheel: Maximum of 0.029 average weight loss percentage.
- V. Stain Resistance, ASTM D 1308: Face sheet unaffected after exposure to red cabbage, tea, and tomato acid. Stain removed easily with mild abrasive or FRP cleaner when exposed to crayon and crankcase oil.
- W. Chemical Resistance, ASTM D 543. Excellent rating.
 - 1. Acetic acid, Concentrated.
 - 2. Ammonium Hydroxide, Concentrated.
 - 3. Citric Acid, 10%.
 - 4. Formaldehyde.
 - 5. Hydrochloric Acid, 10%
 - 6. Sodium hypochlorite, 4 to 6 percent solution.
- X. Compressive Strength, Foam Core, Nominal Value, ASTM D 1621: 79.9 psi.
- Y. Compressive Modulus, Foam Core, Nominal Value, ASTM D 1621: 370 psi.
- Z. Tensile Adhesion, Foam Core, Nominal Value, ASTM D 1623: 45.3 psi.
- AA. Thermal and Humid Aging, Foam Core, Nominal Value, 158 Degrees F and 100 Percent Humidity for 14 Days, ASTM D 2126: Minus 5.14 percent volume change.

1.5 SUBMITTALS

- A. Comply with Section 01300 for Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including description of materials, components, fabrication, finishes, and installation.

- C. Shop Drawings: Submit manufacturer's shop drawings, including elevations, sections, and details, indicating dimensions, tolerances, materials, fabrication, doors, panels, framing, hardware schedule, and finish.
- D. Samples:
 - 1. Door: Submit manufacturer's sample of door showing face sheets, core, framing, and finish.
 - 2. Color: Submit manufacturer's samples of standard colors of doors and frames.
- E. Test Reports: Submit certified test reports from qualified independent testing agency indicating doors comply with specified performance requirements.
- F. Manufacturer's Project References: Submit list of successfully completed projects including project name and location, name of architect, and type and quantity of doors manufactured.
- G. Maintenance Manual: Submit manufacturer's maintenance and cleaning instructions for doors, including maintenance and operating instructions for hardware.
- H. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 - 1. Continuously engaged in manufacturing of doors of similar type to that specified, with a minimum of 25 years successful experience.
 - 2. Door and frame components from same manufacturer.
 - 3. Evidence of a compliant documented quality management system.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying opening door mark and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials and finish from damage during handling and installation.

1.8 WARRANTY

- A. Warrant doors, frames, and factory hardware against failure in materials and workmanship, including excessive deflection, faulty operation, defects in hardware installation, and deterioration of finish or construction in excess of normal weathering.
- B. Warranty Period: Ten years starting on date of shipment. In addition, a limited lifetime (while the door is in its specified application in its original installation) warranty covering: failure of corner joinery, core deterioration, delamination or bubbling of door skin.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Special-Lite, Inc., PO Box 6, Decatur, Michigan 49045. Toll Free (800) 821-6531. Phone (269) 423-7068. Fax (800) 423-7610. Web Site www.special-lite.com. E-Mail info@special-lite.com.

2.2 FRP FLUSH DOORS

- A. Model: SL-17 Flush Doors with SpecLite3 fiberglass reinforced polyester (FRP) face sheets.

- B. Door Opening Size: As indicated on the Drawings.
- C. Construction:
1. Door Thickness: 1-3/4 inches.
 2. Stiles and Rails: Aluminum extrusions made from prime-equivalent billet that is produced from 100% reprocessed 6063-T6 alloy recovered from industrial processes, minimum of 2-5/16-inch depth.
 3. Corners: Mitered.
 4. Provide joinery of 3/8-inch diameter full-width tie rods through extruded splines top and bottom integral to standard tubular shaped stiles and rails reinforced to accept hardware as specified.
 5. Securing Internal Door Extrusions: 3/16-inch angle blocks and locking hex nuts for joinery. Welds, glue, or other methods are not acceptable.
 6. Furnish extruded stiles and rails with integral reglets to accept face sheets. Lock face sheets into place to permit flush appearance.
 7. Rail caps or other face sheet capture methods are not acceptable.
 8. Extrude top and bottom rail legs for interlocking continuous weather bar.
 9. Meeting Stiles: Pile brush weatherseals. Extrude meeting stile to include integral pocket to accept pile brush weatherseals.
 10. Bottom of Door: Install bottom weather bar with nylon brush weatherstripping into extruded interlocking edge of bottom rail.
 11. Glue: Use of glue to bond sheet to core or extrusions is not acceptable.
- D. Face Sheet:
1. Material: SpecLite3 FRP, 0.120-inch thickness, finish color throughout.
 2. Protective coating: Abuse-resistant engineered surface. Provide FRP with SpecLite3 protective coating, or equal.
 3. Texture: Pebble.
 4. Color: To be selected by Architect from manufacturer's standard colors.
 5. Adhesion: The use of glue to bond face sheet to foam core is prohibited.
- E. Core:
1. Material: Poured-in-place polyurethane foam.
 2. Density: Minimum of 5 pounds per cubic foot.
 3. R-Value: Minimum of 9.
- F. Cutouts:
1. Manufacture doors with cutouts for required vision lites, louvers, and panels.
 2. Factory install vision lites, louvers, and panels.
- G. Hardware:
1. Premachine doors in accordance with templates from specified hardware manufacturers and hardware schedule.
 2. Factory install hardware.

2.3 MATERIALS

- A. Aluminum Members:
1. Aluminum extrusions made from prime-equivalent billet that is produced from 100% reprocessed 6063-T6 alloy recovered from industrial processes: ASTM B 221.
 2. Sheet and Plate: ASTM B 209.
 3. Alloy and Temper: As required by manufacturer for strength, corrosion resistance, application of required finish, and control of color.
- B. Components: Door and frame components from same manufacturer.
- C. Fasteners:
1. Material: Aluminum, 18-8 stainless steel, or other noncorrosive metal.

2. Compatibility: Compatible with items to be fastened.
3. Exposed Fasteners: Screws with finish matching items to be fastened.

2.4 FABRICATION

- A. Sizes and Profiles: Required sizes for door and frame units, and profile requirements shall be as indicated on the Drawings.
- B. Coordination of Fabrication: Field measure before fabrication and show recorded measurements on shop drawings.
- C. Assembly:
 1. Complete cutting, fitting, forming, drilling, and grinding of metal before assembly.
 2. Remove burrs from cut edges.
- D. Welding: Welding of doors or frames is not acceptable.
- E. Fit:
 1. Maintain continuity of line and accurate relation of planes and angles.
 2. Secure attachments and support at mechanical joints with hairline fit at contacting members.

2.5 HARDWARE

- A. Premachine doors in accordance with templates from specified hardware manufacturers and hardware schedule.
- B. Hardware Schedule: As specified in Section 08715.

2.6 VISION LITES

- A. Factory Glazing: As indicated on Construction Drawings.

2.7 ALUMINUM FINISHES

- A. Anodized Finish: Class I finish, 0.7 mils thick.
 1. Clear Anodized.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive doors. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Ensure openings are plumb, level, square, and in tolerance.

3.3 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions.
- B. Install doors plumb, level, square, true to line, and without warp or rack.

- C. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by Architect.
- D. Install exterior doors to be weathertight in closed position.
- E. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
- F. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

3.4 ADJUSTING

- A. Adjust doors, hinges, and locksets for smooth operation without binding.

3.5 CLEANING

- A. Clean doors promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that would damage finish.

3.6 PROTECTION

- A. Protect installed doors to ensure that, except for normal weathering, doors will be without damage or deterioration at time of substantial completion.

END OF SECTION

SECTION 08710

DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. The General Conditions of the Contract, including Supplementary Conditions and Division 1, General Requirements, apply to work of this Section.
- B. Hardware for hollow metal doors.
- C. Hardware for Wood Doors.
- D. Hardware for fire-rated doors.
- E. Hardware for Fiberglass Reinforced Plastic Doors (Section 08342).
- F. Electrically operated and controlled hardware rough-in. Hardware to be Owner provided.
- G. Lock cylinders for doors for which hardware is specified in other sections.
- H. Thresholds.
- I. Weather stripping, seals and door gaskets.

1.02 REFERENCES

- A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 1998.
- B. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association; 1999.
- C. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures; National Fire Protection Association; 1997.

- D. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition. **1.03**

SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate locations and mounting heights of each type of hardware, schedules, catalog cuts, electrical characteristics and connection requirements.
- C. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention and adjustment.
- D. Project Record Documents: Record actual locations of installed cylinders and their master key code.
- E. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
- F. Keys: Coordinate with existing system and deliver with identifying tags to Owner's designated representative ONLY by security shipment direct from hardware supplier.
- G. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in Tulsa Public Schools's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Single-Source: All door hardware is to be furnished by the same vendor.
- B. Hardware Supplier Personnel: Employ an Architectural Hardware Consultant (AHC) to assist in the work of this section.

1.05 PRE-INSTALLATION MEETING

- A. Convene one week prior to commencing work of this section. The Architect and the Owner's Representative is to be notified of date, time, and location of said meeting at least one (1) week ahead of the meeting and be given the opportunity to attend same.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

1.07 COORDINATION

- A. Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware.
- B. Furnish templates for door and frame preparation.
- C. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- D. Coordinate Tulsa Public Schools keying requirements during the course of the Work.

1.08 WARRANTY

- A. See Section 01780 - Closeout Submittals, for additional warranty requirements.

1.09 MAINTENANCE PRODUCTS

- A. Provide special wrenches and tools applicable to each different or special hardware component.
- B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hinges:
 - 1. Stanley CB1900 and CB1901 or equal.
- B. Continuous Hinges
 - 1. Pemko CFM 83 HD

C. Lock and Latch Sets:

1. Contractor is to install construction cylinders, and the hardware consultant is to install final cylinders after significant completion is achieved and turn the keys over to TPS. Cylinders will need to be coordinated with the existing keying system at each school. Each architect will need to contact Raul Chairez at Tulsa Public Schools, 918-629-7156 or chairra@tulsachools.org to obtain the name of the manufacturer of the existing hardware.
2. Corbin/Russwin: Classroom doors -- ML2065, dull chrome or stainless steel, or equal (see section 01600 for pre-approval requirements).

1. Rockwood pulls with type 1HD mounting, or equal.

Mortise Locks:

1. Corbin / Russwin ML2042 series, or pre-approved equal (See Section 01600).

Card Reader Entrance:

1. Locknetics CR90-CT500CR-ATR-PS (no substitutions).
2. Von Duprin E99L x 994L (Active Leaf only).
3. Von Duprin EPT-2.

1. Von Duprin, Inc.

(a) Exterior Entrance Doors:

- (i) Active -----Von Duprin 99NL.
- (ii) Inactive-----Von Duprin 99DT.
- (iii) Key removable Mullion---Von Duprin KR4954

(b) "Cross Corridor" Double Egress doors:

- (i) Von Duprin 9947EO-F Concealed rod, less the bottom rods.

(c) "Cross Corridor" - Uni-direction:

- (i) Von Duprin 9947-F less bottom rods X994L (Do not use removable mullions in this application).

(d) Provide interchangeable core cylinders for exit devices and mullions.

1. All closers to be parallel arm operation.

2. All closer cylinders shall be non-

sized. I. Hold-Opens -- Electromagnetic:

1. All "Cross Corridor" Doors to have Electro-magnetic Hold-Opens, furnished and installed by the Fire alarm system supplier. All schools - 350#.

1. Utilize screw-on mounting. Adhesive type installation shall not be acceptable. (a) Pemko Manufacturing.

2. Zero International.

2.02 GENERAL REQUIREMENTS FOR DOOR HARDWARE PRODUCTS

A. Provide products that comply with the following:

1. Applicable provisions of Federal, State, and local codes.
2. ANSI/ICC A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
3. Applicable provisions of NFPA 101, Life Safety Code.
4. Fire-Rated Doors: NFPA 80.
5. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.
6. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.

B. Finishes: Identified in schedule at end of section.

2.03 KEYING

A. Door Locks: Grand master keyed.

1. For remodel or limited expansion projects, key to existing keying system as directed by Program Manager or Owner.
2. For new construction or extensive remodel projects, key as directed by Program Manager or Owner. Seldom used keyways are to be utilized, such as Corbin L1, L2, or L3 series, or Russwin H Series.

B. Supply keys in the following quantities:

1. 6 master keys (New Key Systems Only).
2. 6 grand master keys (New Key Systems Only).
3. 6 construction keys, or more as required by Contractor, at no additional cost to Owner.
4. 2 change keys for each lock.

C. ALL KEYS SHALL HAVE THE ROOM NUMBER and MASTER DESIGNATION STAMPED INTO THE KEY.

2.04 KEY CABINET (NEW CONSTRUCTION ONLY)

A. Cabinet Construction: Sheet steel construction, piano hinged door with key type lock ; Model 1205 with index pocket on door as manufactured by Lund. (New Buildings Only)

B. Cabinet Size: Size for project keys plus 10 percent growth. For large projects and where approved by the Owner multiple cabinets may be utilized.

C. Horizontal metal strips for key hook labeling with clear plastic strip cover over labels. All labeling to be completed by the Contractor.

D. Finish: Baked enamel, Gray color.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that doors and frames are ready to receive work and dimensions are as indicated on shop drawings.
- B. Verify that electric power is available to power operated devices and of the correct characteristics.

3.02 INSTALLATION

- A. All door hardware is to be installed by the Vendor.
- B. Install wood blocking backup for all wall stops and electro-magnetic hold-opens.
- C. All closers to be "through bolted" to the doors, whatever the closer element may be. If the arm attaches to the door, it is to be "through bolted." If the body of the closer attaches to the door, it is to be "through-bolted."
- D. Install hardware in accordance with manufacturer's instructions and applicable codes.
- E. Use templates provided by hardware item manufacturer.
- F. Install hardware on fire-rated doors and frames in accordance with code and NFPA 80.
- G. Mounting heights for hardware from finished floor to center line of hardware item: As listed in Schedule, unless otherwise noted:
- H. Provide rough-in for Card Reader Entrance(s) at locations identified on the Plans. Installation to include all necessary 110v power supply points, conduit to door frame and provisions for striker installation. Contractor shall coordinate with Program Manager or Owner for intended system to be utilized.

3.03 FIELD QUALITY CONTROL

- A. Provide an Architectural Hardware Consultant (AHC) to inspect installation and certify that hardware and installation has been furnished and installed in accordance with manufacturer's instructions and as specified. Installer/AHC is to contact Mr. Raul Chairez with Tulsa Public Schools to be present during installation.

3.04 ADJUSTING

A. Adjust work under provisions of Section 01700.

B. Adjust hardware for smooth operation.

3.05 PROTECTION OF FINISHED WORK

A. Protect finished Work under provisions of Section 01700.

B. Do not permit adjacent work to damage hardware or finish.

3.06 SCHEDULE

A. See Finish Hardware Schedule in the next section.

END OF SECTION

SECTION 08715

Finish Hardware Schedule

Keying Instructions – (No Substitution)

Key All Locks To The Existing Corbin Russwin Restricted Keyway System. Provide Temporary Construction Master Keyed Cores (CT6R) For All Exterior Doors, And Lock-Up Rooms As Required. Provide Disposable Plastic Temporary Cores (CT6D) For All Other Locks. Provide Twenty Construction Keys. Provide Permanent 8000 Series Cores, Keyed As Required, For Final Installation After Project Completion. Provide complete bitting schedule.

Hinges – (Or Equal Acceptable)

Pemko Continuous CFM 83 HD1 – Exterior Hollow Metal and all doors on Early Childhood

Pemko Continuous KDFM 83 HD1 – All Aluminum Storefront

Continuous Hinges By Door Supplier – All FRP Doors

PBB 4B81 HD Hinges – Interior Multi Use Restrooms, Cross Corridor, Stairs, Interior Doors Equipped With Exit Devices, Doors Over 3'0" Wide

PBB BB81 Std Hinges – Balance of Interior Doors

Exit Devices – (No Substitution)

Von Duprin 99 series US28 finish (313AN @ Storefront) with Corbin Russwin 6 pin restricted keyway interchangeable core cylinders at keyed functions & mullions. 99NL-OP -

Keyed Entry (only one keyed per bank of doors)

99EO - Inactive Entry Pairs, Exit Only Doors

99L-F W/ 03 Lever – Fire Rated

99L-F-2 W/03 – Fire Rated Classrooms, Libraries, and Gyms etc.

9947EO-F – Cross Corridor Fire Rated Double Egress

9947L-F W/03 Lever – Cross Corridor Fire Rated Standard Pair

330 Dummy Bar at Full Glass Non Latching Doors

Removable Mullions – (No Substitution)

Von Duprin Keyed Removable KR4954 or KR9954. KR4854 with 6111 electric strike At card access doors. (Card access system by others)

Locks – (No Substitution)

Corbin Russwin mortise with 6 pin restricted keyway interchangeable core cylinders, LWA design interior, LWM design exterior, 630 finish.

ML2052 Corridor Office Doors

ML2057 Mech, Elect, Janitor, Non Classroom Storage (M30 Half Trim At Exterior W/ Flush or Vandal Resistant Pull)

ML2055 Offices, Classroom Storage

ML2065 w/M19N "Secure Indicator Display" & Thumbturn inside Classrooms – All Classrooms

ML2022 Adjoining Classrooms

ML2030 M19V Single Toilets

DL4000 series deadlocks function as required

Double Mechanical Closets have double doors, shall be rated 20 minute. All single closets non rated doors.

Flush Bolts - (Or Equal Acceptable)

Ives FB458B US26D finish manual flush bolt (use top bolt only where security is not an issue) provide long top rod as required

Ives FB51T US32D finish top self latching flush (use at non fire rated wood or hollow metal doors to ensure locking at most applications) provide long top rod as required

Ives FB52T US32D finish top self latching flush (use at fire rated hollow metal doors) provide long top rod as required

Ives FB62T US32D finish top self latching flush (use at fire rated wood doors) provide long top rod as required

Closers – (No Substitution)

LCN 4041 series AL finish (DKB finish at Aluminum Storefront)

All closers to be parallel arm application, except regular arm application may be used at inswinging doors to non student areas such as Mech, Elect, Janitor, etc. Where wall stop cannot be used, use "Spring Cush" application. Use "EDA" or "Spring Cush" At exterior doors. At Aluminum Storefront provide drop plates, shoe supports, and spacers as required. Install all closers with "TBSRT" thru bolt application.

