



CITY OF BEVERLY HILLS
DEPARTMENT OF PUBLIC WORKS
345 N. FOOTHILL ROAD
BEVERLY HILLS, CALIFORNIA 90210

ADDENDUM NO. 2

LIBRARY ADMINISTRATION STAFF OFFICES IMPROVMENTS PROJECT

BID NO. RFB-19-350-14

DATE OF ADDENDUM: JULY 25, 2019

The following changes, omissions, and/or additions to the Specifications and/or Drawings shall apply to proposals made for and to the execution of the various parts of the work affected thereby, and all other conditions shall remain the same. In case of conflict between Drawings, Specifications, and this Addendum, this Addendum shall govern.

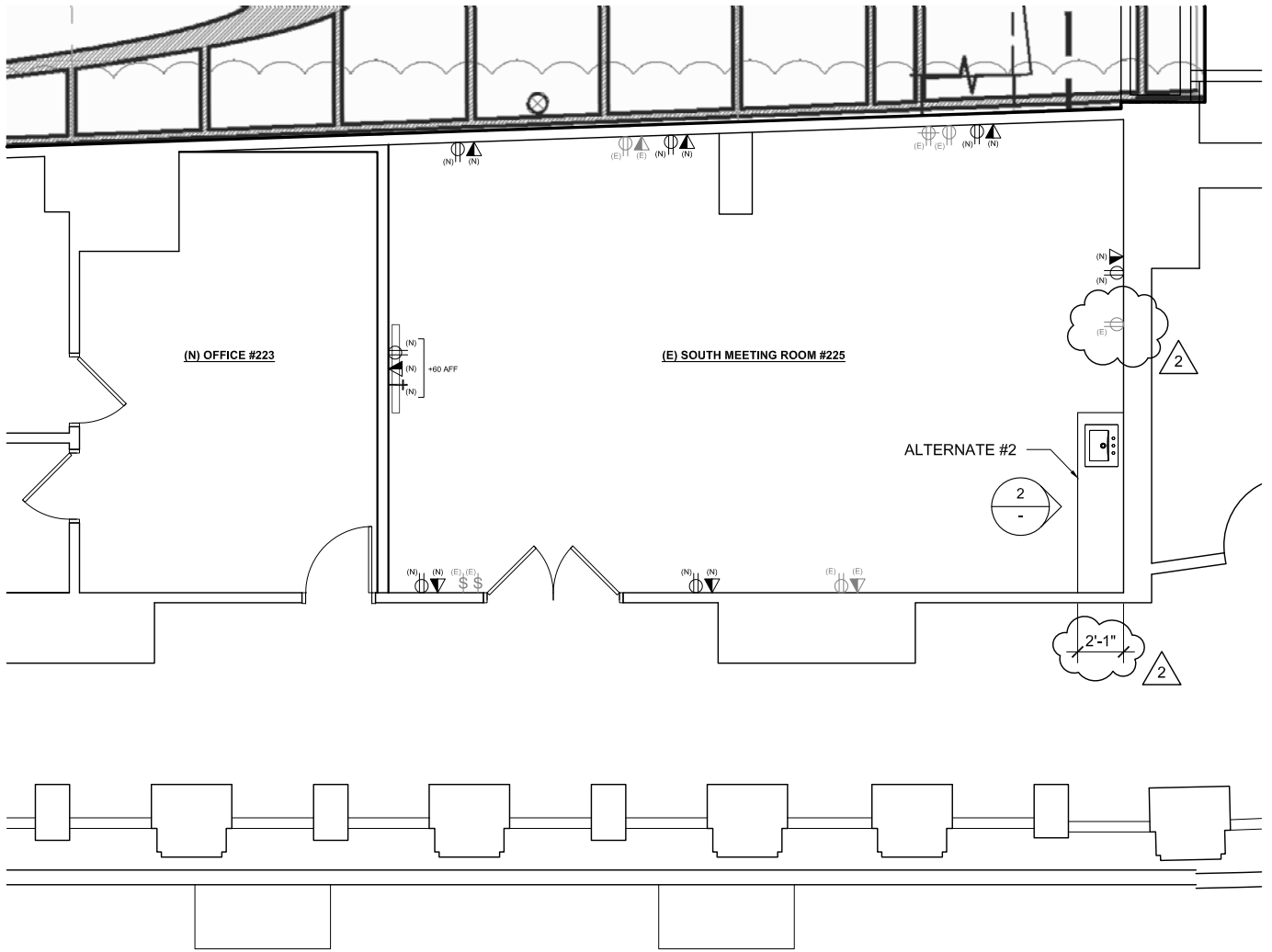
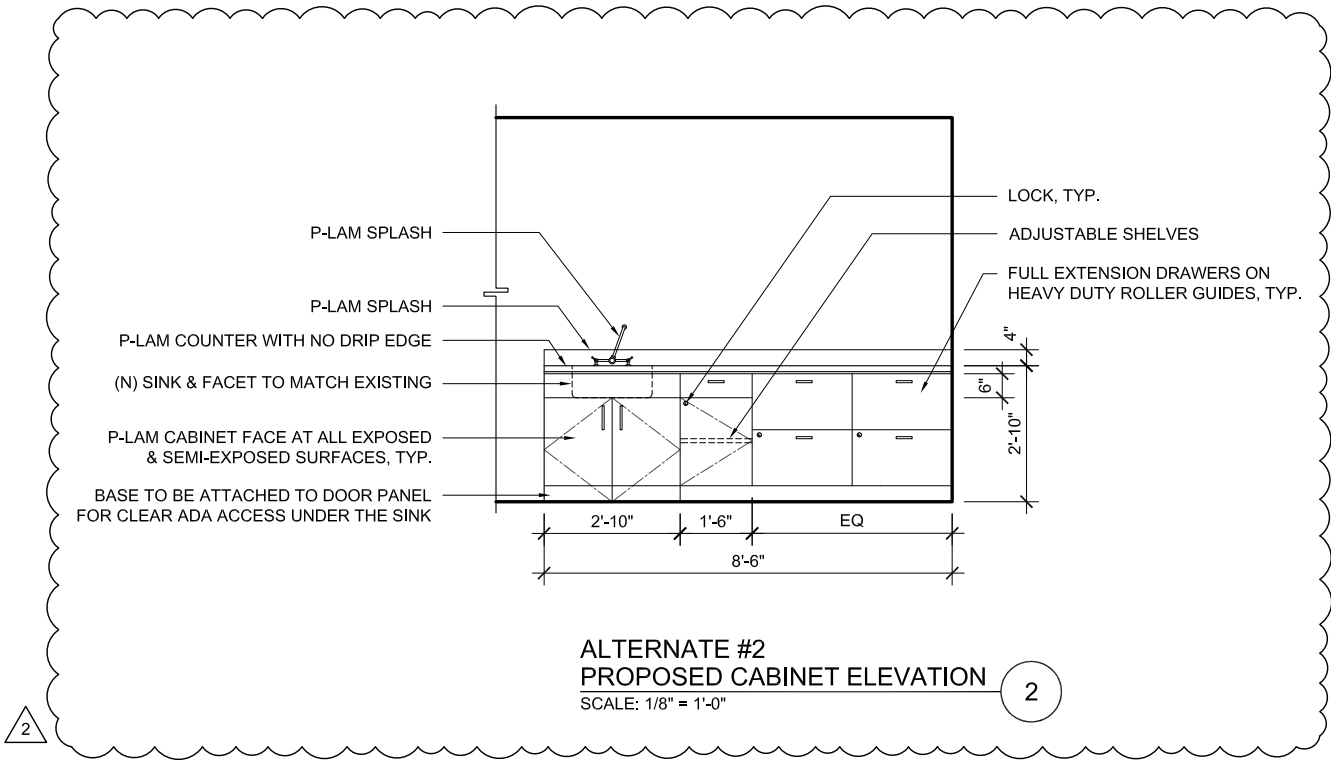
ITEM NO. 1 – “SK-1 Drawing Revision and Scope of Work Clarification”

Refer to revised SK-1 – (E) South Meeting Room Plan and Proposed Cabinet Elevation (with Delta 2) provided in this Addendum No.2.

- 1.1 Please refer to Addendum No.1 – Item 3.1.
In addition to the scope of work indicated on Addendum No.1 – Item 3.1, entire room shall be painted. Color and finish to match existing. Both scope of work shall be completed before Phase 1 starts.
- 1.2 As indicated on the revised SK-1 – (E) South Meeting Room Plan, cabinet depth shall be 2’-1”.
- 1.3 As indicated on the revised SK-1 – (E) South Meeting Room Plan, location of the additional existing outlet has been included in the drawing.
- 1.4 As indicated on the revised SK-1 – Proposed Cabinet Elevation, additional information on cabinet component have been included in the drawing.

ITEM NO. 2 – “Specification”

- 2.1 Revised Specification Table of Content and Specifications has been included in this addendum.



LIBRARY ADMINISTRATION STAFF OFFICES IMPROVMENTS PROJECT

BID NO. RFB-19-350-14

SPECIFICATIONS

1.0 TECHNICAL SPECIFICATIONS

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21 11 00 Fire Protection (Design/Build - Deferred Approval Item)

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23 50 00 HVAC Systems (On the Drawings)

Electrical

26 05 00 Electrical General Requirements (On the Drawings)

SECTION 05 40 00

LIGHTGAGE FRAMING

PART 1 - GENERAL

1.1 SUMMARY

- A. Work includes: "C" shaped steel framing components as indicated on the Drawings and specified herein.

1.2 SUBMITTALS

- A. Submit copies of manufacturer's product information and installation instructions for each item of framing and accessories.
- B. Submit large scale wall elevations, sections, details and shop drawings for all components
- C. Scrap collection and recycling plan: Contractor shall prepare and submit a scrap collection and recycling plan for all miscellaneous and structural steel.

1.3 QUALITY ASSURANCE

- A. Component Design: Compute structural properties of framing system components in accordance with AISI Specifications for the Design of Cold-Formed Steel Structural Members; and CBC.
- B. Fire-Rated Assemblies: Where framing units are components of assemblies indicated for a fire-resistance rating, including those required for compliance with governing regulations, provide units which have been approved.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Protect metal framing units and components from rusting and damage. Deliver to project site in manufacturer's unopened containers or bundles fully identified with name, brand, type and grade.
- B. Store off ground in dry, ventilated space or protect with approved waterproof coverings.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Provide materials and products manufactured by one of the members of the Steel Framing Industry Association (SFIA) or Steel Stud Manufacturers' Association (SSMA)

2.2 METAL FRAMING

- A. System Components: With each type of metal framing required, provide manufacturer's standard steel runners (tracks), blocking, lintels, clip angles, shoes, reinforcements, fasteners, and accessories necessary for installation indicated.

- B. Materials and Finishes: Refer to Drawings for size, gage, and physical properties of metal studs.
1. For 16 gage and heavier units, fabricate metal framing components of structural quality steel sheet with a minimum yield point of 50,000 p.s.i.; ASTM A446 Grade D.
 2. For 18 gage and lighter units, fabricate metal framing components of commercial quality sheet steel with a minimum yield point of 33,000 p.s.i.; ASTM A653 SQ, A570, or A611.
 3. Provide galvanized finish to metal framing members and components complying with ASTM A525 for minimum G60 zinc coating.
 4. "C" Shape Studs: Provide manufacturer's standard load-bearing steel studs of size, shape, and gage required, with 1.625-inch flange and flange return lip.
 5. Steel Stud Track: Unpunched deep leg track, width and gage as indicated on the drawings.
 6. Steel Furring Channels: 2-inch, 1-1/2 inch and 3/4 inch cold rolled 16 gage, prime painted.
 7. Steel Bridging: "V" bridging, width as required by stud size, 16 gage.
 8. Mechanical Fasteners: Equal to Teks screws as indicated or noted on Drawing

2.3 FABRICATION

- A. Framing components may be prefabricated into panels prior to erection. Fabricate panels plumb, square, true to line and braced against racking with joints welded. Perform lifting of prefabricated panels in manner to prevent damage and distortion in assembly members.
- B. Fastenings: Attach components by welding, bolting, or screw fasteners, as standard with manufacturer.
- C. Wire tying of framing components is not permitted.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to start of installation, review areas of potential interference and conflicts, and coordinate layout and support provisions for interfacing work.

3.2 INSTALLATION

- A. Install framing systems in accordance with drawings, reviewed shop drawings, and manufacturer's recommendations.
- B. Runner Tracks: Install continuous tracks sized to match studs. Align tracks to layout at base and tops of studs. Provide fasteners at corners and ends of tracks. See drawings for details.