None required on furnace closets.

Automatic Operators – (No Substitution)

LCN 4642 AL finish (DKB finish at Aluminum Storefront) with 8310 series hardwired actuators & bollards as required.

Door Pulls – (Or Equal Acceptable)

Rockwood BF158 W/ Type 1XHD (3/8" thru bolt) mounting US32D finish (US10B finish at Aluminum Storefront) use at entry doors w/ exit devices

Integral Flush Pulls at FRP Doors (except Elementary & Early Childhood, use BF158)

Rockwood 111 x 70C US32D finish at other push/pull applications – restrooms etc. with 70E (Doors W/ no lite) or 70C (W/ lite) push plates.

Rockwood 94L US32D finish flush pull

Ives VR910NL & VR910DT US32D finish vandal resistant exit device trim (do not use on elementary or early childhood)

Kickplates – (Or Equal Acceptable)

Rockwood K1050 series US32D finish at wood or hollow metal doors, 2" less than door width X 10" high standard or 30" high at kitchen (provide 3" less than door width at doors with finger guards)

Overhead Stops – (Or Equal Acceptable)

Glynn Johnson 90 series W/ Friction Hold Open at doors where standard wall or floor stop cannot be used.

Door Stops – (Or Equal Acceptable)

Rockwood 406 US32D finish wall mount where possible

Rockwood 442 US26D finish floor mount if required

Rockwood 491S US26D finish floor stop & holder at classroom doors

Magnetic Holders - (Or Equal Acceptable)

Rixson 993 with optional release button (300 lb holding force) controlled by fire alarm system (by others) coordinate

Thresholds - (Or Equal Acceptable)

National Guard 425 saddle typical public access doors National Guard 883S W/bumper Mech, Elec, etc.

Weather Seal - (Or Equal Acceptable)

Pemko S88D gasketing @ exterior & fire doors, and @ sound doors in addition to heavy surface seals

National Guard 200SA sweep @ doors with saddle threshold (use DKB finish at aluminum storefront), not required @ FRP doors

National Guard 5100S mullion seal @ removable mullions at exterior, fire, and sound doors (use 5100N at doors with bronze finish mullions)

National Guard – 16A overhead drip @ doors with no overhead protection (use DKB finish at aluminum storefront) provide 4" longer than door width

Finger Guards – No Substitution

National Guard 2248A (DKB at Aluminum Storefront) custom length full height at all doors on Early Childhood only

END OF SECTION

SECTION 09261
GYP SUM BOARD / FIBERGLASS REINFORCED
PANEL ASSEMBLY SYSTEMS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Drywall Grid Systems
- B. Metal channel ceiling framing
- C. Acoustic insulation
- D. Gypsum Board
- E. Fiberglass Reinforced Panels (FRP)
- F. Joint treatment and accessories

1.02 REFERENCES

- A. ASTM C 36 - Standard Specification for Gypsum Wallboard; 1997.
- B. ASTM C 475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 1994.
- C. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 1998.
- D. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 1997.
- E. ASTM C 835, ASTM A 366, ASTM A 653 – Grid System
- F. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board; 1998.
- G. ASTM C 1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases; 1998.
- H. GA-201 - Using Gypsum Board for Walls & Ceilings; Gypsum Association; 1990.
- I. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 1996.
- J. GA-600 - Fire Resistance Design Manual; Gypsum Association; 1997.

1.03 SUBMITTALS

- A. Provide sample FRP with product literature. Recommend adhesive.

- B. Product Data: Provide data on metal framing.

1.04 QUALITY ASSURANCE

- A. Perform in accordance with ASTM C 840. Comply with requirements of GA-600 for fire-rated assemblies.

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable code for fire rated assemblies as indicated on drawings.
- B. All finishes shall conform to the applicable Flame Spread Classification (rating of 25-75) in all corridors.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Gypsum Board – Type X in Corridors and Stairwells:
 - 1. G-P Gypsum Corp.
 - 2. National Gypsum Co.
 - 3. United States Gypsum Co.
 - 4. Substitutions: Not permitted.
- B. Grid System:
 - 1. Armstrong Co.
 - 2. United States Gypsum Co.
 - 3. Chicago Metallic Co.
- C. Fiberglass Reinforced Panels:
 - 1. Sequentia, Inc., as distributed by A & D Supply, Tulsa Oklahoma
 - 2. NUDO Products, Inc., as distributed by Sooner Ceilings – (918) 744-6260.

2.02 METAL FRAMING MATERIALS

- A. Load bearing Framing System Components: ASTM C 645; galvanized sheet steel, size and gage to comply with ASTM C 754 at spacing indicated; maximum deflection L/240 at 5 psf.
 - 1. Grid System: 1 ½" flange, Heavy duty Metal Grid Suspended Tee System
 - 2. Ceiling Channels: C shaped.
- B. Ceiling Hangers: ASTM C 754.

2.03 GYPSUM BOARD MATERIALS

- A. Fire Rated Gypsum Wallboard: ASTM C 36; Type X, UL or WH rated; sizes to minimize joints in place; ends square cut.
 - 1. Thickness: 5/8 inch.
 - 2. Edges: Tapered.

2.04 FIBERGLASS REINFORCED PANELS/LINER PANEL

- A. Structoglas® #77136 – 1200 Fire Retardant Panel, Class A, textured on one side, color: white, thickness: .09", Size: 4 x 8 panel by Sequentia.
- B. Fiberlite – LPF9-8-FRP Liner Panel, Class A, thickness: .09", size: 4 x 8, textured by NUDO Products, Inc.
- C. Other manufacturer's to match Structoglas® #77136 and Class A Fire Rating for corridors.

2.05 ACCESSORIES

- A. Acoustic Insulation: ASTM C 665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 1/2 inch, as noted on plan.
- B. Corner Beads: Galvanized steel.
- C. Trim: ASTM C 840; Bead type as detailed.
- D. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.
 - 1. Ready-mixed vinyl-based joint compound.
- E. Screws: ASTM C 1002; self-drilling type; cadmium-plated for exterior locations.
- F. Adhesive: Henry #117. Follow manufacturer's recommendation as some adhesives may not be compatible.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

- A. Metal Framing: Comply with ASTM C 754 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
 - 1. Level ceiling system to a tolerance of 1/1200.
 - 2. Install bracing as required at exterior locations to resist wind uplift.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

3.04 GYPSUM BOARD INSTALLATION

- A. Comply with ASTM C 840. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Fire-Rated: Install gypsum board vertically, with edges and ends occurring over firm bearing.
- C. Installation on Metal Framing: Use screws for attachment of all gypsum board.

3.05 INSTALLATION OF FIBERGLASS REINFORCED PANELS

- A. Preparation: Ceiling must be flat, clean, dry and free of all dirt, dust or grease. When applying panels over foam insulation, an approved thermal barrier system must be used. Consult owner.
- B. Adhesive: Wall liner should be installed with 100% adhesive coverage (recommended method). Fasteners are used in conjunction with adhesive in certain applications, where needed (high moisture, uneven substrate, high abuse or large panels on ceiling).
- C. Expansion: Leave not less than ¼" gap at ceiling 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 caulking to complete moisture seal.
- D. Fastener Positioning: 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.
- E. Sealing and Caulking: Caulk all corner seams, ceiling and base junctures, and fastener holes.
- F. Moldings and Trim: All exposed panel edges shall be finished with appropriate Structoglas® one-piece or two-piece non-staining vinyl extruded moldings.

END OF SECTION

SECTION 09310

PORCELAIN / CERAMIC / QUARRY TILE

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Tile
- B. Reference Standards:
 - 1. ANSI A108.5 – Porcelain Tile installed in Dry-Set Portland Portland_Cement Mortar or Latex P. C. Mortar.
 - 2. TCA 137.1 – Recommended Standard Specifications for Porcelain Tile.
 - 3. Tile Council of America (TCA) – Handbook for Porcelain Tile Installation.

1.02 SAMPLES

- A. Submit sample panel of each type, color, and pattern of tile required. Provide full size samples for each type of trim and accessory.
- B. Submit sample of grout.

1.03 ENVIRONMENTAL CONDITIONS

- A. Provide sufficient heat and ventilation in areas where work of this Section is being preformed to allow tile to set properly. Take precautionary measures necessary to ensure that excessive temperature changes do not occur. Maintain installation area at 50 F or above.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Tile: Dal-Tile, American Olean, or Equivelant
- B. Grout: Hydroment - dry tile grout fortified with 425 multi-purpose acrylic latex Admixture.
- C. Substitutions: In accordance with Section 01600

2.02 MATERIALS

- A. Wall Tile: Sizes as indicated. Trim pieces as needed: inside corners coved, outside corners bull nosed.
- B. See drawings for specific products.

2.03 COMPONENTS

- A. Setting Bed and Bond Coat: Thinset consisting of Ultra or Multi-Flex Latex-Portland cement mortar.
- B. Leveling Coat: Cementitious mortar with latex additive for water resistance.

- C. Grout: Unsanded type with Acrylic Latex Grout Additive; color selected by Architect.
- D. Water: Clean, fresh and free of deleterious substances.

2.04 MIXING

- A. Mix and proportion cementitious materials for site made leveling coats, bond coats, and grout as recommended by the TCA Handbook for Porcelain Tile Installation.
- B. Mix and proportion pre-mix setting bed, bond coat, and grout materials in accordance with manufacturers' recommendations.

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine surfaces to receive tile. Ensure surfaces are level, with maximum surface variation of ¼-inch in 10-feet, clean and well cured. Do not commence until surface conditions are within tolerances required for proper installation.
- B. Prior to installing floor tile ensure surfaces slope to drains. Where ceramic tile meets thicker material apply leveling coat to make finished surfaces match, extend transition 4-feet.

3.02 INSTALLATION

- A. Installation Standards:
 - 1. Install wall tile in accordance with Tile Council of America Method #W243 and #W202.
- B. Place tile in accordance with pattern indicated. Carefully plan tile layouts. Ensure pattern is uninterrupted from one wall and/or floor surface to the next.
- C. Neatly cut tile around fixtures. Accurately form corners, base, intersections and returns.
- D. Ensure tile joints are uniform in width, subject to normal variance in tolerance allowed in tile size. Ensure joints are watertight, without voids, cracks, excess mortar or grout.
- E. Install coved internal wall angles and bull nosed external angles.
- F. Sound tile after setting. Remove and replace hollow sounding units.
- G. Keep expansion/contraction joints free of mortar or grout
- H. Allow tile to set for a minimum of 48 hours prior to grouting.
- I. Completed installation to be free of broken, damaged and faulty tile.

3.03 EXTRA STOCK

- A. Deliver to Owner 5 square feet of each tile and color used; include with closeout submittals.

END OF SECTION

SECTION 09511

SUSPENDED ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

1.02 REFERENCES

- A. ASTM C 635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 1997.
- B. ASTM C 636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 1996.
- C. ASTM E 580 - Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Moderate Seismic Restraint; 1996.
- D. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on suspension system components.
- C. Samples: Submit two samples 6 x 6 inch in size illustrating material and finish of acoustical units.
- D. Samples: Submit two samples each, 12 inches long, of suspension system main runner.

1.04 QUALITY ASSURANCE

- A. Installer shall be a company specializing in the installation of suspended acoustical ceilings with a minimum of three years documented experience.

1.05 ENVIRONMENTAL REQUIREMENTS

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

1.06 PROJECT CONDITIONS

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Install acoustical units after interior wet work is dry.

1.07 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Provide 5 percent of total acoustical unit area of each type of acoustical unit for Tulsa Public Schools' use in maintenance of project.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

- A. Manufacturers:
 - 1. Armstrong World Industries, Inc or CertainTeed
 - a. Classrooms, Halls, Offices & Cafeterias: 2' x 4' Armstrong #1729 Humiguard Plus-Fine fissured with BioBlock paint on face and back of panels; 2 x 4 CertainTeed HHF-197, High Humidity, Fine-fissured with BioShield paint on face and back of panel. Color: White
 - b. Gymnasiums and designated high abuse areas: 2' x 4' Armstrong #860 Armatuff or #862 where plans indicate fire rated is required; 2 x 4 CertainTeed PSB-197 (Fire-rated). Color: White
 - c. Libraries: 2' x 2' Armstrong #1910 Humiguard-Plus, Ultima/very fine texture with BioBlock paint on face and back of panels; 2 x 2 CertainTeed #1222-OVT-1-Symphony NRC-.65 - .70 x 5/8". Color: White.
 - d. Kitchens, Restrooms & Classroom Toilet Rooms: 2' x 4' Armstrong #605 Ceramaguard with BioBlock/BioShield & Humiguard-Max; 2 x 4 or CertainTeed Vinylrock 1140-CRF-1 (Fire-rated) or 1100-CRF-1 (Non-perforated) BioBlock/BioShield & Humiguard. Color: White

2. Substitutions: As approved by owner.
- B. Acoustical Panels: ASTM E 1264 Type III, Painted mineral fiber, conforming to the following:
 1. Size: 24 x 24 inches, or 24 x 48 inches.
 2. Thickness: 5/8 inches.
 3. Composition: Wet felted.
 4. Density: 1.0 lb/cu ft.
 5. NRC Range: 0.55 to 0.65.
 6. Edge: Square.
 7. Surface Color: White.
 8. Surface Pattern: Non-directional fissured.

2.02 SUSPENSION SYSTEM(S)

- A. Manufacturers:
 1. Armstrong World Industries, Inc.
 2. Chicago Metallic Corp.
 3. CertainTeed
 4. Substitutions: See Section 01600 - Product Requirements.
- B. Suspension Systems - General: ASTM C 635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.
 1. Profile: Tee; 15/16 wide face.
 2. Construction: Double web, Hot dipped galvanized.
 3. Finish: white over galvanized substrate.
- C. Match Acoustical Tile Manufacturer with same grid manufacturer to obtain 15-year warranty. 15/16" Grid System. Color: White.

2.03 ACCESSORIES

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Perimeter Moldings: Same material and finish as grid.
 1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.
- C. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C 636, ASTM E 580, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected ceiling plan.
- D. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
- E. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.
- F. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- J. Do not eccentrically load system or induce rotation of runners.
- K. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 1. Use longest practical lengths.
 2. Overlap and rivet corners.
- L. Form expansion joints as detailed. Form to accommodate plus or minus 1 inch movement. Maintain visual closure.

3.03 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install units after above-ceiling work is complete.
- E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- F. Cutting Acoustical Units:
 - 1. Cut to fit irregular grid and perimeter edge trim.
 - 2. Make field cut edges of same profile as factory edges.
 - 3. Double cut and field paint exposed reveal edges.
- G. Install hold-down clips on panels within 20 ft of an exterior door.

3.04 ERECTION TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

3.05 SCHEDULE

- A. See Room Finish Schedule.

END OF SECTION

SECTION 09650

RESILIENT BASE & FLOORING TRANSITION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient base.
- B. Flooring transition.

1.02 REFERENCES

- A. ASTM F 1861 - Standard Specification for Resilient Wall Base; 1998.
- B. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 1998.

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Verification Samples: Submit two samples, 12-inch long in size illustrating color and pattern for each wall base and transition product and color specified.
- D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning and stripping.

1.04 ENVIRONMENTAL REQUIREMENTS

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by Johnsonite, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

1.05 QUALITY ASSURANCE

- A. Single-Source Responsibility for Flooring: Obtain each type, color and pattern of flooring from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the work.

1.06 PROJECT CONDITIONS

- A. Sequence wall base work to ensure that wall base is not installed until installation of ALL millwork that abuts base material is complete and approved.
- B. Install resilient products after other finishing operations, including painting, have been completed.
- C. Maintain ambient temperatures within range recommended by Johnsonite, but not less than 65 deg F (18 deg C) or more than 85 deg F (29 deg C) in spaces to receive resilient products during the following time periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- D. Maintain the ambient relative humidity between 40% and 60% during installation.
- E. Until Substantial Completion, maintain ambient temperatures within range recommended by Johnsonite, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

- F. Do not install resilient wall base until they are at the same temperature as the space where they are to be installed.

1.01 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Provide: 50 lineal feet of each color of base or transition specified.

1.02 WARRANTY

- A. Provide manufacturer's standard performance guarantees or warranties that extend beyond a one year period.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Resilient Base: ASTM F 1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove, and as follows:
 - 1. Height: 4 inch.
 - 2. Thickness: 0.125 inch thick.
 - 3. Finish: Satin.
 - 4. Length: 4 foot sections.
 - 5. Job formed corners using heat.
 - 6. Color: as indicated on drawings.
 - 7. Manufacturers:
 - (a) Johnsonite.
 - (b) Substitutions: none.
 - 8. Flexibility: ASTM F 137 - Will not crack, break, or show any signs of fatigue when bent around a 1/4" (6.4 mm) diameter cylinder.
- B. Flooring Transition:
 - 1. Install a flooring transition strips between all material type changes, even if the same height, as recommended by flooring manufacturer for both edges and transitions of flooring materials specified.
 - 2. Provide transitions of clear anodized aluminum.
 - 3. Provide vertical lip on transitions of maximum 1/4 inch (6 mm).
 - 4. Provide bevel change in level between 1/4 and 1/2 inch (6 and 13 mm) with a slope no greater than 1:2.

2.02 ACCESSORIES

- 1. Primers & Adhesives: as recommended by wall base and transition strip manufacturer. Tape shall not be accepted.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are smooth and flat within tolerances specified in Section 03300.
- B. Verify that surfaces are dust-free, and free of substances which would impair bonding of adhesive materials surfaces.