- C. Set studs plumb, except as needed for diagonal bracing.
- D. Where stud system abuts structural columns or walls, anchor ends of stiffeners to supporting structure.
- E. Install supplementary framing, blocking and bracing in metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, heavy trim and furnishings, and similar work requiring attachment to wall or partition. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendations and industry standards in each case, considering the weight, loading, and long term effects resulting from the items supported.
- F. Secure studs to top and bottom runner tracks by welding or screw attachment, fastening to both inside and outside flanges.
- G. Frame wall openings larger than 24 inches square with double stud at each jamb of frame except where more than two are shown or indicated in manufacturer's instructions. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jack studs with stud shoes or by welding, and space jack studs same as full height studs of wall. Secure stud system all around to wall opening frame in manner required.
- H. Provide horizontal blocking in stud system, spaced vertically at no more than 4 feet 6-inches, or as recommended by manufacturer whichever is more stringent. Weld at each intersection.

3.3 PROTECTION

- A. Touch-up shop applied protective coatings damaged during handling, fabrication, or installation. Use compatible primer for prime coated surfaces; use galvanizing repair paint for galvanized surfaces.

END OF SECTION

SECTION 06 41 00

ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Specially fabricated cabinet units.
- B. Countertops.
- C. Cabinet hardware.
- D. Factory finishing.
- E. Preparation for installing utilities.

1.02 RELATED SECTIONS

- A. Section 12 36 00 – Countertops.
- B. Section 06 42 30 – Engineered Wood Paneling
- C. Section 09 90 00 – Paints and Coatings: Site finishing of cabinet exterior.

1.03 REFERENCES

- A. ANSI A135.4 - American National Standard for Basic Hardboard; 2004.
- B. ANSI A208.1 - American National Standard for Particleboard; 1999.
- C. ANSI A208.2 - American National Standard for Medium Density Fiberboard for Interior Use; 2002.
- D. AWI/WI/AWMAC- Architectural Woodwork Standards, Latest Edition (AWS)
- E. BHMA A156.9 - American National Standard for Cabinet Hardware; Builders Hardware Manufacturers Association; 2003 (ANSI/BHMA A156.9).
- F. GSA CID A-A-1936 - Adhesive, Contact, Neoprene Rubber; Federal Specifications and Standards; Revision A, 1996.
- G. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; Hardwood Plywood & Veneer Association; 2004 (ANSI/HPVA HP-1).
- H. NEMA LD 3 - High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.
- I. NHLA G-101 - Rules for the Measurement & Inspection of Hardwood & Cypress; National Hardwood Lumber Association; 2003.
- J. PS 1 - Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce); 1995.
- K. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2005.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- 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.
- D. Samples: Submit actual samples of architectural cabinet construction, minimum 12 inches (300 mm) square, illustrating proposed cabinet, countertop, and shelf unit substrate and finish.
- E. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish..

1.05 QUALITY ASSURANCE

- A. Perform work in accordance with AWI/WI/AWMAC Architectural Woodwork Standards, Custom Grade, unless other quality is indicated for specific items.
- D. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- E. Manufacturer Qualifications: Member in good standing of the Architectural Woodwork Institute (AWI), Woodwork Institute (WI), or the Architectural Woodwork Manufacturers Association of Canada (AWMAC) and familiar with the AWI/WI/AWMAC Architectural Woodwork Standards..
- F. Quality Certification:
 - 1. Before delivery to the jobsite the woodwork supplier shall provide a Woodwork Institute Certified Compliance Certificate indicating the millwork products being supplied and Certifying that these products fully meet the requirements of the Grade or Grades specified.
 - 2. Each elevation of casework, each laminated plastic top, and each solid surface top shall bear a Woodwork Institute Certified Compliance Label.
 - 3. At completion of installation the woodwork installer shall provide a Woodwork Institute Certified Compliance Certificate indicating the products installed, and Certifying that the installation of these products fully meets the requirements of the Grade or Grades specified.
 - 4. All fees charged by the Woodwork Institute for their Certified Compliance Program are the responsibility of the millwork manufacturer and/or installer and shall be included in their bid.

1.06 PRE-INSTALLATION MEETING

- A. Convene not less than one week before starting work of this section.

1.07 DELIVERY, STORAGE, AND PROTECTION

- A. Protect units from moisture damage.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fabricate architectural woodwork to "custom grade" standards of the AWS.
- B. Fabricate cabinets in flush overlay design.

- C. At the mill, install the finish hardware.

2.02 PANEL MATERIALS

- A. Where wood paneling is indicated on the drawings at cabinets facing public side, Use interior wood composite panels by Parklex as specified in Section 06423. Used with concealed fasteners.
- B. Particleboard: ANSI A208.1; medium density industrial type Grade M-2, as specified in AWS Standards Illustrated, composed of wood chips bonded with interior grade adhesive under heat and pressure; sanded faces; thickness as required; use for components indicated on drawings.
- C. Medium Density Fiberboard (MDF): ANSI A208.2; Grade 130 minimum, type as specified in AWS; composed of wood fibers pressure bonded with moisture resistant adhesive to suit application; sanded faces; thickness as required.
 - 1. Use for painted components and concealed components.
 - 2. Use as backing for plastic laminate unless otherwise indicated.
- D. Hardboard: AHA A135.4; Pressed wood fiber with resin binder, Class 1 - Tempered, 1/4 inch (6 mm) thick, smooth two sides (S2S); use for drawer bottoms, dust panels, and other components indicated on drawings.
- E. Solid Hardwood: Drawer Boxes.
- F. Hardwood Veneer plywood with transparent finish: Drawer Boxes
- G. Hardwood Edgebanding: Use solid hardwood edgebanding matching species, color, grain, and grade for exposed portions of cabinetry.