3.02 PREPARATION

- A. Wall Base and adhesives must be site conditioned at room temperature for a minimum of 48 hours prior to, during, and after installation. Room temperature must be maintained between 65deg and 85deg F (18deg and 30degC) with

HVAC system operating. A minimum temperature of 55deg F (13degC) must be maintained afterwards.

1. The ambient relative humidity should be between 40% and 60%.
2. All walls must be clean, smooth, flat and dry. The surface must be free of all dust, loose particles, solvents, paint, grease, oil, wax, alkali, sealing/curing compounds, old adhesive, and any other foreign material, which could affect installation. Remove existing adhesive mechanically – do not use chemical adhesive removers or solvents.
3. Fill all depressions, cracks, and other surface irregularities with a good quality patching compound.

3.03 INSTALLATION

A. Wall Base:

1. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
2. Miter internal corners. At external corners, use job formed units. At exposed ends, use job formed units.
3. Job-formed corners:
 - a. Outside corners: Form by bending without producing discoloration (whitening) at bends.
 - b. Inside corners: Butt one piece to corner then scribe next piece to fit.
4. Install base on solid backing. Bond tightly to wall and floor surfaces.
5. Scribe and fit to door frames and other interruptions.
6. Fill voids along the top edge of base at masonry walls with caulk.
7. Avoid excess adhesive in corners.
8. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
9. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates. Tape shall not be allowed.
10. Do not stretch resilient base during installation.

B. Transition Strips:

1. Provide transitions where flooring termination is higher than the adjacent finished flooring and at transitions between different flooring materials.
2. When required, locate transitions under door centerline.
3. Transitions are not required at doorways where thresholds are provided.
4. Secure transitions with either adhesive or anchors as recommended by the manufacturer.
5. Prepare and apply adhesives in accordance with manufacturer's printed directions.

3.04 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean base and transition strip products in accordance with manufacturer's instructions.

END OF SECTION

SECTION 09680

CARPET

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Carpet, direct glue down.
- B. Accessories.

1.02 RELATED SECTIONS

- A. Section 09650: Resilient Wall Base

1.03 REFERENCES

- A. ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 1998.
- B. CRI 104 - Standard for Installation of Commercial Textile Floor Covering Materials; Carpet and Rug Institute; 1996.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate seaming plan, method of joining seams, direction of carpet pile and pattern, location of edge moldings and edge bindings, layout of flat wire system, and locations of base materials.
- C. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- D. Samples: Submit two samples 12x12 inch in size illustrating color and pattern for each carpet specified.
- E. Manufacturer's Installation Instructions: Indicate special procedures.
- F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.05 QUALITY ASSURANCE

- A. The carpet selections shown hereafter are the only acceptable products pursuant to Master Agreement between Tulsa Public Schools and Tandus/Collins & Aikman (competitively bid), and vendor charges for the material are subject to price verification by TPS.
- B. Installer Qualifications: Company specializing in installing carpet with minimum three years experience, and certified by Collins and Aikman as an approved installer.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

- B. Maintain minimum 70 degrees F ambient temperature 24 hours prior to, during and 24 hours after installation.
- C. Ventilate installation area during installation and for 72 hours after installation.

1.07 PROJECT CONDITIONS

- A. Sequence work to ensure carpet is not installed until installation of all millwork that abuts carpet is complete and approved.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Carpet:
 - 1. Tandus
 - 2. Substitutions: **None allowed for carpet or adhesive; Not permitted.**
- B. Walk-off carpet:
 - 1. Tandus – Abrasive Action

2.02 ACCESSORIES

- A. Sub-Floor Filler: Type recommended by carpet manufacturer, however gypsum based fillers will not be accepted.
- B. Tackless Strip: Carpet gripper, of type recommended by carpet manufacturer to suit application, with attachment devices.
- C. Flooring Transition Strips: See Section 09650; color as indicated in the Room Finish Schedule.
- D. Adhesive: as recommended by the carpet manufacturer.
- E. Seam Adhesive: Recommended by manufacturer.
- F. Contact Adhesive: Compatible with carpet material; releasable type.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that floor surfaces are smooth and flat within tolerances specified in Section 03300, are dust-free, and are ready to receive carpet.
- B. Verify that concrete sub-floor surfaces are ready for carpet installation by testing for moisture emission rate (per ASTM F 1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride, 1998) and alkalinity; obtain instructions if test results are not within the following limits:
 - 1. Moisture emission rate: Not greater than 3 lb per 1000 sq ft per 24 hours when tested using calcium chloride moisture test kit for 72 hours.
 - 2. Alkalinity: pH range of 5-9.

3.02 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

- B. Apply, trowel, and float filler (gypsum based filler prohibited) to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Clean substrate.

3.03 INSTALLATION – GENERAL

- A. Install carpet in accordance with manufacturer's instructions and CRI 104.
- B. Verify carpet match before cutting to ensure minimal variation between dye lots.
- C. Lay out carpet in accordance with approved seaming plan.
 - 1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
 - 2. Do not locate seams perpendicular through door openings.
 - 3. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.
 - 4. Locate change of color or pattern between rooms under door centerline.
 - 5. Provide monolithic color, pattern, and texture match within any one area.
- D. Install carpet tight and flat on subfloor, well fastened at edges, with a uniform appearance.

3.04 DIRECT-GLUED CARPET

- A. Double cut carpet seams, with accurate pattern match. Make cuts serpentine overlay per manufacturer. Apply seam adhesive to cut edges of carpet immediately.
- B. Apply contact adhesive to floor uniformly at rate recommended by manufacturer. After sufficient open time, press carpet into adhesive.
- C. Apply seam adhesive to the base of the edge glued down. Lay adjoining piece with seam straight, not overlapped or peaked, and free of gaps.
- D. Roll with appropriate roller for complete contact of adhesive to carpet backing.
- E. Trim carpet neatly at walls and around interruptions.
- F. Complete installation of edge strips, concealing exposed edges. Bind cut edges where not concealed by edge strips.

3.05 CLEANING

- A. Remove excess adhesive from floor and wall surfaces without damage.
- B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09900

PAINTS AND COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 REFERENCES

- A. Painting and Decorating Contractors of America–P.D.C.A. Type 1 Manual.
- B. ASTM D 4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 1992 (Re-approved 1997).

1.03 DEFINITIONS

- A. P.D.C.A. standards and interpretations.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on all finishing products.
- C. Verification samples: submit a minimum of (3) three painted 6" x 10" (+/-) "pull down" samples, illustrating selected colors and textures for each color and system selected. Each sample to be identified on the backside with project ID and project color number. One set of samples will be returned to the CM, to remain at the job site for reference.
- D. Submit sealer and stain finishes on material on which that particular finish is to be used.
- E. Manufacturer's instructions: Indicated special surface preparation procedures.
- F. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.
- G. MSDS for each product to be utilized.

1.05 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the work of this section with minimum three (3) years experience.
- B. Job Foreman: Company shall have a job foreman who speaks English on the job site during normal working hours (with a minimum of 5 years experience).

1.06 REGULATORY REQUIREMENTS

- A. Comply with safety recommendations of MSDS for each product utilized.
- B. Conform to applicable code for flame and smoke rating requirements for products and finishes.

1.07 DELIVERY, STORAGE, AND PROTECTION

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

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- C. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

1.09 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Supply 1 gallon of each color; store where directed.
- C. Label each container with color in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Paints: Pittsburgh Paint Co.
- B. Transparent Finishes: Pittsburgh Paint Co.
- C. Stains: Pittsburgh Paint Co.
- D. Primer Sealers: Pittsburgh Paint Co.
- E. Substitutions: See Section 01600 - Product Requirements.

2.02 MATERIALS

- A. Provide best of their respective kinds, delivered to job in original unopened containers, plainly marked with manufacturer's name, name of product and color. A schedule of colors will be prepared by TPS upon receipt of all paint samples and other items required for color selections.
 - 1. Materials: PPG, SHERWIN-WILLIAMS, KELLY MOORE, BENJAMIN MOORE, and PORTER. Submit product information for equal material to TPS for approval prior to color selections.

2.03 PAINT SYSTEMS – EXTERIOR

- A. Paint WE-OP-3A - WOOD, Opaque, 3 coats
 - 1. One coat of PPG 17-941 Seal Grip Interior/Exterior Alkyd Universal Wood Primer
 - 2. Two coats of PPG 78 Line Sun-Proof Exterior 100% Acrylics Semi-Gloss Enamel
- B. Paint WE-OP-3L - WOOD, Opaque, 3 coats
 - 1. One coat of PPG 6-609 Speedhide Exterior Latex Wood Primer.
 - 2. Two coats of PPG 78 Line Sun-Proof Exterior 100% Acrylics Semi-Gloss Enamel
- C. Paint CE-OP-3L - CONCRETE/MASONRY, Opaque, 3 coats
 - 1. One coat of PPG 6-7 Speedhide Interior/Exterior Latex Block filler
 - 2. Two coats of PPG 78 Line Sun-Proof Exterior 100% Acrylics Semi-Gloss Enamel
- D. Paint GE-OP-3L - GYPSUM BOARD AND PLASTER, Opaque, 3 coats
 - 1. One coat of PPG 17-921 Seal Grip Interior/Exterior Universal Acrylic Primer
 - 2. Two coats of PPG 78 Line Sun-Proof Exterior 100% Acrylics Semi-Gloss Enamel
- E. Paint ME-OP-3A - FERROUS METALS, Unprimed, 3 coats
 - 1. One coat of PPG 6-208 Speedhide Interior/Exterior Rust Inhibitive Metal Primer
 - 2. Two coats of PPG 90-474 Pitt-Tech DTM Acrylic Satin Enamel
- F. Paint MgE-OP-3L - GALVANIZED METALS, 3 coats
 - 1. One coat of PPG 90-712 Pitt-Tech DTM Acrylic Metal Primer
 - 2. Two coats of PPG 90-474 Pitt-Tech DTM Acrylic Satin Enamel
- G. Paint MaE-OP-3A - ALUMINUM and COPPER, Unprimed, 3 coats
 - 1. One coat of PPG 97-687 Polyclutch Wash Primer
 - 2. Two coats of PPG 90-474 Pitt-Tech DTM Acrylic Satin Enamel
- H. Paint E-PAV - PAVEMENT MARKING PAINT
 - 1. Two coats of Richards 3007 Lead Free Yellow Latex Traffic Coating

2.04

PAINT SYSTEMS - INTERIOR:

- A. Paint WI-OP-3A - WOOD, Opaque, 3 coats
 - 1. One coat of PPG 17-956 Seal Grip Interior Alkyd Wood Primer/Under coater
- B. Paint WI-OP-3L - WOOD, Opaque, 3 coats
 - 1. One coat of PPG 6-2 Speedhide Interior Latex Wood Primer
 - 2. Two coats of PPG 6-500 Speedhide Interior Latex Semi-Gloss
- C. Paint WI-TR-V - WOOD, Transparent, Varnish, No Stain
 - 1. Three coats of PPG 43886 Clear Polyurethane Satin Varnish (Sand between each coat)
- D. Paint WI-TR-VS - WOOD, Transparent, Varnish and Stain
 - 1. One coat of PPG 44500 Oil Wiping Stain
 - 2. Three coats of PPG 43886 Clear Polyurethane Satin Varnish (Sand between each coat)
- E. Paint CI-OP-3L - CONCRETE / MASONRY, Opaque, 3 coats
 - 1. One coat of PPG 6-7 Speedhide Interior/Exterior Latex Block filler
 - 2. Two coats of PPG 6-500 Speedhide Interior Latex Semi-Gloss
- F. Paint MI-OP-3A - FERROUS METALS, Unprimed, 3 coats
 - 1. One coat of PPG 6-208 Speedhide Interior/Exterior Rust Inhibitive Alkyd Metal Primer
 - 2. Two coats of PPG 6-1110 Speedhide Interior Alkyd Semi-gloss Enamel
- G. Paint MI-OP-2A - FERROUS METALS, Primed, 2 coats
 - 1. Touch up if needed with PPG 6-208 Speedhide Interior/Exterior Rust Inhibitive Alkyd Metal Primer
 - 2. Two coats of PPG 6-1110 Speedhide Interior Alkyd Semi-Gloss Enamel
- H. Paint Mgl-OP-3A - GALVANIZED METALS, 3 coats
 - 1. One coat of PPG 6-209 Speedhide White Galvanized Metal Primer
 - 2. Two coats of PPG 6-1110 Speedhide Interior Alkyd Semi-Gloss Enamel
- I. Paint Mai-OP-3A - ALUMINUM, Unprimed, 3 coats
 - 1. One coat of PPG 97-687 Polyclutch Wash Primer
 - 2. Two coats of PPG 6-1110 Speedhide Interior Alkyd Semi-Gloss Enamel
- J. Paint GI-OP-3L - GYPSUM BOARD AND PLASTER, 3 coats
 - 1. One coat of PPG 6-2 Speedhide Interior Latex Primer.
 - 2. Halls and other rooms: Three coats of PPG 6-500 Speedhide Interior Latex Eggshell
 - 3. Classrooms: Two coats of PPG 6-411 Speedhide Interior Latex Eggshell

- K. Paint GI-OP-2E - GYPSUM BOARD AND PLASTER, Water Born Epoxy (Toilets, Kitchen, Drinking Fountains)
 - 1. One coat of PPG 17-921 Seal-Grip Interior/Exterior Acrylic Latex Primer/Sealer
 - 2. Two coats of PPG 16-510 Pitt-Glaze Precatalyzed WM Semi-Gloss Epoxy
- L. Existing Lockers – Wash with Peso. Sand to achieve a smooth surface free of all nicks and scratches by sanding to a featheredge.
 - 1. Two coats of PPG 95-8000 Pitt-Thane Ultra Urethane Enamel

2.05

2.06 SURFACES NOT TO BE PAINTED:

- A. Surfaces permanently concealed from view, unless noted to receive finish.
- B. Materials or equipment with a complete factory applied finish unless otherwise noted.
- C. Finish hardware unless specifically noted otherwise or previously painted.
- D. Non-ferrous metals unless specifically noted otherwise or previously painted.
- E. Plumbing fixtures.
- F. Lighting Fixtures.

2.07 ACCESSORY MATERIALS

- A. Accessory Materials: Linseed oil, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified; commercial quality.
- B. Patching Material: Latex filler – Gyp Board and Block
 - 1. Plaster Walls
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive Work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. Test shop-applied primer for compatibility with subsequent cover materials.

- D. Notify Architect of any incompatibilities of specified finish on substrates, including existing finishes.
- E. Contractor shall measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 - 1. Plaster and Gypsum Wallboard: 12 percent.
 - 2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
 - 3. Interior Wood: 15 percent, measured in accordance with ASTM D 4442.
 - 4. Exterior Wood: 15 percent, measured in accordance with ASTM D 4442.

3.02 PREPARATION

- A. Surface Appurtenances: Remove electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- B. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- C. Marks: Seal with shellac those which may bleed through surface finishes.
- D. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- E. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.
- F. Gypsum Board Surfaces to be Painted: Clean thoroughly all wallboard surfaces to be painted. Sand smooth all rough surfaces. Fill minor defects with filler compound. Spot prime defects after repair.
- G. Aluminum Surfaces to be Painted: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- H. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- I. Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
- J. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- K. Interior Wood Items to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes

and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

- L. Interior Wood Items to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.
- M. Exterior Wood to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior caulking compound after prime coat has been applied. Back prime concealed surfaces before installation.
- N. Exterior Wood to Receive Transparent Finish: Remove dust, grit, and foreign matter; seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes with tinted exterior caulking compound after sealer has been applied. Prime concealed surfaces.
- O. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
- P. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.
- Q. Plaster Walls:

3.03 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Apply finishes at manufacturer's recommended spreading rate to provide total dry film of not less than 5 mils.
- C. Apply material without reduction except as specifically required by label direction; reduction shall be the minimum permitted.
- D. Provide uniform color and finish; the number of coats specified being a minimum, provide any additional coats to produce work satisfactory to TPS.
- E. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- F. Apply each coat to uniform appearance.
- G. Sand wood surfaces lightly between coats to achieve required finish.
- H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- I. Where clear finishes are required, tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.
- J. Fire hose cabinets, air registers and grilles, flanges around ceiling fixtures, exposed electrical panel boards, primed hardware, etc., shall be painted to match adjacent surfaces unless factory finished such as aluminum registers and grilles.

- K. Where paint finish is specified on CMU, take special care to assure that every pore or irregularity of CMU texture is solidly and uniformly filled with block filler, adding extra coats to coarse textured units as necessary to provide a finish acceptable to TPS. Apply textured coating to uniform finish.
- L. Where Epoxy finish is specified on CMU, take special care to assure that every pore or irregularity of CMU texture is solidly and uniformly filled with block filler, adding extra coats to coarse textured units as necessary to provide an easily washable finish acceptable to TPS and local Health Department.
- M. Apply material without reduction except as specifically required by label direction; reduction shall be the minimum permitted.

3.04 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Paint shop-primed equipment, unless indicated otherwise.
- B. Paint rooftop equipment furnished with or without factory finish only as indicated on the drawings.
- C. Paint piping, equipment, conduits, vents, etc., on roof as indicated on the drawings. Identification labels will be provided by Mechanical Contractor.
- D. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.05 CLEANING

- A. Collect waste material which may constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. On completion of work, carefully clean all glass, hardware, factory finished surfaces, etc., and remove all misplaced paint and stain spots or spills and leave in a condition acceptable to TPS.
- C. Provide trash dumpster on site for debris collection as contractor may not use TPS dumpster.

TECHNICAL INFORMATION

General Requirements:

1. Owner shall provide the contractor with one location at each site to store supplies.
2. Contractor shall remove debris from the site daily. School shall be ready to be used each and every day that school is in session. Contractor shall clear all paint supplies from the classrooms.
3. **Minimum Preparations** are listed below for pricing unit cost items:
 - a. Doors varnished – wash, sand and apply two coats of polyurethane with staining agent.
 - b. Doors painted – wash, sand and apply one coat of rust inhibitive primer and two coats of alkyd enamel. New Doors to receive one coat of XIM primer and two coats of alkyd enamel.