2.03 LAMINATE MATERIALS

- A. Manufacturers:
 - 1. Wilsonart International, Inc; www.wilsonart.com.
 - 2. Formica Corporation; www.formica.com.
 - 3. Nevamar Company; www.nevamar.com.
 - 4. Substitutions: See Section 01 60 00 - Product Requirements.
- B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications and as follows:
 - 1. Horizontal Surfaces: HGS, 0.048 inch (1.22 mm) nominal thickness, colors as scheduled, finish as scheduled.
 - 2. Post-Formed Horizontal Surfaces: HGP, 0.039 inch (1.0 mm) nominal thickness, colors as scheduled, finish as scheduled.
 - 3. Post-Formed Vertical Surfaces: VGP, 0.028 inch (0.71 mm) nominal thickness, colors as scheduled, finish as scheduled.
 - 4. Flame Retardant Surfaces: HGF, 0.048 inch (1.22 mm) nominal thickness, colors as scheduled, finish as scheduled.
 - 5. Cabinet Liner: CLS, 0.020 inch (0.51 mm) nominal thickness, colors as scheduled, finish as scheduled.
 - 6. Laminate Backer: BKL, 0.020 inch (0.51 mm) nominal thickness, undecorated; for application to concealed backside of panels faced with high pressure decorative laminate.
 - 7. Thru core plastic laminate material where shown on the drawings.
 - 8. Metal Laminate where shown on the drawings
 - 9. Chemical resistant Plastic Laminates, where shown on the drawings

2.05 DECORATIVE SURFACES MATERIAL

- A. Engineered Wood Paneling (Refer to Section 06 42 30).
- B. Location: Public face of Counters, also see drawings.

2.05 ACCESSORIES

- A. Adhesive: Type recommended by fabricator to suit application. Do not use "contact" adhesive.
- B. Plastic Edge Banding: Extruded PVC, Flat shaped; smooth finish, 1mm or 3 mm where heavy duty edges are called out on the drawings; of width to match component thickness, color as selected from manufacturer's standards.
 - 1. Use at all exposed edges and where indicated on the drawings.
- D. Aluminum Edge Banding: Extruded convex shape; smooth surface finish; self-locking, serrated tongue; of width to match component thickness; natural mill finish.
 - 1. Use at all exposed plywood edges where called out on the drawings.
- E. Glass: Type A as specified in Section 08800.
- F. Fasteners: Size and type to suit application.
- G. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel, or chrome-plated finish in exposed locations.
- H. Concealed Joint Fasteners: Threaded steel.
- I. Grommets: Standard plastic cut-outs, in color to match adjacent surface.

2.06 HARDWARE

- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated self rests, polished chrome finish, for nominal 1 inch (25 mm) spacing adjustments.
 - 1. Product: No. 239 manufactured by K-V.
- C. Adjustable Shelf Supports: Standard back-mounted system using surface mounted metal shelf standards and coordinated cantilevered shelf brackets, satin chrome finish, for nominal 1 inch (25 mm) spacing adjustments.
 - 1. Product: No. 346 manufactured by K-V.
- D. Drawer and Door Pulls: with matt finish.
 - 1. Product: Manufactured by Hafele.
- E. Cabinet Locks: Keyed cylinder, two keys per lock, master keyed, steel with chrome finish.
 - 1. Product: 1E Series – Slabbed Mortise Cylinder (1E7E4RP3626) manufactured by Best.
- F. Catches: Magnetic.
 - 1. Product: 246.29.301 manufactured by Hafele.
- G. Drawer and Shelf Slides:
 - 1. Type: Standard extension.
 - 2. Static Load Capacity: Heavy duty.
 - 3. Mounting: Side mounted.
 - 4. Stops: Integral type.
 - 5. Features: Provide self-closing/stay closed type.
- H. Manufacturers:
 - a. Blum, Inc.; Product 430E, 100 lb. load capacity: www.blum.com.

- b. Equal product by Grass America Inc; www.grassusa.com.
 - c. Equal product by Knape & Vogt Manufacturing Company; www.kv.com.
 - d. Substitutions: See Section 01 60 00 - Product Requirements.
- H. Hinges: European style concealed self-closing type, steel with polished finish.
- 1. Manufacturers:
 - a. Blum, Inc; Product No. 75M5580-125, Degree "Clip" Hinge: www.blum.com.
 - b. Equal product by Grass America Inc; Product www.grassusa.com.

2.07 SHOP TREATMENT OF WOOD MATERIALS

- A. Provide UL approved identification on fire retardant treated material.
- B. Deliver fire retardant treated materials cut to required sizes. Minimize field cutting.

2.08 SITE FINISHING MATERIALS

- A. Stain, Shellac, Varnish and Finishing Materials: As specified in Section 09 90 00.
- B. Finishing: Site finished as specified in Section 09 90 00.

2.09 FABRICATION

- A. Cabinet Style: Flush overlay.
- B. Cabinet Doors and Drawer Fronts: Flush style.
- C. Exposed surfaces to be HPDL of the appropriate grade per 2.03 B.
- D. Exposed Interior surfaces to be Plastic laminate finish.
- E. Semi-exposed surfaces to be Cabinet Liner grade CLS.
- C. Drawer Construction Technique: **Dovetail joints.**
- D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- E. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- F. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.
- G. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet (600 mm) from sink cut-outs.
 - 1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
 - 2. Cap exposed plastic laminate finish edges with material of same finish and pattern.
- H. Matching Wood Grain: Comply with requirements of quality standard for specified Grade and as follows:
 - 1. Provide center matched panels at each elevation.
 - 2. Provide sequence matching across each elevation.
 - 3. Carry figure of cabinet fronts to toe kicks.
- I. Mechanically fasten back splash to countertops with steel brackets at 16 inches (400 mm) on center.
- J. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.
- K. Shop glaze glass materials using the Interior Dry method specified in Section 08 80 00.

2.10 FACTORY FINISHING

- A. Sand work smooth and set exposed nails and screws.
- B. For opaque finishes, apply wood filler in exposed nail and screw indentations and sand smooth.
- C. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.
- E. Finish work in accordance with AWS, Section 5, System #2 - Nitrocellulose Lacquer.
- F. Seal, stain and varnish exposed to view surfaces. Brush apply only.
- G. Seal stain and varnish internal exposed to view and semi-concealed surfaces. Brush apply only.
- H. Seal internal surfaces of cabinets with one coat of shellac. Brush apply only.
- I. Prime paint surfaces in contact with cementitious materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

- A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.
- B. Use fixture attachments in concealed locations for wall mounted components.
- C. Use concealed joint fasteners to align and secure adjoining cabinet units.
- D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim for this purpose.
- E. Secure cabinets to floor using appropriate angles and anchorages.
- F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.
- G. Site glaze glass materials using the Interior Dry method specified in Section 08 80 00.

3.03 ADJUSTING

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 06 42 30

ENGINEERED WOOD PANELING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Engineered wood paneling.
- B. Solid wood panel trim.
- C. Site finishing.

1.02 RELATED SECTIONS

- A. Section 09900 - Paints and Coatings.