- c. Single or double jambs – wash, sand and apply one coat of rust inhibitive primer and two coats of alkyd enamel.
- d. Single doorjamb and transom – wash, sand and apply one coat of rust inhibitive primer and apply two coats of alkyd enamel
- e. Single doorjamb, transom, and sidelight – wash, sand, and apply one coat of rust inhibitive primer and apply two coats of alkyd enamel
- f. Single doorjamb, transom and double sidelights – wash, sand, and apply one coat of rust inhibitive primer and apply two coats of alkyd enamel
- g. Painted base, moldings and chair rail – wash, sand and apply two coats of alkyd enamel
- h. Wall-mounted handrail – varnish or alkyd enamel as required
- i. Radiators – clean and spray with alkyd enamel
- j. Freestanding spindled handrail (stairwell, etc.) –
- k. Toilet Partitions – same procedure and finish as lockers
 - l. Accent Stripe – Acrylic latex
- m. Open bookcases, varnished (repaint) – same procedure and finish as doors
- n. Open bookcases, varnished (new) – same procedure and finish as doors
- o. Open wood bookcases, epoxy – wash, sand and apply one coat of XIM and one coat of water-borne epoxy
- p. Cabinets with doors, (all ext. & int. of doors only) – one coat of XIM Product and one coat of water-borne epoxy
- q. Cabinets with doors, epoxy (ext. & int. of doors only) – wash, sand and prime with XIM Product and apply one coat of water-borne epoxy
- r. Gyp walls, latex – using two coats of acrylic semi-gloss. New walls shall be primed and receive 3 coats of semi-gloss.
- s. Gyp walls, epoxy – All restrooms. One coat of P. V. A. Prime and one coat of water-borne epoxy
- t. Block walls, latex – two coats of acrylic latex semi-gloss.
- u. Existing block walls, epoxy – solvent base, apply one coat of P. P. G. grip and seal, and one coat of water-borne epoxy
- v. Lockers, face side only – wash exterior surfaces and remove paint from numbered plates; power sand to feather edge, chipped paints, and scratches; apply one coat of primer using P. P. G. Multi-prime #97-680; apply one finish coat of P. P. G. Pitthane #95-8600 and two coats of alkyd enamel; mask and protect all numbering plates and protection plates on lockers.
- w. Acoustical lay-in ceilings and grid – apply one coat of P. P. G. Grip & Seal
- x. Existing metal cabinets – apply same finish as lockers
- y. HVAC and Uni-vent Units and Grilles – Paint using same procedure as for lockers.
- z. Exterior Waterproofing: Brick, Stucco, Block- Use Siloxane by Coronado Paint. Do not apply in temperatures above 90 Degrees. Apply per manufacturers recommendations.
- aa. Polymix: Prepare wall and apply paint per Manufacturer recommendations
- bb. Glazed Tile Epoxy:
 - 1. Power sand to dull glazed tile. 2. Prime tile using XIM,
 - 3. Apply tow coats of P. P. G. Polyurethane epoxy gloss #95-1 series
- cc. Glazed Tile Multi-Color:
 - 1. Power sand to dull surfaces, 2. Apply one coat of XIM, 3. Prime with acrylic latex to match background of multi-color, 4. Apply multi-color such as Poly-mix or equal per manufacturer’s specifications, 5. Apply one coat of Non-ambering polyurethane

- dd. Sealant: Polyurethane sealant Vulkem 116 or equal. Do not apply to damp or contaminated surfaces. Clean all smears with Xylol or Toluol before sealant cures. Color: Match the adjacent material. Bronze, Buff or Almond. Owner to approve color.
- ee. Poured quartz floor: Manufacturer Benjamin Moore or equal. Prepare floor and apply per manufacturers directions. Color to be determined by Owner.
- ff. Painted Urethane Floor: Manufacturer: Benjamin Moore or equal. Prepare floor and apply paint per manufacturers recommendations.

END OF SECTION

SECTION 10100
VISUAL DISPLAY BOARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Porcelain enamel markerboards.
- B. Tackboards and tack strips.
- C. Visual display board accessories.

1.02 REFERENCES

- A. The General Conditions of the Contract, including Supplementary Conditions and Division 1 General Requirements apply to the Work of this Section as fully as if written completely herein.
- B. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 1996.
- C. ASTM B 221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 1996.
- D. GREENGUARD Environmental Institute: GREENGUARD Children and Schools Indoor Air Quality Certified

1.03 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide technical data for products specified. Include Material Safety Data Sheets, when applicable.
- C. Shop Drawings: Provide shop drawings for each type of visual display board specified.
- D. Selection Samples: For items without a specified color, submit set of color chips displaying manufacturer's full range of colors and finishes.
- E. Verification Samples: Submit samples not less than 6 inches square and framed on two adjacent sides, to illustrate materials, finish, color, and texture of each type of visual display board required.
- F. Maintenance Data: Provide data on cleaning requirements, stain removal, and recommended maintenance precautions.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's instructions for handling and storage of units.

1.05 FIELD CONDITIONS

- A. Field measure prior to preparation of shop drawings and fabrication, to ensure proper fit.
- B. Do not begin installation of visual display boards until environmental conditions approximate normal occupied conditions.

1.06 WARRANTY

- A. See Section 01780 - Closeout Submittals, for additional warranty requirements.
- B. Submit manufacturer's "Life of the Building" warranty, stating that under normal usage and maintenance, and when installed in accordance with manufacturer's instructions and

recommendations, porcelain enamel steel chalkboards and markerboards are guaranteed for the life of the building.

1. Warranty shall cover replacement of defective boards but not the cost of removal or reinstallation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers include:
 1. Claridge Products and Equipment, Inc.; Harrison, Arkansas 72602-0910. ASD. Tel: (870) 743-2200. Fax: (870) 743 1908. Email: claridge@claridgeproducts.com. Website: www.claridgeproducts.com
 2. Nelson Adams Division of A. Lawer Corporation / Greensteel
 3. Alliance Manufacturing
 4. Platinum Visual Systems
- B. Substitutions: See Section 01600 - Product Requirements.

2.02 MARKERBOARD MATERIALS

- A. Steel Face Sheets: 0.0239 inch (24 gage) commercial quality steel, fired with porcelain enamel, using the DuPont process.
 1. Face sheets with high-fired brittle ground and finish coats are not acceptable.
 2. Fire porcelain enamel finish at approximately 1000 degrees F, or lowest possible temperature there under to reduce steel and porcelain stresses and achieve superior enamel bond and hardness.
- B. Core Material: 7/16 inch Duracore; no added urea-formaldehyde resins
- C. Backing Material: 0.002 inch aluminum foil.
- D. Metal Trim and Accessories: ASTM B 221 (ASTM B 221M) aluminum alloy.
- E. Laminations: Hot-type neoprene contact adhesive applied to both surfaces automatically.
 1. Each substrate shall have minimum 80 percent covering with 1.5-2.0 dry mils of adhesive.
 2. Panel components shall have uniform pressure applied mechanically over entire area.
 3. Laminations shall be made by manufacturer of face sheet.
- F. Adhesive: As recommended by manufacturer for project conditions.

2.03 PORCELAIN ENAMEL MARKERBOARDS

- A. Markerboards: Claridge "LCS" markerboards Series 1. **Grades PK-12**
 1. Metal Trim and Accessories: Series 1 heavy gage aluminum extrusions.
 - a. Finish: Etched and anodized satin finish.
 - b. Trim Style: 5/8-inch, mitered corners
 - c. All marker boards shall be mounted at a height shown on the drawings.
 - d. Marker trough: Full length standard continuous solid type, with ribbed section and injection molded end closures.
 - e. Map rail: Standard continuous rail with cork insert and end stops, length as shown on drawings, and as follows:
 - i. Height: 1 in.
 - ii. Map hooks: 10 hooks per classroom.
 - iii. Roller brackets: 4 brackets per classroom.
 - iv. Flag holders: 2 holders per classroom.
 2. Size: As indicated on drawings.
 3. Color: White.

2.04 TACKBOARDS AND TACK STRIPS

- A. Tackboards: Configuration as indicated on drawings, including those integrated with chalkboards and marker boards.
 - 1. Metal Trim and Accessories: Series 1 heavy gage aluminum extrusions; etched and anodized satin finish.
 - 2. Size: As indicated on drawings.
 - 3. Tackboard Surfacing: Claridge (or approved manufacturer) Cork composed of 1/4" thick self-healing, burlap backed cork laminated on a 1/4-inch hardboard backing.
 - a. Color: As selected by Architect from manufacturer's standards.

2.05 FABRICATION

- A. Laminate facing sheet and backing sheet to core material under pressure, using manufacturer's recommended adhesive.
- B. Provide factory-assembled visual display boards, except where sizes demand partial field assembly.
- C. Assemble units in one piece without joints, wherever possible. Where required dimensions exceed maximum panel size available, provide 2 or more pieces of equal length, as indicated on approved shop drawings. Assemble to verify fit at factory, then disassemble for delivery and final assembly at project site.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrates are properly prepared to receive visual display boards and that all necessary backing is in place. Do not begin installation until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Comply with manufacturer's installation instructions.
- B. Where visual display boards must be partly assembled at project site, use factory-supplied H-bar to maintain proper alignment.
- C. Install visual display boards level and plumb, keeping perimeter trim aligned in accordance with manufacturer's recommendations.

3.03 ADJUSTING AND CLEANING

- A. Verify that all accessories are installed as required for each unit.
- B. Upon completion of installation, clean surfaces and trim in accordance with manufacturer's recommendations, leaving all materials ready for use.

END OF SECTION

SECTION 10260

WALL PROTECTION

PART 1 – GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Wall Protection Systems:
 - a. Rigid Protective Wallcoverings.
 - 2. Corner Guards
 - a. High Impact Surface Mounted

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. National Building Code of Canada (NBC)
- C. National Fire Protection Association (NFPA)
- D. Society of Automotive Engineers (SAE)
- E. Underwriters Laboratory (UL)
- F. Underwriters Laboratory of Canada (ULC)
- G. Uniform Building Code (UBC)

1.03 SYSTEM DESCRIPTION

- A. Performance Requirements:
 - 1. Fire Performance Characteristics: Comply with ASTM E 84 for the fire performance characteristics indicated below. Identify components with markings from testing and inspection organization.
 - a. Flame Spread: 25 or less.
 - b. Smoke Developed: 450 or less.
 - 2. Impact Strength: Provide Rigid Vinyl Sheet that has an Impact Strength of 30.4 ft-lbs/ inch of thickness as tested in accordance with the procedures specified in ASTM D-256-90b, Impact Resistance of Plastics.
 - 3. Chemical and Stain Resistance: Provide rigid vinyl sheet that show resistance to stain when tested in accordance with applicable provisions of ASTM D-543.
 - 4. GREENGUARD Certified: Provide GREENGUARD Certified material. Profiles shall meet the requirements of GREENGUARD Certification Standards for Low-Emitting Products and GREENGUARD Product Emission Standard for Children & Schools.
 - 5. Fungal and Bacterial Resistance: Provide rigid vinyl that does not support fungal or bacterial growth as tested in accordance with ASTM G-21 and ASTM G-22.
 - 6. Color Consistency: Provide components matched in accordance with SAE J-1545 - (Delta E) with a color difference no greater than 1.0 units using CIE Lab, CIE CMC, CIE LCh, Hunter Lab or similar color space scale systems.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's printed product data for each type of item specified.
- B. Detail Drawings: Mounting details with the appropriate adhesives for specific project substrates for each type of item specified.
- C. Samples:
 - 1. Rigid Vinyl Sheet: two 8-inch (203mm) square, of each type and color indicated. Shall also provide texture sample.

2. High Impact Corner Guard: two 8-inch (203mm) long, in full size profiles of each type and color indicated. Shall also provide texture sample.
- D. Manufacturer's Installation Instruction: Printed installation instructions for each type specified.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in unopened factory packaging to the jobsite
- B. Inspect materials at delivery to assure that specified products have been received.
- C. Store in original packaging in a climate controlled location away from direct sunlight.

1.06 PROJECT CONDITIONS

- A. Environmental Requirements: Products must be installed in an interior climate controlled environment.

1.07 WARRANTY

- A. Standard Limited Lifetime Warranty against material and manufacturing defects.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Acceptable manufacturers are identified on the drawings in the Room Finish Schedule.

2.02 RIGID VINYL SHEET

- A. Rigid Vinyl Sheet shall be manufactured from chemical and stain resistant polyvinyl chloride with the addition of impact modifiers. No plasticizers shall be added (plasticizers may aid in bacterial growth).
- B. Thickness:
 1. 0.040-inch = 3/64-inch (1mm)
 2. 0.060-inch = 1/16-inch (1.5mm)
- C. Accessories:
 1. Top Cap: brushed aluminum J mold
 2. Vertical Divider Bar: extruded PVC
 3. Inside Corner: extruded PVC
 4. Outside Corner: extruded PVC
 5. Color Matched Caulk
- D. Finishes
 1. Color as indicated on the drawings.
 2. Surface texture shall be selected by the architect from the manufacturer's standard selection.
 3. Accessories: shall be of a color matching the Sheet.

2.03 CORNER GUARD SYSTEM

- A. High Impact Surface Mounted corner guard.
 1. Profile: 3-inch (76mm) x 3-inch (76mm), 90 degree

2. Height: shall be of manufacturer's standard height options. See drawings for approximate height.
- B. Materials
 1. Vinyl: Snap on cover of .080-inch (2mm) thickness shall be extruded from chemical and stain resistant polyvinyl chloride with the addition of impact modifiers. No plasticizers shall be added (plasticizers may aid in bacterial growth).
 2. Aluminum: Continuous aluminum retainer of .070-inch (1.8mm) thickness shall be fabricated from 6063-T5 aluminum, with a mill finish.
- C. Components
 1. Top caps and bottom caps shall be made of injection molded thermoplastics.
 2. Fasteners: All mounting system accessories appropriate for substrates indicated on the drawings shall be provided.
 3. Optional flexible top caps shall be made of injection molded flexible PVC.
- D. Finishes
 1. Vinyl Covers:
 - a. Color: as indicated on the drawing.
 - b. Surface texture shall be selected by the architect from the manufacturer's standard selection.
 2. Molded Components: Top caps and bottom caps shall be of a color and texture matching the corner guards.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine areas and conditions in which the items will be installed.
 1. Complete all finishing operations, including painting, before beginning installation of the materials.
- B. Wall surface shall be dry and free from dirt, grease and loose paint.

3.02 PREPARATION

- A. General: Prior to installation, clean substrate to remove dust, debris and loose particles.

3.03 INSTALLATION

- A. General: Locate the rigid vinyl sheet as indicated on the approved detail drawing for the appropriate substrate and in compliance with the manufacturer's installation instructions.
 1. Install wall surface protection units plumb, level, and true to line without distortions.
 2. Do not use materials with chips, cracks, voids, stains, or other defects that might be visible in the finished work.
 3. Install aluminum retainers, mounting brackets, and other accessories in strict accordance with the manufacturer's instructions.
 4. Where splices occur in horizontal runs of over 20 feet (6 m), splice aluminum retainer and plastic cover at same locations along the run.
- B. Installation of Rigid Vinyl Sheet
 1. Adhere to substrate with a nonflammable, high strength, water-dispersed contact adhesive, with very little odor approved by the manufacturer.

- C. Installation of High Impact Surface Mount Corner Guard:
1. Position the aluminum retainer against the wall, allowing 5/16-inch (8mm) from the bottom of the aluminum to the top of the cove base or baseboard for the bottom cap.
 2. Aluminum Retainer Installation: follow manufacturer installation instructions for the substrate.
 3. Top and Bottom Cap Installation: follow manufacturer installation instructions for the substrate.
 4. Position the vinyl cover on the aluminum retainer to check the fit. Adjust the top cap on the aluminum retainer to obtain a tight fit with the vinyl cover.

3.04 CLEANING

- A. At completion of the installation, clean surfaces in accordance with the clean-up and maintenance instructions.

END OF SECTION

SECTION 10430
INTERIOR SIGNAGE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SCOPE

- A. Furnish all material, labor and engineering services necessary to fabricate and install signage.

1.3 REFERENCES

- A. Signs and their installation shall comply with applicable provisions of the latest edition of the following standards and with requirements of authorities having jurisdiction:
 - 1. ADAAG – Americans with Disabilities Act Accessibility Guidelines; US Architectural and Transportation Barriers Compliance Board.
 - 2. International Code Council/American National Standards Institute A117.1-Standard on Accessible and Usable Buildings Facilities.
 - 3. National Fire Protection Association 101 Life Safety Code.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be installed, including operation and maintenance data.
- C. Shop Drawings: Shop Drawings shall be complete with installation details.
 - 1. Show details that indicate sizes, lettering, graphics, and construction details of each type of sign.
 - 2. Show features of components, including but not limited to edge conditions, profiles, accessories, finishes, and textures.
 - 3. Show layout, profiles, sign mounting types, heights, anchorage methods, and attachment devices.
- D. Sample of two sign types for verification of materials, color, pattern, overall quality, and for adherence to drawings and requirements indicated.

1.5 QUALITY ASSURANCE

- A. Manufacturer specializing in manufacturing the products specified in this section with minimum five years experience. Obtain signs from one source and a single manufacturer.
- B. Installer Qualifications: Minimum two years documented experience in work of this Section.
- C. Mock-Up: Provide a mock-up for evaluation of material, workmanship.
 - 1. Construct areas designated by Architect.
 - 2. Do not proceed with remaining work until material, details and workmanship are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.
 - 4. As approved by Architect, mockup may be incorporated into finished work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's recommendations for delivery, storage and handling.
- B. Materials shall be delivered to the location in unopened, labeled factory containers. Upon delivery, materials shall be inspected for damage. Deficient materials shall not be used.

1.7 PROJECT CONDITIONS

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

1.8 WARRANTY

- A. Provide manufacturer's warranty against defects in materials or workmanship for minimum 5 years.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Interior signage shall equal to Innerface (1-800-445-4796), Signature System, and shall match or equal that shown on the drawings and the specification here within.
- B. Alternate manufacturers meeting these specifications are acceptable.