1.03 REFERENCES

- A. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.

B. TECHNICAL DATA

Additional ASTM Test Results

Characteristics Standards and test methods Values

Density (10mm) ASTM D 2395 Method A 1.51 g/cc

Moisture Content ASTM D 4442 Method A 2.1%

Water Absorption (24 h/23°C) ASTM D 1037 Method B 0.34% by mass
0.56% by volume

Thickness Swelling 0.59%

Flexural Properties ASTM D 1037

Modulus of Elasticity

veneer parallel to long dimension dry-soaked

19.0 GPa (2,756,000 psi)

18.0 GPa (2,611,000 psi)

veneer perpendicular to long dim. dry-soaked

9.0 GPa (1,305,000 psi)

8.7 GPa (1,261,000 psi)

Bending Strength (MOR)

parallel to long direction dry-soaked

193 MPa (28,000 psi)

200 MPa (29,000 psi)

perpendicular to long direction dry-soaked

93 MPa (13,500 psi)

108 MPa (15,700 psi)

Bond Durability APA PS-1 6.1.5

maximum load reference

vacuum/pressure soaked

boiled (2 cycles)

2.58 kN (580 lb-f)

3.47 kN (780 lb-f)

2.68 kN (600 lb-f)

Surface Burning Characteristics ASTM E-84 Class B (II) / Class A (I)

Click on the following link for **Interpretation of ASTM Test Data on Parklex 1000.**

ASTM Testing Performed at AEWC Advanced Engineered Wood Composites Center,
University of Maine; ASTM E-84

Testing (Surface Burning) performed at Hardwood Plywood & Veneer Association Laboratory,
Reston Virginia.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate materials, elevations of sheet paneling, fastening methods, joining methods, and interruptions to other work, to a minimum scale of 1-1/2 inch to 1 ft (1:8). Include plan of panel number sequencing.
- C. Product Data: Provide data on fire retardant treatment materials and application instructions.
- D. Samples: Submit two samples of finished 12 x 12 inch in size, illustrating wood grain and specified finish.

1.05 QUALITY ASSURANCE

- A. Fabricator: Company specializing in fabricating the products specified in this section with minimum three years of documented experience.

1.06 REGULATORY REQUIREMENTS

- A. Conform to applicable code for fire retardant requirements.

1.07 MOCK-UP

Not required.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Protect work from moisture damage.
- B. Do not deliver wood materials to project site until building is fully enclosed and interior temperature and humidity are in accordance with recommendations of AWI Quality Standards Illustrated.
- C. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact. Materials must be transported flat and kept dry and protected from the elements and handled with care.
- D. Storage and Protection: Materials must be stored flat and kept dry in a warehouse/storage facility, protected from exposure to harmful weather conditions, at temperatures and humidity conditions recommended by the manufacturer.

1.09 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. Verify that field measurements are as indicated.
- C. Coordinate the work with electrical rough-in, and installation of associated and adjacent components.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide PARKLEX 700 Interior Wood Composite Panels
Distributed by: Finland Color Plywood Corporation
Corporate Headquarters
1310 Main St.
Venice, CA 90291
Bus: (310) 396-9991
Bus Fax: (310) 396-4482
E-mail: info@fcpcusa.com
Warehouses in Los Angeles, CA & Port Newark, NJ
<http://www.fcpcusa.com/>
<http://www.parklex.com/>
- B. Substitutions: Approved equal to match composition, texture, color, thickness and anchorage method.

2.02 WOOD-BASED MATERIALS – GENERAL

- A. INTERIOR GRADE WOOD COMPOSITE PANEL: Natural laminated wood panel standard **one sided**, (front face only), Ayous wood coated with phenolic resins; inner core paper fibers treated with thermo-hardenend resins (bakelized core), balancing layer on back face (not designed for exposure to the elements).
1. WOOD VENEER:
ABP Lt. – Ayous Light Brown
Smooth surface (standard).
 2. PANEL DIMENSIONS:
1220mm (48") x 2440mm (96") x thickness.
Thickness: 8mm
 3. DIMENSIONAL TOLERANCES:
Length ± 2 mm, Width ± 2 mm, Thickness ± 0.55 mm (10mm thick panel).
 4. WEIGHT:
2.23 lb/ft² (8mm); 1220mm x 2440mm x 8mm panel weighs approximately 72 pounds.
 5. SURFACE BURNING CHARACTERISTICS:
Report on surface burning characteristics determined by ASTM E-84 (twenty-five foot tunnel furnace test method), meets Class B (II) - 75 or under flame spread, with a flame spread index of 40 and smoke developed index of 35.
 6. THERMAL PROPERTIES
Parameter Description Metric English
Thermal Conductivity k 0.18 W/m-K 0.104 (Btu/h)/ft-F
Thermal Resistance R (10mm) 0.0556 K·m²/W 0.315 h·ft²·F/Btu
Equivalent to R-9.61 (thermal resistance of 1 ft of Parklex insulation, given in h·ft²·F/Btu).

2.03 PANEL PREPARATION

- A. Cutting the Panels: Panels may be cut with a circular saw; a precision carbide or tungsten-tipped blade is recommended.

- B. Protective Film: The panels leave the factory with a protective layer of film on the front face to protect the panel surface from scratching during transport and handling. It is necessary to remove this protective film prior to installation.
- C. Cleaning Prior to Installation: Once the protective film has been removed, superficial environmental dust will naturally wash away in the rain. However, care must be taken to prevent the panels from being soiled by damp cement, mortar or drops of paint. If these stains are not immediately cleaned, irreversible discoloration may occur on the panel surface. The panels should be cleaned as required at the location of the stain only, without attempting to scrub the entire surface. After the stain is removed, proceed to wash and dry the entire surface of the panel prior to installation.

2.04 ADHESIVES AND FASTENERS

- A. Adhesives: Type suitable for intended purpose, complying with applicable air quality regulations.
- B. Fastening with Adhesives: It is recommended to attach panels using mechanical fasteners for ease of installation. The strength of the adhesive specified will make the attachment of the panels virtually permanent (removal may cause permanent damage to the panel).
- C. Attach Panel at Center: The panel must be attached at its center to prevent curvature. Adhesives accommodate expansion and contraction without penetrating the surface of the panel.
- D. Preparation of Panel: Sand down un-faced side (backside) of the panel in the area to be glued, and remove dust.
- E. Use of Adhesives: Specific preparation and installation techniques must be followed for successful attachment using adhesive.
- F. Fastening with Adhesive: Recommended adhesive product: **Sika Flex – 552 High-Strength Structural Assembly Adhesive**.

2.05 FABRICATION

- A. Fabricate composite panels and accessory items in accordance with manufacturer's recommendations and approved submittals.
- B. Fabricate panels to sizes indicated.

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine alignment of backup structure prior to installing sub-frame. Do not proceed until all defects are corrected.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

- A. Comply with Manufacturer's "General Guidelines for Panel Installation". Fastening with adhesives.
- B. Install solid wall panels plumb and level and accurately spaced in accordance with manufacturer's recommendations and approved submittals.

- C. Fasten solid wall panels to supporting substrate with fasteners adhesive approved for use with adjoining construction.
- D. Accessory Items: Install corner profiles, gaskets and trim with fasteners and adhesive appropriate for use with adjoining construction as indicated on drawings and as recommended by manufacturer.

3.03 DAMAGED MATERIAL

- A. Repair or replace all damaged material to the satisfaction of the Architect.

3.04 ERECTION TOLERANCES

- A. Maximum Variation from True Position: 1/16 inch (1.5 mm).
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch (0.7 mm).

3.05 CLEANING

- A. Do not use abrasive cleaners or cleaning tools. Dry wipe down panel sections as work progresses.
- B. Provide final cleaning of the wall system.
- C. Parklex 700 panels are prefinished, however periodic maintenance may be necessary to clean the panel surface of superficial dirt resulting from typical exposure to dust and pollution. Cleaning should be done using a damp, soft cloth and non-abrasive mild household detergent solution. Abrasive and highly acidic or alkaline products should not be used as they could scratch or damage the surface of the panel.

3.06 PROTECTION

- A. Protect installed product and finish surfaces from damage during construction.

END OF SECTION

SECTION 07 21 00
THERMAL INSULATION

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide building insulation where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division I of these Specifications.

1.02 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- B. Upon completion of this portion of the Work, complete and post a certificate of insulation compliance in accordance with pertinent requirements of governmental agencies having jurisdiction.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 66 00.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Provide the following building insulation where shown on the Drawings or otherwise needed to achieve the degree of insulation required under pertinent regulations of governmental agencies having jurisdiction.
 - 1. Type A: 3" thermal fiber insulation at wall type G.
 - 2. Type B: Unfaced glass fiber sound isolating batts, thickness to suit framing member 3 1/2" and 6".

2.02 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Remove, or protect against, projections in construction framing which may damage or prevent proper insulation.

3.02 INSTALLATION

- A. Install the work of this Section in strict accordance with the original design, requirements of governmental agencies having jurisdiction, and the manufacturer's recommended installation procedures as approved by the Architect, anchoring all components firmly into position.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.01 SCOPE

- A. Furnish all labor, materials, services, equipment and appliances required to perform all sealants and caulking, backing materials and supplementary work to complete the Contract including, but are not limited to, these major items:
 - 1. At all doors, windows, etc.
 - 2. At perimeter of all change in finish materials, i.e. between EIFS and metal flashings and/or concrete.
 - 3. Roof penetrations not specified under Mechanical or Electrical Sections.
 - 4. All concrete construction and separation joints in concrete building slab and site concrete.
 - 5. Sealant between storm drainage downspouts and wall outlets.
 - 6. Fire retardant sealants for type of rated penetration, as required.
 - 7. All other Sealants and Caulking as indicated on Drawings.

1.02 RELATED WORK IN OTHER SECTIONS

- A. Section 07 60 00: Flashing and Sheet Metal Work
- B. Section 08 11 00: Metal Doors and Frames
- C. Section 08 41 13: Aluminum Window Wall and Storefront
- D. Section 08 80 00: Glazing

1.03 REFERENCE STANDARDS

- A. ASTM C 920 Specification for Elastomeric Joint Sealants. A sealant qualifying under this specification shall be classified as to type, grade, class, and use as follows:
 - 1. Type S - Single component sealant
 - 2. Type M - Multi component sealant
 - 3. Grade P - Pourable or self-leveling
 - 4. Grade NS - Nonsag or gunable
 - 5. Class 25 - Adhesion and cohesion under movement shall withstand an increase or decrease of at least 25% of the joint width.
 - 6. Use T - Pedestrian and vehicular traffic areas. Sealant shall have a hardness reading, after being properly cured, of not less than 25 or more than 50 when tested in accordance with Test Method C 661.
 - 7. Use NT - Nontraffic applications
 - 8. Use M - Mortar/Masonry
 - 9. Use G - Glass
 - 10. Use A - Aluminum
 - 11. Use O - Other than the Standard Substrates meeting this specification.

ASTM C962 Standard Guide Use of Elastomeric Joint Sealants

ASTM C1193 Standard Guide for Use of Joint Sealants.

ASTM C1184 Standard Guide for Use of Structural Sealants.

ASTM D1565 Standard Specification for Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open-Cell form)

ASTM D1667 Standard Specification for Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam)

- B. Federal Specification:
FS TT-S-00227E, "Sealing Compound, Rubber Base, Two-Component."
FS TT-S-00230, "Sealing Compounds, Synthetic Rubber Base, Single Component, Chemically Curing.
- C. Sealant, Waterproofing and Restoration Institute (SWRI) - Sealant and Caulking Guide Specifications.