2.2 SIGN STANDARDS

- A. Typography
 - 1. Type style: see drawings. Copy shall be a true, clean, accurate reproduction of typeface(s) specified. Upper and lower case or all caps shall be as indicated in Sign Type drawings and Signage Schedule. Letter spacing to be normal and interline spacing shall be set by manufacturer.
 - 2. Arrows, symbols and logo art: To be provided in style, sizes, colors and spacing as shown in drawings and shall meet code requirements.
 - 3. Grade II Braille utilizing perfectly round, clear insertion beads.
- B. Color and Finishes
 - 1. Colors, patterns and artwork: see drawings.
 - 2. Message Background: see drawings.
 - 3. Finishes shall meet current Federal ADA and all State and local requirements.

2.3 SIGNS

- A. Architectural Signage System
 - 1. The signage shall incorporate a decorative laminate face with applied graphics including all tactile requirements in adherence to ADA specifications.
 - 2. All signs, including work station and room ID's, overheads and flag mounts, directionals and directories shall have a matching appearance and constructed utilizing the same manufacturing process to assure a consistent look throughout.
 - 3. Safe Room signage shall conform to requirements identified on drawings.
- B. General
 - 1. All text shall be Helvetica font. Heights as indicated on drawings.
 - 2. Title 24 Braille: Braille dots shall be half hemispherical domed and protruding a minimum 0.025".
- C. Materials and Construction

1. Sign face shall be 0.035" (nominal) standard grade, high pressure surface laminate. A painted sign face shall not be acceptable.
2. The sign shall incorporate balanced construction with a core sandwiched between laminates to prevent warping. An acrylic substrate shall not be acceptable. Laminate on the sign face only shall not be acceptable.
3. Tactile lettering shall be precision machined, raised 1/32", matte PETG and subsurface colored for scratch resistance.
4. Sign and backer edge shall be treated with a hot wax seal moisture integrity.
5. Signage with replaceable inserts shall accommodate an 8-½" wide insert printed on standard width paper and shall not have an end cap enclosing the insert. Replacement of the insert shall not require any mechanism and shall be easily replaced.
6. Insert components shall have a .080 thickness non-glare acrylic window and shall be inlaid flush to sign face for a smooth, seamless appearance.
7. The signage shall include module options allowing for inserts, notice holders, occupancy sliders, marker, magnetic, and cork in boards. All modules shall be flush to sign face for a smooth, seamless appearance.
8. The laminates (front and back) shall be precision machined together to a 90-degree angle. Edges shall be smooth, void of chips, burrs, sharp edges and marks.
9. The signage shall utilize an acrylic sphere for Grade II Braille inserted directly into a scratch resistant, high pressure laminate sign face. Braille dots are to be pressure fit in high tolerance drilled holes.
10. Text, graphics, border and Braille shall be raised from background.
11. The signage shall utilize a pressure activated adhesive. The adhesive shall be nonhazardous and shall allow for flexing and deflection of the adhered components due to changes in temperature and moisture without bond failure.
12. All signs shall be provided with appropriate mounting hardware. Hardware shall be finished and architectural in appearance and suitable for the mounting surface.
13. Some signs may be installed on glass. A blank backer is required to be placed on the opposite side of the glass to cover tape and adhesive. The backer shall match the sign in size and shape.

D. Printed Inserts

1. The signage contractor shall provide and install all signage inserts as required on drawings.
2. Manufacturer shall provide a template containing layout, font, color, artwork and trim lines to allow Owner to produce inserts on laser or ink jet printer. The template shall be in an Acrobat or Word format (.pdf).

PART 3 EXECUTION

3.1 SITE VISITS

- A. Site visits – 3 site visits shall be required by the sign contractor.
 1. Prior to submission of bid for site assessment and evaluation.
 2. Post award for the purposes of meeting with Owners and project manager.
 3. Final walk-through and punchlist.
- B. Programming – sign contractor shall perform all wayfinding & programming. Programming shall include location plan, message schedule, and/or plots, fire/evacuation maps and insert graphics. All programming materials shall be submitted for approval.

3.2 CODE COMPLIANCE

- A. It shall be the responsibility of the successful bidder to meet any and all local, state, and federal code requirements in fabricating and installing signs.

3.3 DELIVERY, STORAGE, PROTECTION

- A. Package to prevent damage or deterioration during shipment, handling, storage and installation. Products should remain in original packaging until removal is necessary. Store products in a dry, indoor location.

3.4 EXAMINATION

- A. Installer shall examine signs for defects, damage and compliance with specifications. Installation shall not proceed until unsatisfactory conditions are corrected.
- B. Inspect conditions of substrate and other conditions which may affect installation of signage.
- C. Do not begin installation until substrates are within manufacturer's specified tolerances and have been prepared in accordance with manufacturer's instructions.
- D. If substrate preparation is the responsibility of another installer, do not proceed with installation. Notify Architect of unsatisfactory preparation immediately.
- E. Commencement of work is deemed as acceptance of installation conditions.

3.5 INSTALLATION

- A. General: Installation locations shall be in accordance with ADA specifications. Locate signs where indicated using mounting methods in compliance with manufacturer's written instructions per required method.
 - 1. The signage contractor shall coordinate installation schedules with the Owner and/or Construction Manager.
 - 2. Installation shall be performed by manufacturer's personnel trained and certified in manufacturer's methods and procedures.
 - 3. The signage contractor shall submit a CAD generated location plan noting the location of all signage and cross referenced to message schedule or plots for architect's approval.
 - 4. Install in accordance with manufacturer's printed installation instructions, and in proper relationship with adjacent work.
 - 5. Installer to conduct a pre-installation to verify copy and sign location. Each location shall be noted using a low tack vinyl reproduction of actual sign. Full scale renderings of directories and directionals shall also be provided. Any location discrepancy or message issues shall be submitted to Architect for review.
 - 6. Signs shall be level, plumb, and at heights indicated with sign surfaces free from defects.
 - 7. Upon completion of the work, signage contractor shall remove unused or discarded materials, containers and debris from site.
 - 8. Protect installed products until completion of project.

3.6 SCHEDULES

- A. Refer to Room Finish Schedules & Drawings for signage locations and designations.

3.7 STANDARDS MANUAL

- A. Manufacturer shall provide a comprehensive Standards Manual in both a paper and PDF format. The manual shall include all graphic standards, sign type descriptions, renderings showing color, pattern and finish, engineering drawings, location plans, plots, artwork, insert templates, mounting detail, and reorder information.

END OF SECTION

SECTION 10520

FIRE CABINETS AND EXTINGUISHERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire Extinguishers
- B. Fire Cabinets
- C. Accessories

1.02 REFERENCES

- A. NFPA 10-Portable Fire Extinguishers

1.03 QUALITY ASSURANCE

- A. Conform to NFPA 10 requirements for portable fire extinguishers.
- B. Provide fire extinguishers and accessories by a single manufacturer.
- C. Conform to UBC 43-6 (ASTM E814-83) for fire resistive wall performance where necessary.

1.04 SUBMITTALS

- A. Submit brochure and product data in compliance with Section 01300.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Provided their products meet the requirements of the specifications.
 - 1. J.L. Industries
 - 2. Larsen's Manufacturing Co.

2.02 FIRE EXTINGUISHERS

- A. Multi-purpose Dry Chemical Type: UL-rated, 4A-80B:C, MP10, 10 lb nominal capacity, in enameled steel container.
- B. Wet Chemical Type: UL-rated, 2A:K, WC 2 ½, 2.5 gallon capacity, in stainless steel container.
- B. Fire Extinguishers shall be provided with "Inspection Tag" indicating date of fire extinguisher inspection. Tag shall be attached to fire extinguisher and readily visible.

2.03 MOUNTING BRACKETS

- A. Provide manufacturer's standard mounting bracket for specified fire extinguisher. Mounting bracket shall be designed to prevent accidental discharge of extinguisher.

2.04 FIRE CABINET

- A. Fire Cabinet shall be semi-recessed and shall be sized to accommodate a 10 lb nominal capacity fire extinguisher.
- B. Cabinets for multi-purpose extinguishers shall be equal to: Larsen's, Architectural Series Fire Extinguisher Cabinet with Full Glass Door (clear acrylic), Model 2409-6R, 2 ½" projection
- C. Cabinets for wet chemical extinguishers shall be equal to: Larsen's Architectural Series Fire Extinguisher Cabinet with Full Glass Door (clear acrylic), Model 2712-RL, 2 ½" projection.
- D. Square edge trim shall be provided.
- E. Box, trim and door material shall be steel with white baked enamel finish.
- F. Provide red lettering decal on glass door.
- G. Cabinet handle shall be recessed.

2.05 SCHEDULE

- A. Provide Wet Chemical Type extinguishers in kitchen locations.
- B. Provide Multi-purpose Dry Chemical Type extinguishers in all other locations.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install items included in this section in locations and at mounting heights indicated, or if not indicated, at heights to comply with applicable regulations of governing authorities.
 - 1. Securely fasten mounting brackets and fire extinguisher cabinets to structure, square and plumb, to comply with manufacturer's instructions.
 - 2. Install fire extinguisher bracket inside cabinet if not installed from factory.

END OF SECTION

**SECTION 011520
RECYCLED POLYVINYL SAFETY FLOORING**

PART 1 GENERAL

1.1 SUMMARY

- A. This section includes furnishing all materials, labor, equipment, and related services necessary to supply and install recycled Polyvinyl safety flooring (Eco-Grip®) as indicated in the contract documents, and in compliance with applicable codes.

1.2 RELATED SECTIONS

- A. Division 03 Section "Cast in Place Concrete" for general building applications of concrete.
- B. Division 22 Section "Plumbing" for drain, floor sink floor troughs, cleanouts, and plumbing penetration conditions.

1.3 INFORMATIONAL SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for commercial kitchen applications.
- B. Samples: Submit 3 Eco-Grip® samples in the color SELECTED on the finish drawings.
- C. Certification: Submit evidence of contractor qualifications as outlined under 1.5
- D. Quality Assurance. Provide letter from the manufacturer attesting to Approved Installer status.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Provide detailed Eco-Grip® maintenance instructions.
- B. Warranties: Provide manufacturer and installation warranties as noted under Section 1.5 Quality Assurance.

1.5 QUALITY ASSURANCE

- A. Contractor will assure compliance with 1.6 Project Conditions to allow or proper installation.
- B. Comply with local governing codes and regulations.
- C. Use Eco-Grip® factory-trained installers Approved Installers.
- D. Manufacturer must provide a limited 10-year product warranty against manufacturing defects, with end-user's continual use of Eco-Grip® Commercial Floor Cleaner.
- E. Eco-Grip® Approved Installer must provide a 1-year installation defect warranty.

1.6 PROJECT CONDITIONS

- A. Assure that substrate material is suitable for installation of flooring as indicated by manufacturer. Approved substrates include Portland-based concrete, gypsum-based concrete (installation will require a unique adhesive), marine-grade or underlayment grade plywood, cement board as reviewed and approved by manufacturer, provided all substrates are properly cleaned and prepared per manufacturer guidelines.

1. Eco-Grip® can be installed over existing finishes such as quarry tile or epoxy, provided all finishes are properly prepared for installation. Glue down products and mastic must be removed.
2. Eco-Grip® can be installed in “operating environments”, defined as a facility that operates a relatively normal daily schedule, but closes for at least 8 hours during a 24- hour period to allow for installation, for the duration of installation.
- B. Comply with manufacturer’s written instructions for substrate temperature and humidity, ambient temperature, ventilation, and other conditions affecting the installation of Eco-Grip®.
- C. Environmental Limitations: Do not install Eco-Grip® flooring until building is enclosed and weatherproof, concrete work is complete and cured, and the HVAC system or temporary heating maintains a minimum temperature of 55-degrees F and humidity is at normal occupancy levels.
- D. Acclimate Eco-Grip® flooring materials to the ambient temperature and humidity levels of the installation spaces for a minimum of 24 hours.
- E. Verify that concrete substrate conditions provide for slope to drains allowing water flow to drainage points without assistance. ¼” per 1-foot average slope for a 4’ radius from drain center is required.
- F. Verify that floor drains, clean-outs, trench drains, grease traps, and floor sinks are set level, and ¼” above substrate, to facilitate drainage to those penetrations once the ¼” (6.5mm) thick Eco-Grip® floor is installed. Floor sinks may be set higher than ¼”, per local code.
- G. Slab substrates must be dry and free of curing compounds, hardeners, sealers, and other foreign materials that would interfere with bonding of adhesive.
- H. Verify the substrate is clean, dry, and structurally sound to accept adhesive, and is free of cracks, ridges, depressions, scales, and foreign deposits of any kind.
- I. Verify that substrate is ready for resilient flooring installation by testing moisture emission rate and alkalinity, in accordance with ASTM F710; obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive manufacturer.
 1. Reference ASTM F710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
 2. Moisture reading must register no more than 98% RH on the Wagner Relative Humidity Scale.
 3. Refer to Eco-Grip® New Construction Checklist for additional Guidance.
- J. Do not begin installation of Eco-Grip® flooring until all Project Conditions have been met.

PART 2 PRODUCTS

1.7 NO SUBSTITUTIONS PERMITTED

1.8 APPROVED PRODUCTS

- A. Eco-Grip® slip resistant safety flooring as manufactured by Allied Industries International, Inc.
 1. Eco-Grip® Commercial Flooring. Sheets are 8’x5’ in ¼” (6.5mm) thickness with color chosen by architect as noted on plans.
 2. Eco-Grip® 2-Part Epoxy Flooring Adhesive
 3. Eco-Grip® SpeedFlex Liquid Weld System (or V-Rod, welding rod)

4. Eco-Grip® Polyvinyl Cove Base Cap (high-impact polyvinyl), stainless steel base cap, aluminum base cap.
 5. 16-gauge stainless steel drain flanges and transition strips, and #10 stainless screws and lead anchors, as required.
 6. Eco-Grip® sealants.
 7. Other installation materials as required and supplied by Allied Industries International, Inc.
 8. No substitutions permitted.
- B. Eco-Grip® slip-resistant safety flooring must meet the following test standards:
1. ASTM G21: Excellent Bacteria & Mildew Resistance
 2. ASTM D412 Tensile Strength: 1694 psi Elongation 130.98%
 3. ASTM D624 Tear Strength: 268 lbs./force/inch Elongation 7.33%
 4. ASTM F970 2000 psi .023 Avg 1500 psi = .014
 5. ANSI B101.3 SCOF = .62 DCOF = .43
 6. ANSI B101.3 DCOF TRL rubber = .72
 7. ASHB 198:2014 SSR Wet = 65
 8. ASTM E662 Smoke Density: DMC 141
 9. Fire Test: NFPA Type I Rated
 10. ASTM D2240 Hardness: 85
 11. Thickness: 6.5mm / 4mm
 12. Weight (oz. sq. ft.): 25.16 / 16
 13. Oxygen Index: 29.0

PART 3 EXECUTION

1.9 INSTALLATION

- A. Refer to manufacturer's Installation Manual, Detail Drawings, and Installation Training Video for all installation techniques. Installation should always be conducted by factory-trained Approved Installers.
- B. Follow manufacturer recommendations for laying out sheets. All flooring sheets and welded joints must be offset by 1/3 of sheet length in a staggered design.
- C. The majority of all base must be installed integral to the flooring sheet, with minimal usage of flat base.
- D. Flooring must be cut tight to all penetrations.
- E. Adhere the flooring sheets to substrate with Eco-Grip® 2-part Epoxy using the manufacturer's recommended trowel notch size (3/32). A unique 1-part adhesive is available for gypsum-based substrate applications.
- F. Use 100lb. roller to press floor into 2-part epoxy immediately following application of 2-part epoxy.
- G. Eco-Grip® E-6100 adhesive/sealant should be used to seal top edge of base under base cap, per Base Cap Detail Drawings, and under all stainless details per Detail Drawings.
- H. Route out v-grooves between sheets with a 6mm groover blade for SpeedFlex application and weld all seams using Eco-Grip® SpeedFlex Liquid Weld System or Eco-Grip® 7mm v-Rod.
- I. Stainless steel drain flanges are to be routed into floor surface and mounted flush with the top of flooring. Secure flanges using stainless steel fasteners, lead anchors, and sealant, anchoring the flange to the substrate.

- J. Install 16-gauge stainless steel transitions at all doorways and floor transition areas, using stainless steel fasteners, lead anchors, and sealant.
- K. Seal all exposed edges of flooring and penetrations with SpeedFlex Liquid Weld System to ensure a watertight seal.
- L. Refer to Detail Drawings dated 1/02/20 for additional information.
- M. GC to protect finished floor.

1.10 CLEANING

- A. Sweep the floor after installation and clear area of scrap materials.
- B. Refer to manufacturer's cleaning manual and demonstration video for proper cleaning technique.
- C. Installer must provide two copies of manufacturer's cleaning recommendations for contractor and owner use.
- D. Installer must provide cleaning kit (1-gallon Eco-Grip® Commercial Floor Cleaner, 1 foam gun, 1 deck brush, 1 squeegee, 1 cleaning instruction poster) with installation.

END OF SECTION

SECTION 12492

MANUAL ROLLER SHADES

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Manual roller shades

1.02 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM E 21 - Standard Test Method for Elevated Temperature Tension Tests of Metallic Materials.
 - 2. ASTM E 22 - Recommended Practice for Conducting Long Time High Temperature Tension Test of Metallic Materials.
 - 3. ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
 - 4. ASTM G 22 - Standard Practice for Determining Resistance of Plastics to Bacteria.
- B. National Fire Protection Association (NFPA):
 - 1. NFPA 70 - National Electrical Code.
 - 2. NFPA 701 - Fire Tests for Flame-Resistant Textiles and Films.
- C. Underwriters Laboratories Inc. (UL).