1.04 SUBMITTALS

- A. Provisions: Comply with Section 01 33 00.
- B. Product Data: Submit manufacturer's technical data, mixing instructions, application recommendations and installation instructions, including cleaning and priming instructions and sealant limitations for each type of material required. Include manufacturer's published data, or letter of certification, or certified test laboratory report indicating that each material selected complies or is suitable for the temperatures, movements and weather conditions that will be encountered during the sealants service life.
- C. Samples: Submit manufacturer's standard bead samples consisting of strips of actual products to be exposed to view showing full range of cured colors available.
- D. Contractor's and manufacturers' guarantees and warranties respectively.
- E. Sealant Schedule: Indicate each sealant type and backer rod type proposed for each appropriate location and for each appropriate substrate.
- F. Certificates: Furnish manufacturers certification that sealant systems comply with local regulations controlling use of volatile organic compounds. Manufacturer shall certify that sealant systems are compatible with adjacent substrate and related finish materials.
- G. Product Testing: Include manufacturer or independent laboratory test results demonstrating hardness, stain resistance, adhesion and cohesion under cyclic movement per ASTM C719, low temperature flexibility, modulus of elasticity at 100 percent strain, effects of heat aging and effects of accelerated weathering.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an installer who has successfully completed within the last three (3) years at least three (3) joint sealer applications similar to type and size to that of this project.
- B. Single Source for Materials: Obtain joint sealer materials from a single manufacturer for each different product required, for each different application.
- C. Manufacturer's representative to provide inspection of conditions prior to start of the work and initial supervision at the start of each application, to insure that any physical conditions which would result in defective work are properly corrected before materials are applied, and that proper procedure are being followed. Provide such inspection and supervision by qualified personnel. Report all unsatisfactory conditions existing at the time of inspection in writing to the Architect for correction before proceeding with the work.
- D. Notify the manufacturer's representative at least 72 hours prior to the time inspection is required.
- E. Failure or refusal of the manufacturer or manufacturer's representative to provide the inspection and supervision as required hereunder constitutes grounds for non-acceptability of materials manufactured, even though such materials have been specified or approved.

1.06 REQUIREMENTS

- A. Sealant system shall include joint preparation, joint back-up or bondbreaker, priming, sealant and caulking required to seal exterior and interior joints throughout the project, including those not specifically indicated in the Contract Documents, but necessary to completely eliminate active, direct and indirect moisture and weather elements of water, air or dust, from entering through, around, over and under joints of building components, to provide a watertight, moisture-tight and weathertight building envelope and seal joints between adjacent materials.
- B. Sealants are not to harden or soften more than 10 Shore A durometer points as measured 21 days after original installation.
- C. Verify compatibility of sealants with various other sealants or joint systems at any point of interface or possible contact.

1.07 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to project site in original unopened containers or bundles with labels, indicating manufacturer, product name and designation, color, expiration period for use, pot life, curing time and mixing instructions for multicomponent materials.
- B. Store at 80°F or less in a cool, dry area. Handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants or other causes.
- C. Use sealant within the time recommended by the manufacturer.

1.08 PROJECT/SITE CONDITIONS

- A. Weather Conditions: Do not proceed with installation of sealants under adverse weather conditions, or when ambient and substrate temperatures are below or above manufacturer's recommended limitations for installation or below 40°F. Proceed with the work only when forecasted weather conditions are favorable for proper cure and development of high early bond strength.
- B. Surface Conditions: Provide proper primers suited to conditions. Primers may be omitted upon certification by sealant manufacturer that they are not required. Where any doubt exists, prepare sample joints on actual materials as furnished for the job to determine the matter.

1.09 WARRANTY

Contractor shall submit manufacturer's written five (5) year warranty agreeing to replace joint sealers which fail or deteriorate including color resistance compromising system life.

1.10 GUARANTEE

Provide joint installer/manufacturer guarantee of work against inherent or developed defects in material or installation, agreeing to repair or replace joint sealers which fail, leak, crumble, harden, shrink, bleed, sag, stain or loose adhesion. Guarantee installed work to remain watertight for a period of two (2) years.

PART 2 - PRODUCTS

2.01 MATERIALS

Use sealants of the following types and manufacturers. Use manufacturer's standard or custom colored materials to match color of adjacent surfaces. Where adjacent materials on each side of the joint are different colors, the Architect will select sealant colors. If the desired color is not available from one manufacturer, select the proper color from another manufacturer.

2.02 MANUFACTURERS

- A. Provide one of the following for each different product required:
1. Momentive Performance Material
 2. Mameco/International, Inc.
 3. Pacific Polymers
 4. Pecora
 5. Sika
 6. Equivalent products meeting performance criteria specified will be acceptable.

2.03 MATERIAL TYPES

A. POLYURETHANE SEALANTS

1. One part, non sag, non staining, gun grade sealants ASTM C920, Type S, Grade NS, Class 25, uses NT, M, G, A & O, TT-S-00230C, Type II, Class A.
 - a. Location/Use: Exterior/Interior, Horizontal/Vertical joints in concrete, masonry, steel, aluminum and glass
 - b. Mameco International 'Vulkem 116 or 921'
Pacific Polymers 'Elasto-thane 230-Type II', Elasto-seal 230
Pecora 'Dynatrol 1'
Sika - Sikaflex - 1a or 15LM
Sonneborn 'Sonolastic NP-1/Ultra/Sonolastic 150
2. Two part, non sag, non staining, gun grade sealant, Type M, Grade NS, Class 25, uses NT, M, A & O, TT-S-00227E, Type II, Class A.
 - a. Location/Use: Exterior/Interior, Horizontal/Vertical joints in concrete, masonry, steel, aluminum.
 - b. Mameco International 'Vulkem 227 or 922'
Pacific Polymers 'Elasto-seal 227 or Elasto-thane 920 Type II'
Pecora 'Dynatrol II'
Sika - Sikaflex - 2c NS/SL
Sonneborn 'Sonolastic NP-2'
3. One part, self leveling, pourable sealant, ASTM C920, Type S, Grade P, Class 25, Uses T, M, A & O, TT-S-00230C, Type 1
 - a. Location/Use: Exterior/Interior, Horizontal expansion and control joints; light traffic.
 - b. Mameco International 'Vulkem 45'
Pecora 'Urexpan NR-201'
Sika - Sikaflex - 1 CSL
Sonneborn 'Sonolastic SL1'