1.03 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Latest edition of Manufacturer's literature including:
 - 1. Performance data and installation procedures meeting the requirements herein. Including installation details, styles, material descriptions, profiles, features, finishes and operating instructions.
 - a. Preparation instructions and recommendations.
 - b. Storage and handling requirements and recommendations.
 - c. Mounting details and Installation methods.
- C. Maintenance Data: Submit instructions and precautions for cleaning and maintenance, operating hardware, and controls as applicable.
- D. Manufacturer's Material Safety Data Sheet (MSDS) for each product being used.
- E. Submit working hand sample or mockup shade (mockup shade may be used as a final shade if approved).
- F. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, product details and finishes, installation details, operational clearances, wiring diagrams if applicable, and relationship to adjacent work.
- G. Window Treatment Schedule: Submit a schedule with same room designations indicated on the Drawings; including but not limited to opening sizes and key to typical mounting details.
- H. Samples:
 - 1. Submit two 4" x 6" samples of shade fabric material indicating color.

2. Submit two 4" x 6" samples of the fascia material indicating color.

1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Engaged in manufacturing of products of similar type to that specified, with a minimum of 10 years successful experience.
- B. Installer Qualifications: Minimum 2 years successful experience installing similar products.
- C. Single Source Requirements: To the greatest extent possible, provide products specified in this section from a single manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Product to be delivered in manufacturer's original packaging.
- B. Products to be handled and stored to prevent damage to materials, finishes and operating mechanisms. Store in a clean, dry area, laid flat to prevent sagging and twisting of packaging.

1.06 PROJECT CONDITIONS, COORDINATION AND SEQUENCING

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
 1. Building shall be enclosed; windows, frames and sills shall be installed and glazed.
 2. Wet work shall be complete and dry.
 3. Ceilings, window pockets, electrical and mechanical work above window covering shall be complete.

1.07 WARRANTY

- A. Minimum 5 year.

PART 2 - PRODUCTS

2.01 MANUFACTURER AND PRODUCT DESCRIPTION

- A. InPro
 1. Clickeze
 2. Arid solar screen fabric
 3. Fabric Color: Charcoal/Sable
- B. Springs Window Fashions (SWF) Contract
 1. Shading Systems
 2. Double-Take T300
 3. Fabric Color: Grey/Bronze
- C. Springs Window Fashions (SWF) Contract
 1. Shading Systems
 2. Crosshatch R R300
 3. Fabric Color: Grey/Bronze
- D. Substitution Request: Not permitted

2.02 MANUAL ROLLER SHADES

A. Product: manual roller shade

1. **Shade fabric** shall be flame retardant, fade and stain resistant, anti-static, anti-microbial.
 - a. Passes NFPA 701-1999 FR
 - b. Passes ASTM-G21 and G22
 - c. Shades with railroaded fabric will have heat-welded seams.
 - d. Fabric Style: 3% Openness
 - e. Shading Coefficient with single ¼" clear glass: 0.65-0.68
 - f. All shades within a room shall be from the same dye lot
2. **Roller tube** shall be extruded aluminum engineered with a channel to accept fabric spline. The tube size will be determined by the manufacturer based on window size and fabric selection.
3. **Clutch system** shall be made of glass-reinforced, polyester thermopolymer (PBT) for wear resistance, smooth operation and corrosion resistance. The clutch is comprised of multi-banded, steel springs that lock the shade in any position when operating the control loop. The clutch mechanism is bi-directional and never requires adjustment or lubrication.
4. **Control loop** shall be a #10 stainless steel bead chain. Bead stops attached to the chain protect the shade from over rotation. Bead stop shall be placed so that no more than the hembar shows below fascia when shade is fully rolled up.
 - a. Length of chain shall be from mechanism to 48-inches above finished floor.
5. **Idler end** shall be made of high strength, glass-reinforced, polyester thermopolymer (PBT) for wear resistance, smooth operation and corrosion resistance.
6. **Lift assist system** shall be a heavy-duty torsion spring located inside the roller tube. The mechanism reduces the pull force allowing easy lifting of larger shades.
7. **Spline system** shall consist of a PVC spline heat-welded to the shade fabric and inserted into a channel on the roller tube. The spline system allows for adjustability on-site and ease in changing fabric panels in the field.
8. **Hem bar** shall be an aluminum extrusion enclosed in a fabric hem pocket with heat-welded seams and ends. Optional fabric wrapped hem bar.
9. **Battens** shall be enclosed in a heat-welded pocket providing additional stabilizing on large shades. Batten placement will be determined by the manufacturer based on window size and fabric selection.
10. **Installation brackets** shall be .125" thick steel and can accommodate overhead, side and face mounting. Optional dual shade brackets shall hold two shades in one bracket assembly. Coupled shades shall be connected with a linking bracket mechanism.
11. **Mounting:**
 - a. Typically outside mounted.
 - b. Measure so a run of fascias are butting next to each other with no gaps and out to wall on ends.
 - c. Control loop shall typically be on the right side of the window unless access does not meet accessibility codes.

2.03 ACCESSORIES

- A. **Fascia panel** shall be 4.25" or 7.625" dual shade snap-on design and made of 062" thick extruded 6063 T-5 aluminum alloy
 - 1. Finish: either a powder-coated finish to match window mullion that is bronze or a clear anodized finish for window mullions of a color other than bronze, see drawings for specific colors.
 - 2. Brackets shall be universal and shall be clear anodized finish.
- B. **End Caps.** Same finish as fascia shall be placed on all fasciae with exposed ends.
- C. **Locking Chain Guide.** User to identify each location per window due to odd situations.

2.04 FABRICATION

- A. Fabricate shades to hang flat without buckling or distortion.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Installer shall be responsible for inspection of jobsite, approval of mounting surfaces, blocking for shade brackets or pocket assemblies, suspended acoustical or gypsum ceiling for recessed shades, verification of field measurements and installation conditions. Installation shall commence when satisfactory conditions are met.
- B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
- C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

3.02 INSTALLATION

- A. Install window treatments in accordance with manufacturer's instructions including the following.
 - 1. Install with adequate clearance to permit smooth operation of the shades throughout entire operational range.
 - 2. Adjust and balance window coverings to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

3.03 CLEANING AND PROTECTION

- A. Clean surfaces after installation in accordance with manufacturer's written instructions. Do not use cleaning methods involving heat, bleach, abrasives, or solvents.
- B. Protect installed products until completion of project. Repair damaged or improperly installed before Substantial Completion.

END OF SECTION

SECTION 096516
Resilient Homogenous Vinyl Sheet Flooring

PART 1 - GENERAL

1. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Resilient Homogeneous Vinyl Sheet Flooring.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of product indicated, in manufacturer's standard-size samples of each resilient product color, texture, and pattern required.
- C. Product Schedule: For resilient products. Use same designations indicated on Drawings.

1.4 QUALITY ASSURANCE

- A. Installation Qualification: Contractors for floor covering installation should be experienced in managing commercial flooring projects and provide professional installers, qualified to install the various flooring materials specified. An installer is "qualified" if trained by Tarkett or a certified INSTALL (International Standards & Training Alliance) resilient floor covering installer.
- B. Mockups: Provide resilient products with mockups specified in other Sections.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by Tarkett, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

1.6 PROJECT CONDITIONS

- A. Install resilient products after other finishing operations, including painting, have been completed.

- B. Maintain ambient temperatures within range recommended by Tarkett, but not less than 65 deg F (18 deg C) or more than 85 deg F (29 deg C) in spaces to receive resilient products during the following time periods:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- C. Maintain the ambient relative humidity between 40% and 60% during installation.
- D. Until Substantial Completion, maintain ambient temperatures within range recommended by Tarkett, but not less than 55 deg F (13 deg C) or more than 85 deg F (29 deg C).

PART 2 - PRODUCTS

2.1 RESILIENT SHEET FLOORING

Manufacturer:

Tarkett, Inc.

30000 Aurora Rd.

Solon, Ohio 44139

Web: www.tarkettna.com

E-mail: info@johnsonite.com

Phone: (800) 899-8916

(440) 543-8916

2.2 IQ HOMOGENOUS VINYL SHEET FLOORING WITH PUR

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Johnsonite, a Tarkett Company; **iQ Granit, iQ Optima or iQ Natural.**
- B. Sheet Standard: ASTM F1913, Standard Specification for Vinyl Sheet Floor Covering Without Backing.
- C. Thickness/Wearlayer: 0.080 inch
- D. For size specify: 6 ft. 6 inches
- E. Colors and Patterns: **As selected by Owner/Architect from full range of industry colors.**
- F. Test data:
 - 1. Flexibility (ASTM F137): Passes
 - 2. Chemical Resistance (ASTM F925): Passes
 - 3. Static Load Limit (ASTM F 970): Passes 250 psi
 - 4. Resistance to Heat (ASTM F1514): $\Delta E \leq 8$
 - 5. Resistance to Light (ASTM F1515): $\Delta E \leq 8$
 - 6. Residual Indentation (ASTM F1914): Passes
 - 7. Static Coefficient of Friction (ASTM D 2047): ≥ 0.5 SCOF
 - 8. Flamability (ASTM E648, Critical Radiant Flux): Class 1 (≥ 0.45 W/cm²)
 - 9. Limited Commercial Warranty: 10 years

2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, Portland cement based or blended hydraulic-cement-based formulation.
- B. Adhesives: As recommended by Tarkett to meet site conditions
 - 1. Tarkett 925 Resilient Flooring Adhesive
 - 2. Tarkett 975 Two-Part Urethane Adhesive
 - 3. Tarkett 901 SpraySmart Adhesive
 - 4. Tarkett RollSmart Adhesive
 - 5. Cold Weld Liquid

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the work.
- B. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Prepare substrates according to Tarkett written instructions to ensure proper adhesion of Resilient Flooring.
 - 1. Prepare concrete substrates in accordance with ASTM F 710.
 - a. Concrete floors must be free of dust, solvent, paint, wax, oil, grease, residual adhesive, adhesive removers, film-forming curing compounds, silicate penetrating curing compounds, sealing, hardening or parting compounds, alkaline salts, excessive carbonation or laitence, mold, mildew, and other foreign materials that may affect dissipation rate of moisture from the concrete, discoloration or adhesive bonding.
 - b. Mechanically remove contamination on the substrate that may cause damage to the resilient flooring material. Permanent and non-permanent markers, pens, crayons, paint, etc., must not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.
 - c. Perform moisture testing as recommended by manufacturer. Proceed with installation only after substrates have been tested and meet the minimum requirements from the manufacturer in accordance with ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride or ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
 - d. A pH test for alkalinity must be conducted on the concrete floor prior to installation with results between 7 and 9. If the test results are not within the acceptable range, then installation must not proceed until the problem has been corrected.

2. Wood subfloors must have a minimum 18" (45.7 cm) of cross-ventilated space beneath the bottom of the joist.
 - a. The floor must be rigid, free of movement.
 - b. Single wood and tongue and groove subfloors should be covered with ¼" (6.4 mm) or ½" (12.7 mm) APA approved underlayment plywood.
 - 1) Use ¼" (6.4 mm) thick underlayment panels for boards with a face width of 3" (76 mm) or less.
 - 2) Use ½" (12.7 mm) thick underlayment panels for boards with a face width wider than 3" (76 mm).
 - c. Do not install over OSB (Oriented Strand Board), particle board, chipboard, lauan or composite type underlayments.
- B. Fill cracks, holes, depressions and irregularities in the substrate with good quality Portland cement-based underlayment leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.
- C. Floor covering shall not be installed over expansion joints.
- D. Do not install resilient products until they are same temperature as the space where they are to be installed.
 1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.
- E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.3 RESILIENT SHEET FLOORING INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient sheet flooring.
- B. Resilient Sheet Flooring:
 1. Install with Tarkett adhesive specified for the site conditions and follow adhesive label for proper use.
 2. Install rolls in sequential order following roll numbers on the labels.
 3. Reverse non-pattern sheets as referenced in the Tarkett Installation Instructions.
 4. Roll the flooring in both directions using a 100 pound three-section roller.
 5. Vinyl sheet flooring must be welded.
Note: It is recommended to heat weld seams to provide a more sterile and watertight seam.
 6. Tarkett Resilient Sheet Flooring may be flash coved.
 - a. Use Johnsonite CFS-00-A Cove Filler Strip.
 - b. Net fit flooring material into the appropriate Johnsonite cove cap.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
- B. Perform the following operations immediately after completing resilient product installation:
 1. Remove adhesive and other blemishes from exposed surfaces.
 2. Sweep and vacuum surfaces thoroughly.

3. Damp-mop surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.
 1. No traffic for 24 hours after installation.
 2. No heavy traffic, rolling loads, or furniture placement for 72 hours after installation.
- D. Wait 72 hours after installation before performing initial cleaning.
- E. A regular maintenance program must be started after the initial cleaning.

END OF SECTION

SECTION 096519
Resilient Tile Flooring

PART 1 - GENERAL 1.01 SUMMARY

- A. Section Includes:
 - 1. Flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.
- B. Related Documents
 - 1. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.
- C. Related Sections:
 - 1. Other Division 9 sections for floor finishes related to this section but not the work of this section
 - 2. Division 3 Concrete; not the work of this section
 - 3. Division 6 Wood and Plastics; not the work of this section
 - 4. Division 7 Thermal and Moisture Protection; not the work of this section

1.02 REFERENCES

- A. Armstrong Flooring Technical Manuals
 - 1. Armstrong Flooring Guaranteed Installation Systems manual, F-5061
 - 2. Armstrong Flooring Maintenance Recommendations and Procedures, manual, F8663.
- B. ASTM International:
 - 1. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
 - 2. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
 - 3. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
 - 4. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
 - 5. ASTM F 1700 Standard Specification for Solid Vinyl Tile
 - 6. ASTM F 1861 Standard Specification for Resilient Wall Base
 - 7. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
 - 8. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
- C. National Fire Protection Association (NFPA):
 - 1. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
 - 2. NFPA 258 Standard Test Method for Measuring the Smoke Generated by Solid Materials
- D. Standards Council of Canada
 - 1. CAN/ULC-S102.2 Standard Test Method for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies

1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.
- B. Administrative Requirements

1. Pre-installation Meeting: Conduct an on-site pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
2. Pre-installation Testing: Conduct pre-installation testing as follows: [Specify testing (i.e. moisture tests, bond test, pH test, etc).]
- C. Test Installations/ Mock-ups: Install at the project site a job mock-up using acceptable products and manufacturer approved installation methods, including concrete substrate testing. Obtain Owner's and Consultant's acceptance of finish color, texture and pattern, and workmanship standards.
 1. Mock-Up Size: [Specify mock-up size].
 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
 3. Incorporation: Mock-up may be incorporated into the final construction with Owner's approval.
- D. Sequencing and Scheduling
 1. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring.
 2. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond, moisture tests and pH test.

1.04 SUBMITTALS

- A. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions (latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061. for flooring and accessories.
- B. Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.
- C. Submit Safety Data Sheets (SDS) available for flooring product, adhesives, patching/leveling compounds, floor finishes and cleaning agents.
- D. If required, submit the manufacturer's certification that the flooring has been tested by an independent laboratory and complies with the required fire tests. E. Closeout Submittals: Submit the following:
 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
 2. Warranty: Warranty documents specified herein

1.05 QUALITY ASSURANCE

- A. Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.
- B. Select an installer who is competent in the installation of Armstrong resilient solid vinyl tile flooring.
 1. Engage installers certified as Armstrong Commercial Flooring Certified Installers
 2. Confirm installer's certification by requesting their credentials

- C. Fire Performance Characteristics: Provide resilient tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:
 - 1. ASTM E 648 (NFPA 253) Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I
 - 2. ASTM E 662 (NFPA 258) (Smoke Generation) Maximum Specific Optical Density of 450 or less
 - 3. CAN/ULC-S102.2 – Flame Spread Rating and Smoke Developed – Results as tested

1.06 DELIVERY, STORAGE AND HANDLING

- A. Comply with Division 1 Product Requirements Sections
- B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.
- D. Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.07 PROJECT CONDITIONS

- A. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of [100°F (38°C)][85°F (29°C)] for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55°F (13°C) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Refer to the Armstrong Flooring Guaranteed Installations Systems manual, F5061 for a complete guide on project conditions.

1.08 LIMITED WARRANTY

- A. Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.
- B. Limited Warranty Period: 20 years for Natural Creations with Diamond 10 Technology.
- C. The Limited Warranty 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 the requirements of the Contract Documents.
- D. For the Limited Warranty to be valid, this product is required to be installed using the appropriate Armstrong Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

1.09 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials from same production run as products installed. Packaged with protective covering for storage and identified with appropriate labels.
1. Quantity: Furnish quantity of flooring units equal to 10% of amount installed.
 2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra material.

PART 2 - PRODUCTS 2.01 MANUFACTURER

A. Resilient tile flooring, wall base, adhesives and accessories:

1. Armstrong Flooring Inc., 2500 Columbia Avenue, Lancaster, PA 17604, www.armstrongflooring.com/commercial
2. Manufacturer must have a headquarters in the United States of America

2.02 RESILIENT TILE FLOORING MATERIALS

- A. Provide NATURAL CREATIONS® with Diamond 10™ Technology: Luxury Solid Vinyl Tile Flooring manufactured by Armstrong Flooring Inc.
1. Description: A layered construction consisting of a tough, clear, rigid vinyl wear layer protecting a high-fidelity print layer on a solid vinyl backing. Protected by a diamond infused UV-cured polyurethane finish, the wear surface is embossed with different textures to enhance each of the printed visuals. Colors are insoluble in water and resistant to cleaning agents and light.
 2. Reference specification - ASTM F 1700, "Standard Specification for Solid Vinyl Tile", Class III, Type B – Embossed Surface. Meets requirements for size, squareness, thickness, thickness of wear layer, residual indentation, resistance to chemicals, resistance to light and resistance to heat.
 3. Pattern and Color: Refer to finish schedule and plans.
 4. Size: Refer to plans and finish schedule.
 5. Wear layer thickness: 0.020 (0.5 mm)
 6. Thickness: 1/8"/0.125 in. (3.2mm)

2.03 PRODUCT SUBSTITUTION

A. Substitutions: No substitutions permitted.

2.04 ADHESIVES

- A. Provide Armstrong S-288 Flooring Adhesive] [S-240 Epoxy Adhesive] under the flooring and Armstrong S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer.
- B. [For Tile High-Moisture Installation Warranty, Full Spread: Provide Armstrong S-543 Commercial Sheet Flooring and LVT Adhesive for field areas and S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer].

- C. [For Spray Adhesive High-Moisture Installation Warranty, Full Spread: Provide Armstrong Flooring Flip™ Spray Adhesive for field areas and S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer].

2.05 ACCESSORIES

- A. For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), provide Armstrong S-184 Fast-Setting Cement-Based Patch and Underlayment][S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S195 Underlayment Additive].
- B. For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.
- C. Provide transition/reducing strips tapered to meet abutting materials.
- D. Provide threshold of thickness and width as shown on the drawings.
- E. Provide resilient edge strips of width shown on the drawings, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available. F. Provide metal edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage, or overlapttype metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

PART 3 - EXECUTION 3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).
- B. Visually inspect flooring materials, adhesives and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.
- C. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.
- D. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.
- E. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.
- F. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.03 PREPARATION

- A. Subfloor Preparation: Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with Armstrong S-184 Fast-Setting Cement-Based Patch and Underlayment][S-194 CementBased Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive] as recommended by the flooring manufacturer. Refer to Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.
- B. Subfloor Cleaning: The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, sealers, release agents, curing compounds, residual adhesive, adhesive removers and other foreign materials that might affect the adhesion of resilient flooring to the concrete or cause a discoloration of the flooring from below. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents. Spray paints, permanent markers and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the concrete slab as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate they must be mechanically removed prior to the installation of the flooring material. Refer to the Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.
- C. When using S-288 Adhesive, perform subfloor moisture testing in accordance with [ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using *insitu* Probes"] [ASTM F 1869, "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"] and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Internal relative humidity of the concrete shall not exceed 90%.][MVER shall not exceed 5 lbs./1000 sq. ft./24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained
- D. [When using S-543 Adhesive, perform subfloor moisture testing in accordance with [ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using *insitu* Probes"] [ASTM F 1869, "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"] and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Internal relative humidity of the concrete shall not exceed 90%.] [MVER shall not exceed 7 lbs. /1000 sq. ft. /24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained].
- E. [When using Armstrong Flooring Flip™ Spray Adhesive, perform subfloor moisture testing in accordance with ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using *in-situ* Probes" and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," manual to determine if surfaces are

dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Internal relative humidity of the concrete shall not exceed 93%. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained].

- F. Concrete pH Testing: Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained.
- G. Wood subfloors: Armstrong resilient floors are recommended on suspended wood subfloors with a 1/4" underlayment (see product installation systems for exceptions) and a minimum of 18" of well-ventilated air space below. Armstrong Flooring does not recommend installing resilient flooring on wood subfloors applied directly over concrete or on sleeper-construction subfloors. Loading requirements for subfloors are normally set by various building codes on both local and national levels. Trade associations such as APA–The Engineered Wood Association provide structural guidelines for meeting various code requirements. Subfloor panels are commonly marked with span ratings showing the maximum center-to-center spacing in inches of supports over which the panels should be placed.
 - 1. Refer to the Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use under Resilient Flooring for additional information.
- H. Wood subfloors - Surface Cleaning: Make subfloor free from dust, dirt, grease, and all foreign materials.
 - 1. Check panels for sources of discoloration such as contamination from paint, varnish, stain overspray or spills, plumbing sealers, asphalt, heater fuel, markers or potential staining agents such as wood or bark not visible on the surface, edge sealers, logo markings, printed nail patterns and synthetic patches.
 - 2. Remove old adhesive.
 - 3. Cover adhesive, oil or wax residue with an appropriate underlayment. If the residue is tacky, place a layer of felt or polyethylene sheeting over it to prevent a cracking sound when walking on the floor.
 - 4. Remove all paint, varnish, oil and wax from all subfloors. Many buildings constructed before 1978 contain lead-based paint, which can pose a health hazard if not handled properly. State and federal regulations govern activities that disturb lead-based painted surfaces and may also require notice to building occupants. **Do not remove or sand lead-based paint without consulting a qualified lead professional for guidance on lead-based paint testing and safety precautions.** Armstrong Flooring does not recommend the use of solvents to remove paint, varnish, oil, wax or old adhesive residues because the solvents can remain in the subfloor and negatively affect the new installation. Whenever sanding, be certain the work site is well ventilated and avoid breathing dust. If high dust levels are anticipated, use appropriate National Institute for Occupational Safety and Health (NIOSH) designated dust respirator. All power sanding tools must be equipped with dust collectors. Avoid contact with skin or eyes. Wear gloves, eye protection and long-sleeve, loose fitting clothes
 - 5. For additional information on the installation and preparation of wood and boardtype underlayments see the current edition of ASTM F1482, "Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring."
 - 6. Vacuum or broom-clean surfaces to be covered immediately before the application of flooring.

3.04 INSTALLATION OF FLOORING

- A. Install flooring in strict accordance with the latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061. Failure to comply may result in voiding the manufacturer's warranty listed in Section 1.08.
- B. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.
- C. If required, install flooring on pan-type floor access covers. Maintain continuity of color and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.
- D. Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and builtin furniture and cabinets.
- E. Roll with a 100-pound (45.36 kilogram) roller in the field areas. Refer to specific rolling instructions of the flooring manufacturer
- F. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.

3.05 INSTALLATION OF ACCESSORIES

- A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.
- B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.
- C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.
- D. Apply [butt-type] [overlap] metal edge strips where shown on the drawings, [before] [after] flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

3.06 CLEANING

- A. Perform initial and on-going maintenance according to the latest edition of Armstrong Flooring Maintenance Recommendations and Procedures manual, F-8663.

3.07 PROTECTION

- A. Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings. (See Finishing The Job in the latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F5061.)

END OF SECTION

SECTION 096519
Resilient Tile Flooring

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
 - 1. Flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.
- B. Related Documents
 - 1. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.
- C. Related Sections:
 - 1. Other Division 9 sections for floor finishes related to this section but not the work of this section
 - 2. Division 3 Concrete; not the work of this section
 - 3. Division 6 Wood and Plastics; not the work of this section
 - 4. Division 7 Thermal and Moisture Protection; not the work of this section

1.02 REFERENCES

- A. Armstrong Flooring Technical Manuals
 - 1. Armstrong Flooring Guaranteed Installation Systems manual, F-5061
- B. ASTM International:
 - 1. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
 - 2. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
 - 3. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
 - 4. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
 - 5. ASTM F 1700 Standard Specification for Solid Vinyl Tile
 - 6. ASTM F 1861 Standard Specification for Resilient Wall Base
 - 7. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
 - 8. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.
- B. Administrative Requirements
 - 1. Pre-installation Meeting: Conduct an on-site pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
 - 2. Pre-installation Testing: Conduct pre-installation testing as follows: [Specify testing (i.e. moisture tests, bond test, pH test, etc).]
- C. Test Installations/ Mock-ups: Install at the project site a job mock-up using acceptable products and manufacturer approved installation methods, including concrete substrate testing. Obtain Owner's and Consultant's acceptance of finish color, texture and pattern, and workmanship standards.

1. Mock-Up Size: To be determined.
 2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
 3. Incorporation: Mock-up may be incorporated into the final construction with Owner's approval.
- D. Sequencing and Scheduling
1. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring.
 2. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond, moisture tests and pH test.

1.04 SUBMITTALS

- A. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions (latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061. for flooring and accessories.
- B. Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.
- C. Submit Safety Data Sheets (SDS) available for adhesives, moisture mitigation systems, primers, patching/leveling compounds, floor finishes (polishes) and cleaning agents and Material Information Sheets for flooring products.
- D. If required, submit the manufacturer's certification that the flooring has been tested by an independent laboratory and complies with the required fire tests.
- E. Closeout Submittals: Submit the following:
 1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
 2. Warranty: Warranty documents specified herein

1.05 QUALITY ASSURANCE

- A. Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including moisture mitigation systems, primers, leveling and patching compounds, and adhesives.
- B. Select an installer who is experienced and competent in the installation of Armstrong resilient solid vinyl tile flooring and the use of Armstrong Flooring subfloor preparation products.
 1. Engage installers certified as Armstrong Commercial Flooring Certified Installers
 2. Confirm installer's certification by requesting their credentials
- C. Fire Performance Characteristics: Provide resilient tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:
 1. ASTM E 648 (NFPA 253) Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I
 2. ASTM E 662 (NFPA 258) (Smoke Generation) Maximum Specific Optical Density of 450 or less
 3. CAN/ULC-S102.2 – Flame Spread Rating and Smoke Developed – Results as tested

1.06 DELIVERY, STORAGE AND HANDLING

- A. Comply with Division 1 Product Requirements Sections
- B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.
- D. Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.07 PROJECT CONDITIONS

- A. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of 85°F (29°C) for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55°F (13°C) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Refer to the Armstrong Flooring Guaranteed Installations Systems manual, F-5061 for a complete guide on project conditions.

1.08 LIMITED WARRANTY

- A. Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.
- B. Limited Warranty Period: 20 years for Duo™ Luxury Flooring.
- C. The Limited Warranty 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 the requirements of the Contract Documents.
- D. For the Limited Warranty to be valid, this product is required to be installed using the appropriate Armstrong Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

1.09 EXTENDED SYSTEM LIMITED WARRANTY

- A. Resilient Flooring System: Submit a written warranty executed by the manufacturer, agreeing to repair or replace system (subfloor preparation products, adhesive, and floor covering) that fails within the warranty period.
- B. Limited Warranty Period: 10 years on top of the Resilient Flooring Limited Warranty
- C. [S-463 Level Strong™ cement based self-leveling compound] [S-466 Patch Strong™ flexible patching and smoothing compound] [S-464 Prime Strong™ acrylic primer for porous substrates] [S-465 NP Prime Strong™ acrylic primer for non-porous substrates] [S-462 Seal Strong™ two part moisture mitigation system]
- D. The installation of an Armstrong Flooring product along with the recommended Armstrong Flooring adhesive, as well as any one of the Strong System subfloor preparation products listed above, provides 10 additional years of limited warranty coverage. The Strong System limited warranty covers the installation integrity for the length of the flooring product warranty plus 10 years. In order to qualify for the Strong System Warranty, any subfloor preparation product needed for an installation must be an Armstrong Flooring product.

- E. For the System Limited Warranty to be valid, this product is required to be installed using the appropriate Armstrong Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.
- F. When Armstrong Flooring Strong System subfloor preparation products are used with other manufacturers' floor coverings, adhesives, or other subfloor preparation products, Armstrong Flooring warrants our products to be free from manufacturing defects from the date of purchase through the limited warranty period of 15 years.

1.10 MAINTENANCE

- A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials from same production run as products installed. Packaged with protective covering for storage and identified with appropriate labels.
 - 1. Quantity: Furnish quantity of flooring units equal to 10% of amount installed.
 - 2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra material.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Resilient tile flooring, wall base, adhesives and subfloor preparation products and accessories:
 - 1. Armstrong Flooring Inc., 1770 Hempstead Road, Lancaster, PA 17605, www.armstrongflooring.com/commercial
 - 2. Manufacturer must have a headquarters in the United States of America

2.02 RESILIENT TILE FLOORING MATERIALS

- A. Provide Biome™ Luxury Flooring manufactured by Armstrong Flooring Inc.
 - 1. Description: A layered construction consisting of a tough, clear, rigid vinyl wear layer protecting a high-fidelity print layer on a solid vinyl backing. Protected by a diamond-infused UV-cured polyurethane finish, the wear surface is embossed with different textures to enhance each of the printed visuals. Colors are insoluble in water and resistant to cleaning agents and light.
 - 2. Reference specification - ASTM F 1700, "Standard Specification for Solid Vinyl Tile", Class III, Type B – Embossed Surface. Meets requirements for size, squareness, thickness, thickness of wear layer, residual indentation, resistance to chemicals, resistance to light and resistance to heat.
 - 3. Pattern and Color: TBD. Colors selected from the range currently available from Armstrong Flooring Inc.
 - 4. Size: [36 in. x 6 in. (914.4 mm x 152.4 mm)] [18 in. x 36 in. (457.2 mm x 914.4 mm)].
 - 5. Wear layer thickness: 0.020 (0.5 mm)
 - 6. Thickness: 0.100 in. (2.5 mm)

2.03 PRODUCT SUBSTITUTION

- A. Substitutions: No substitutions permitted.

2.04 WALL BASE MATERIALS

- A. For top set wall base: [Provide 1/8 in. (3.18 mm) thick, 4 in. (10.16 cm) high Armstrong Flooring Color-Integrated Wall Base with a matte finish, conforming to ASTM F 1861, Type TP - Rubber, Thermoplastic, Group 1 - Solid, Style B – Cove.] [Provide 1/4 in. (6.35 mm) thick, 4.5 in. (11.43 cm) high Armstrong Flooring Color-Integrated Wall Base with a matte finish, conforming to ASTM F 1861, Type TP - Rubber, Thermoplastic, Group 1 - Solid, Style A – Straight.

2.05 ADHESIVES

- A. Provide Armstrong S-999 Flooring Adhesive under the flooring and Armstrong S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer.
- B. [Provide Armstrong S-319 Adhesive for field areas and S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer].
- C. [Provide Armstrong S-1000 Flooring Adhesive under the flooring and Armstrong S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer].

2.06 ACCESSORIES

- A. For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), provide Armstrong [S-184 Fast-Setting Cement-Based Patch and Underlayment] [S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive] [S-463 Level Strong™ cement based self-leveling compound] [S-466 Patch Strong™ flexible patching and smoothing compound].
- B. [For priming porous substrates to aid in adhesive bond strength and reducing subfloor porosity, provide S-464 Prime Strong™ acrylic primer for porous substrates. For non-porous substrates, provide S-465 NP Prime Strong™ acrylic primer for non-porous substrates].
- C. [For creating a moisture barrier, provide S-462 Seal Strong™ two-part moisture mitigation system].
- D. For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.
- E. Provide transition/reducing strips tapered to meet abutting materials.
- F. Provide threshold of thickness and width as shown on the drawings.
- G. Provide resilient edge strips of width shown on the drawings, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available.
- H. Provide metal edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage or overlap-type metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).
- B. Visually inspect flooring materials, adhesives and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.
- C. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.
- D. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.
- E. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.
- F. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.03 PREPARATION

- A. [Subfloor Preparation: Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with Armstrong Flooring [S-184 Fast-Setting Cement-Based Patch and Underlayment][S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive] [S-463 Level Strong™ cement based self-leveling compound] [S-466 Patch Strong™ flexible patching and smoothing compound] [S-464 Prime Strong™ acrylic primer for porous substrates] [S-465 NP Prime Strong™ acrylic primer for non-porous substrates] as recommended by the flooring manufacturer. Refer to Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.]
- B. [Subfloor Preparation Moisture Mitigation: Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, mitigate moisture and other defects with Armstrong Flooring [S-184 Fast-Setting Cement-Based Patch and Underlayment][S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive] [S-463 Level Strong™ cement based self-leveling compound] [S-466 Patch Strong™ flexible patching and smoothing compound] [S-462 Seal Strong™ two part moisture mitigation system] [S-464 Prime Strong™ acrylic primer for porous substrates] [S-465 NP Prime Strong™ acrylic primer for non-porous substrates] as recommended by the flooring manufacturer. Refer to Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.]
- C. Subfloor Cleaning: The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, sealers, release agents, curing compounds, residual adhesive, adhesive removers and other foreign materials that might affect the adhesion of resilient flooring to the concrete or cause a discoloration of the flooring from below. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents. Spray paints, permanent markers and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the concrete slab as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate they must be mechanically removed prior to the installation of the flooring material. Refer to the

Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.

- D. When using S-999 Adhesive, perform subfloor moisture testing in accordance with ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using *in-situ* Probes" and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Internal relative humidity of the concrete shall not exceed 99%. On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained.
- E. [When using S-319 Adhesive, perform subfloor moisture testing in accordance with ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using *in-situ* Probes" and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," manual to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Internal relative humidity of the concrete shall not exceed 99%. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained].
- F. [When using S-1000 Adhesive, perform subfloor moisture testing in accordance with [ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Slabs Using *in-situ* Probes"] [ASTM F 1869, "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride"] and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Internal relative humidity of the concrete shall not exceed 100%.][MVER shall not exceed 14 lbs./1000 sq. ft./24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained].
- G. Concrete pH Testing: Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained.
- H. Wood subfloors: Armstrong resilient floors are recommended on suspended wood subfloors with a 1/4" underlayment (see product installation systems for exceptions) and a minimum of 18" of well-ventilated air space below. Armstrong Flooring does not recommend installing resilient flooring on wood subfloors applied directly over concrete or on sleeper-construction subfloors. Loading requirements for subfloors are normally set by various building codes on both local and national levels. Trade associations such as APA—The Engineered Wood Association provide structural guidelines for meeting various code requirements. Subfloor panels are commonly marked with span ratings showing the maximum center-to-center spacing in inches of supports over which the panels should be placed.
 - 1. Refer to the Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use under Resilient Flooring for additional information.
- I. Wood subfloors - Surface Cleaning: Make subfloor free from dust, dirt, grease, and all foreign materials.
 - 1. Check panels for sources of discoloration such as contamination from paint, varnish, stain overspray or spills, plumbing sealers, asphalt, heater fuel, markers or potential staining agents such as wood or bark not visible on the surface, edge sealers, logo markings, printed nail patterns and synthetic patches.
 - 2. Remove old adhesive.
 - 3. Cover adhesive, oil or wax residue with an appropriate underlayment. If the residue is tacky, place a layer of felt or polyethylene sheeting over it to prevent a cracking sound when walking on the floor.

4. Remove all paint, varnish, oil and wax from all subfloors. Many buildings constructed before 1978 contain lead-based paint, which can pose a health hazard if not handled properly. State and federal regulations govern activities that disturb lead-based painted surfaces and may also require notice to building occupants. **Do not remove or sand lead-based paint without consulting a qualified lead professional for guidance on lead-based paint testing and safety precautions.** Armstrong Flooring does not recommend the use of solvents to remove paint, varnish, oil, wax or old adhesive residues because the solvents can remain in the subfloor and negatively affect the new installation. Whenever sanding, be certain the work site is well ventilated and avoid breathing dust. If high dust levels are anticipated, use appropriate National Institute for Occupational Safety and Health (NIOSH) designated dust respirator. All power sanding tools must be equipped with dust collectors. Avoid contact with skin or eyes. Wear gloves, eye protection and long-sleeve, loose fitting clothes
5. For additional information on the installation and preparation of wood and board-type underlayments see the current edition of ASTM F1482, "Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring."
6. Vacuum or broom-clean surfaces to be covered immediately before the application of flooring.

3.04 INSTALLATION OF FLOORING

- A. Install flooring in strict accordance with the latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061. Failure to comply may result in voiding the manufacturer's warranty listed in Section 1.08.
- B. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.
- C. If required, install flooring on pan-type floor access covers. Maintain continuity of color and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.
- D. Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.
- E. Roll with a 100-pound (45.36 kilogram) roller in the field areas. Refer to specific rolling instructions of the flooring manufacturer.
- F. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.

3.05 INSTALLATION OF ACCESSORIES

- A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.
- B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.
- C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.
- D. Apply [butt-type] [overlap] metal edge strips where shown on the drawings, [before] [after] flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

3.06 CLEANING

- A. Perform initial and on-going maintenance according to the latest edition of the maintenance recommendations for Duo™.

3.07 PROTECTION

- A. Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings. (See Finishing The Job in the latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061.)

END OF SECTION

SECTION 102113.19
PLASTIC TOILET COMPARTMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Solid plastic (HDPE) partitions.

1.2 RELATED SECTIONS

- A. Section 055000 - Metal Fabrications: Concealed steel support members.
- B. Section 061100 - Wood Framing: Concealed wood framing and blocking for compartment support.
- C. Section 102800 – Toilet, Bath and Laundry Accessories.

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 2. ASTM D 1735 - Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus.
 - 3. ASTM D 2247 - Standard Practice for Testing Water Resistance of Coatings in 100 percent Relative Humidity.
- B. National Fire Protection Association: NFPA 286 - Standard Methods of Fire Test for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.
- C. United States Green Building Council (USGBC): LEED Green Building Rating System.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Literature indicating typical panel, pilaster, door, hardware and fastening.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods.
- C. Shop Drawings:
 - 1. Dimensioned plans indicating layout of toilet compartments.
 - 2. Dimensioned elevations indicating heights of doors, pilasters, separation partitions, and other components; indicate locations and sizes of openings in compartment separation partitions for toilet and bath accessories to be installed in partitions; indicate floor and ceiling clearances.
 - 3. Details indicating anchoring components (bolt layouts) and methods for project conditions; indicate components required for installation, but not supplied by toilet compartment manufacturer.
- D. Selection Samples: For each finish product specified, one complete set of color selection guides representing manufacturer's full range of available colors, textures and patterns.

- E. Verification Samples: For each finish product specified, two samples representing actual product, color, texture and pattern.
- F. LEED Green Building Rating System: Submit manufacturer's documentation of recycled content, in accordance with LEED credit calculations.
- G. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations and industry standards.
- B. Store products indoors in manufacturer's or fabricator's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.
- C. Lay cartons flat, with adequate support to ensure flatness and to prevent damage to pre-finished surfaces.
- D. Do not store where ambient temperature exceeds 120 degrees F (49 degrees C).

1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- B. Do not deliver materials or begin installation until building is enclosed, with complete protection from outside weather, and building temperature maintained at a minimum of 60 degrees F (15.6 degrees C).

1.7 WARRANTY

- A. Manufacturer's Standard Warranty: For solid plastic HDPE material against breakage, corrosion, and delamination for 25 years.

1.8 COORDINATION

- A. Coordinate Work with placement of support framing and anchors in walls and ceilings.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: ASI Accurate Partitions, 160 Tower Drive, Burr Ridge, IL 60527, Tel: 708-442-6800, Email: info@asi-accuratepartitions.com, Web: <http://www.asi-accuratepartitions.com>.
 - 1. Other Acceptable Manufacturer: ASI Global Partitions, Eastanollee, GA, Tel: 706-827-2700; Web: www.asi-globalpartitions.com.
 - 2. No other manufacturer will be accepted.
- B. Substitutions: Not permitted.

2.2 COMPARTMENTS AND SCREENS

- A. Toilet Compartments: Floor anchored/overhead braced solid plastic panels.
 - 1. Compartment Depth and Width: As scheduled and indicated on Drawings.
 - 2. Door Width: As scheduled and indicated on the Drawings.

3. Height Above Floor: 14 inches (356 mm).
 4. Door/Panel Height: 55 inches (1397 mm).
 5. Pre-K Restrooms Door/Panel Height: 42 inches
 6. Pre-K Restrooms Height Above Floor: 12 inches
 7. Pilaster Height: 82 inches (2083 mm).
- B. Privacy and Urinal Screens: Wall hung.
1. Screen Panel Size: 24 inches wide by 42 inches high.
 2. Urinal screens shall have pilasters at ends for stabilization.

2.3 SOLID PLASTIC TOILET COMPARTMENTS

- A. Doors, Panels, Screens, and Pilasters: Single sheet solid, homogenous HDPE plastic material manufactured from waterproof, non-absorbent, high-density polyethylene resins; mark-resistant self-lubricating surface; edges finished smooth.
1. Material: Solid, homogenous HDPE; 1 inch (25 mm) thick.
 2. NFPA 286 Compliant HDPE
 3. Edges: 1/4 inch (6 mm) radius machined edges.
 4. Heat Sink: Aluminum heat sink, to dissipate heat from incendiary devices used by vandals, attached to bottom of doors and panels.
- B. Finish: Hammered-textured homogenous color throughout material.
1. Color: 9511 Metallic Silver
- C. Door Hardware: Cam-Action Piano Hinge
1. Hinge: Continuous cam action stainless steel piano hinge. Holds door in a partially open or closed position when at rest.
 2. Latch: Stainless Steel Indicator Latch
 3. Strike and Keeper: Stainless Steel No Sight Line Strike.
 4. Coat Hook and Bumper: Non-ferrous, chrome-plated, with black rubber tip for door stop.
 5. Fastening Hardware: Manufacturer's standard, stainless steel, theft-resistant barrel nuts and shoulder screws.
 6. Door Pulls: Stainless Steel. Standard on ADA and Ambulatory compartments. Two per ADA door.
- D. Mounting Brackets: Stainless steel continuous bracket with theft resistant barrel nuts and shoulder screws.
- E. Pilaster Shoes: Overhead braced. Type 304 Stainless Steel, No. 4 satin finish. EZ Stall shoe shall be of a one piece design and integral to the mounting system and formed from 304 stainless steel 3 inch (76 mm) high with a No. 4 satin finish. Pilaster shoes are anchored to the pilaster with No. 10 stainless steel, vandal-resistant screws.
- F. Headrail: manufacturer's standard anodized aluminum rail with anti-grip profile.
- G. Pilaster Anchors, Floor Anchored/Overhead Braced:
1. EZ Stall shoe system. 1/4 by 2 inch (6 by 51 mm) steel screws attach Easy Stall shoe to floor.
 2. Pilaster to be inserted into shoe and secured after height adjusted. Leveling adjustment to be concealed by pilaster shoe.
 3. Height/leveling adjustment to be made via machine thread bolts inserted into factory installed threaded insert in bottom of pilaster.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Inspect and prepare substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions. Clean surfaces thoroughly prior to installation.
- B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
- C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
 - 1. Verify dimensions of areas to receive compartments.
 - 2. Verify locations of built-in framing, anchorage, bracing, and plumbing fixtures.

3.2 INSTALLATION

- A. Install in accordance with approved shop drawings and manufacturer's instructions.
- B. Fasten components to adjacent materials and to other components using purpose-designed fastening devices.
- C. Adjust pilaster anchors for substrate variations; conceal anchors with pilaster shoes.
- D. Equip each compartment door with hinges and door latch.
- E. Install door strike keeper on pilasters in alignment with door latch.
- F. Equip each compartment door with one coat hook and bumper.
- G. Installation Tolerances:
 - 1. Maximum variations from plumb or level: 1/8 inch (3 mm).
 - 2. Clearance between wall surface and panels or pilasters: 1-1/4 inch (32 mm) maximum.

3.3 ADJUSTING

- A. Adjust and align hardware to uniform clearance at vertical edge of doors.
- B. Adjust adjacent components for consistency of line or plane.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.
- C. Remove factory protective coverings and clean finish surfaces in accordance with manufacturer's instructions before substantial completion.

END OF SECTION

SECTION 102800
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cabinet-type toilet accessories.
 - 1. Traditional Collection.
- B. Toilet accessories.
- C. Grab bars.

1.2 RELATED SECTIONS

- A. Section 092000 – Plaster and Gypsum Board
- B. Section 093000 - Tiling
- C. Section 102113.19 – Plastic Toilet Compartments.

1.3 REFERENCES

- A. Americans with Disabilities Act Accessibility Guidelines (ADA).

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's product data for products specified, indicating selected options and accessories.
- C. Shop Drawings:
 - 1. Plans: Locate each specified unit in project.
 - 2. Elevations: Indicate mounting height of each product.
 - 3. Details: Indicate anchoring and fastening details, required locations and types of anchors and reinforcement, and materials required for installation of specified products.
- D. LEED Requirements: Provide products required by this section with attributes that contribute to the project sustainability goals:
 - 1. MR Credit 4.1 - Recycled Content (post-consumer).
 - 2. MR Credit 4.2 - Recycled Content (post-industrial).
- E. Verification Samples: Two sample chips of each specified color and finish.
- F. Quality Assurance Submittals:
 - 1. Manufacturer's printed installation instructions for each specified product.
 - 2. Documentation of Manufacturer's Qualifications, specified in 1.5 of this Section.
- G. Closeout Submittals: Warranty, issued and executed by manufacturer, and countersigned by Contractor.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum five years documented experience producing products specified.
- B. Source Limitations: To the greatest extent possible products shall be provided by a single manufacturer.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Ship products in manufacturer's standard protective packaging with vinyl coating on exposed surfaces.
- B. Storage and Protection: Store products in manufacturer's protective packaging until installation.

1.7 SEQUENCING

- A. Supply locations, dimensions, and other pertinent details to installing Contractor for coordination of blocking, support and recess size and locations required for accessory installation.
- B. Supplier / Installer Responsibility, as noted on each product.
 - 1. CFCI equals Contractor Furnished, Contractor Installed.
 - 2. OFCI equals Owner Furnished, Contractor Installed.

1.8 WARRANTY

- A. Manufacturer's standard warranty against defects in product workmanship and materials.
- B. Manufacturer's 15-year warranty against silver spoilage of mirrors.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers: American Specialties, Inc.; 441 Saw Mill River Road, Yonkers NY 10701-4913. ASD. Tel: (914) 476-9000. Fax: (914) 476-0688. Email: info@americanspecialties.com. Web: <http://www.americanspecialties.com>.
- B. Substitutions: See Section 01600 - Product Requirements.

2.2 CABINET-TYPE TOILET ACCESSORIES (TRADITIONAL COLLECTION)

- A. Basic Construction Requirements:
 - 1. Doors: 22 ga stainless steel, double pan construction, with 1/4 in (6 mm) thick structural fiberboard core.
 - 2. Cabinets: 22 ga stainless steel, formed perimeter trim with 1/4 in (6 mm) return to wall four sides; joints welded, sight-exposed welds finished to match sheet finish.
 - 3. Hinges: Stainless steel piano hinge, 3/16 in (4.8 mm) dia barrel, full length of cabinet; hinge leaves spot-welded to door and cabinet body.
 - 4. Locks: Tumbler locks, keyed like other toilet accessories, with two keys for each lock.
 - 5. Cabinet and Door Finish: Satin finish.
- B. Hand Dryers: (CFCI): Bobrick B-7128, surface mounted, sensor operated; Color: Stainless Steel H13-19/32" x W13-25/32" x D4"
- C. Paper Towel Dispenser: San Jamar #T1100, 8" W x 8" Dia. Roll Towel Dispenser; Color: TBK Black H16 1/2" x W12-15/16" x D9 1/4".

- D. Waste Receptacles: Traditional Collection by ASI. (CFCI)
 - 1. Circular Counter Top Waste Chute: Model 1000. Provides waste deposit access to receptacle (not furnished) placed directly below chute. Made of 16 ga stainless steel, rolled flange and exposed surfaces have Satin finish.
 - 2. Freestanding Waste Receptacle with Top: Model 0810 Stainless Steel. Capacity: 14.3 Gal.

2.3 TOILET ACCESSORIES

- A. Basic Construction Requirements:
 - 1. Doors: 22 ga satin stainless steel, formed hems at sight-exposed edges.
 - 2. Cabinets: 22 ga satin stainless, formed hems at sight-exposed edges; joints welded.
 - 3. Hinges: Stainless steel piano hinge, 3/16 in (4.8 mm) dia barrel, full length of cabinet; hinge leaves spot-welded to door and cabinet body.
 - 4. Locks: Tumbler locks, keyed alike other toilet accessories, two keys for each lock.
- B. Custodial Accessories: As manufactured by ASI. (CFCI)
 - 1. Shelf with Utility Hooks and Mop Strip: Constructed of type 304 satin finish stainless steel. Shelf is 8 in (200 mm) deep with 3/4 in (19 mm) return for rigidity. Mop holders are riveted to strip and rubber cam is ribbed for grasping. 14-1/2 in (370 mm) high.
 - a. Model 1308-4: 4 mop holders/5 utility hooks, 44 in (1120 mm) long.
- C. Feminine Hygiene Disposals: As manufactured by ASI. (CFCI)
 - 1. End Stall / Surface Mounted Sanitary Disposal: Model 0473-1A. Self-closing doors mounted to cabinet w/heavy duty full length piano hinge.
 - 2. Recessed Sanitary Disposal: Model 0473-A. Self-closing doors mounted to cabinet w/heavy duty full length piano hinge.
 - 3. Partition Mounted Dual Access Sanitary Disposal: Model 0472-1. Serves two compartments mounted in partitions. Receptacle removable from 1 side for servicing, locks to back of cabinet with stainless clips. Self-closing doors on each side mounted to cabinet w/heavy duty full length piano hinge.
- D. Mirrors: As manufactured by ASI. (CFCI)
 - 1. Channel Frame Mirror: Model 0620. 1/2 in x 1/2 in x 1/2 in (13 mm x 13 mm x 13 mm) 20 ga type 304 satin stainless channel, one piece roll formed member; installed on two wall brackets, held secure by theft resistant screw.
- E. Shower Curtain Rods: As manufactured by ASI. (CFCI)
 - 1. Shower Curtain Hook: Model 1200-SHU. Stainless steel hook for rods 1 in (25 mm) and 1-1/4 in (32 mm) dia.
 - 2. Vinyl Shower Curtain: Model 1200-V. Flame resistant, anti-bacterial, 8 ga vinyl fabric. Curtain shall be 6 in (150 mm) wider than opening up to 48 in (1220 mm) and 12 in (305 mm) wider than openings exceeding 48 in (1220 mm). Sizes and colors as scheduled or indicated on Drawings.
 - 3. Extra Heavy-Duty Shower Curtain Rod: Model 1204. Flanges 3 in (75 mm) dia, 20 ga type 304 satin stainless. 1-1/4 in (32 mm) dia rod, 18 ga type 304 satin stainless tubing. Available in lengths up to 96 in (2440 mm).
- F. Shower Seats: As manufactured by ASI. (CFCI)
 - 1. Compact Folding Seat: Model 8203. Seat shall be 5/16 in (8 mm) thick, one piece, solid phenolic, ivory color. Frame, support legs, flanges and bracket shall be type 304 satin finished stainless steel. Provide a self-locking mechanism. Seat measures 18 in (460 mm) wide and projects 16 in (405 mm) from wall.
- G. Soap Dispensers: OFCI
- H. Toilet Seat Cover Dispensers: As manufactured by ASI. (CFCI)

1. Surface Mounted Toilet Seat Cover Dispenser: Model 0477-SM. Door has tumbler lock, dispenses 250 single or half-fold seat covers.
- I. Toilet Tissue Dispenser: San Jamar #R4000, 9" JBT Junior Roll Twin Tissue Dispenser; Color: TBK Black H12" x W19" x D5¼".

2.4 GRAB BARS

- A. Grab Bars: (CFCI)
 1. Size: Straight grab bar, lengths 36 inches, 42 inches and 18 inches.
 2. Covers: Snap over flange to conceal screws; type 304 stainless steel, 22 ga, 3-3/16 in (81 mm) dia.
 3. Concealed Mounting Flanges: 3-1/8 in (79 mm) O.D. dia with two screw holes and three locking dimples; 1/8 in (3 mm) thick, type 304 stainless steel.
 4. Series: 3800 Series by ASI (or approved equal); 1-1/2 in (38 mm) dia handrail with snap-on flange covers.
 - a. Product: Model 3800.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect and prepare substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions.
 1. Verify reinforcement and anchoring devices are correct type and are located in accordance with shop drawings.
- B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
- C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

3.2 INSTALLATION

- A. Install toilet accessories plumb and level in accordance with shop Drawings and manufacturer's printed installation instructions.
- B. Locate toilet accessories at heights and locations required for compliance with local accessibility regulations and the Americans with Disabilities Act.

3.3 CLEANING

- A. Remove manufacturer's protective vinyl coating from sight-exposed surfaces 24 hours before final inspection.
- B. Clean surfaces in accordance with manufacturer's recommendations.

3.4 PROTECTION OF INSTALLED PRODUCTS

- A. Protect products from damage caused by subsequent construction activities.
- B. Field repair of damaged product finishes is prohibited; replace products having damaged finishes caused by subsequent construction activities.

END OF SECTION