4. Two part, self leveling, pourable sealant, ASTM C920, Type M, Grade P, Class 25, uses T, M, A & O, TT-S-00227E, Type I.
 - a. Location/Use: Exterior/Interior, Horizontal expansion and control joints; medium to heavy traffic.
 - b. Mameco International 'Vulkem 245-255'
Pacific Polymers 'Elasto-thane 227 High Shore'
Pecora 'Urexpan NR-200' or 'Dynatred'
Permapol 'RC-2SL'
Sika - Sikaflex 2CSL
Sonneborn 'Sonolastic SL2'
- B. Silicone Sealants
1. Silicone based, single components, non sag, conforming to Federal Spec. TT-5-0030C (2) & TT-S-001543A.
 - a. Joints in glass and metal surfaces of walls and other vertical and sloping surfaces of window surrounds.
General Electric - GE1200
Dow Corning - 790
Pecora 864 or 890
Sonneborn - Sonolastic 150/Omniseal
 - b. Joints in concrete and masonry in vertical and sloping surfaces.
General Electric - Silpruf
Dow Corning - 795
Pecora 895
Sonneborn - Sonolastic 150/Omniseal
- C. Joint Backing: Closed cell materials, neoprene, polypropylene, or polyethylene, ASTM D1565 or D1667 conforming to manufacturers written recommendations. Material is to be non-staining, free of asphalt, oils or creosote. Sized and shaped to control depth of sealant and to provide 25 - 50 percent compression upon insertion. Open cell polyurethane foam backer rod is not allowed.
- D. Primers: As recommended in writing by sealant manufacturer. Verify that recommended primer has been tested not to stain the substrate. Refer to 3.01D.
- E. Bond Breaker: Pressure sensitive adhesive polyethylene tape, or other type recommended by sealant manufacturer.
- F. Fire Retardant Sealant: Products as tested and listed by approved system design as indicated in the U.L.Inc Volume 2, directory. System is to be recognized by UL and ASTM E119 procedures, (and ICBO by report NER #243), for fire rating of penetration to be sealed. Products as distributed by Kirwan Corporation (714) 939-6887.
1. Pecora Ultra-Block fire safing joint system used in conjunction with acrylic latex sealants (AC-20 FTR), polyurethanes or silicones, as approved by the manufacturer, based on hardness or flexibility of the joint required. Alternate mineral wool safings must comply to approved system designs.
 2. 3M - "Fire Barrier Caulk CP25 and Putty 303", or Dow Corning - "Firestop Sealant".
- G. Fire Retardant Foam: UL tested and listed, conforming to ASTM E119 for rating of penetration to be sealed. 3M 2001 RTV "Firestop Foam" or equal.
- H. Structural Glazing Adhesives/Sealants
One-component, high-modulus, high-strength, neutral-cure, 100 percent silicone polymer sealant.
1. Acceptable Product: Momentive, GE SSG4000 UltraGlaze Silicone Structural Glazing Adhesive/Sealant as manufactured by Momentive Performance Materials

- a) Compliance:
 - (1) ASTM C 1184, Type S, Use G and O.
 - (2) ASTM C 920, Type S, Grade NS, Class 25, Use NT, A, G, O.
 - (3) Federal Specification TT-S-001 543A.
 - (4) Federal Specification TT-S-00230C.
- b) Dynamic Movement Capability, ASTM C 719: +/- 25 percent.
- c) Color: Black.
- d) Color: Grey.

2.04 INCIDENTAL REQUIREMENTS AND MATERIALS

- A. Staining Characteristics: All joint fillers, primers, or other materials used in conjunction with sealants shall be of such composition as to not cause staining of the sealant or the materials to which they are applied.
- B. Compressible Joint Filler: As recommended by the sealant manufacturer for use in conjunction with the sealant. Size closed cell joint backing for joint width plus 25 percent.
- C. Primers: As recommended by the sealant manufacturer for use in conjunction with the sealant for application onto the various types of materials to which the sealer is applied.
- D. Cleaners, where required in lieu of primers, as recommended by the sealant manufacturer, which will not stain or damage building materials.

PART 3- EXECUTION

3.01 EXAMINATION

Examine substrate surfaces to receive sealant system and associated work and conditions under which work will be installed. Do not proceed with sealants until unsatisfactory conditions have been corrected in a manner acceptable to installer. Starting work within a particular area will be construed as applicators acceptance of surface conditions.

3.02 PREPARATION

- A. Comply with manufacturers latest written requirements, recommendations and specifications for cleaning, surface preparation and priming. Remove loose foreign materials which could impair adhesion or proper performance of sealants.
- B. Prime joint substrates where recommended by joint sealant manufacturer or where required by preconstruction joint sealant substrate tests. Confine primers to areas of joint sealant bond. Do not allow spillage or migration onto adjoining surfaces.
- C. Apply epoxy primers to all concrete surfaces to which joints are to be sealed prior to sealant application to increase adhesion, decreasing failure due to temperature exposure, thermal and structural movement.
- D. Prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears.

3.03 APPLICATION

- A. Install back-up and sealants in accordance with ASTM C1193 and manufacturers written recommendations as recommended for each use type and substrate, or as directed by manufacturer's technical field representative to ensure proper preparation and application.
- B. Accurately install/position joint back-up to provide support of sealants during application and at position required to control/produce the uniform cross sectional shape and depth of installed sealants relative to designated joint thickness/widths to achieve required width to depth ratios, that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of back-up rod.
 - 2. Do not stretch, twist, puncture or tear back-up rod.
 - 3. Install bond breaker tape where backer rods cannot be used do to shallow joint depth, to avoid three side adhesions.
- C. Install/apply sealants by proven techniques using caulking guns with proper nozzles using sufficient pressure that results in sealants directly contacting and fully wetting joint substrates. Completely fill recesses provided for each joint configuration, providing uniform, cross sectional shapes and depths relative to joint widths, and to assure/obtain uniform adhesion free of air pockets, voids, embedded matter, ridges and sags. During application keep tip of nozzle at bottom of joint, forcing sealant to fill from bottom to top. Finish joints smooth, uniform and free of ridges, wrinkles, sags, air pockets, and embedded impurities.
- D. Tool sealants to form smooth, uniform beads of concave configuration finished below the surface. Use tooling agents that are approved by sealant manufacturer. Remove excess sealants from surface adjacent to joint.
- E. Fire Retardant Foam and Sealant: Conform to manufacturer's printed directions for preparation and application of materials per applicable details for fire-rated penetrations. Seal all gaps, cracks, and holes around the perimeter of materials penetrating the fire rated floors and walls.
- F. Fire Retardant Putty: Apply to thicknesses required for rating and type of construction, in accordance with manufacturer's directions.

3.04 PROTECTION

- A. Protect joint sealants from contact with contaminating substances or from damage resulting from construction operations or other causes.
- B. Cut out and remove damaged or deteriorated joint sealants and repair so that areas are indistinguishable from original work.

END OF SECTION

SECTION 08 11 00

METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated steel doors and frames.
- B. Steel frames for wood doors.
- C. Fire-rated steel doors and frames.
- D. Thermally insulated steel doors.
- E. Sound-rated steel doors and frames.
- F. Steel glazing frames.
- G. Accessories, including glazing, louvers, and matching panels.

1.02 RELATED SECTIONS

- A. Section 08 71 00 - Door Hardware
- B. Section 08 80 00 - Glazing
- C. Section 09 90 00 - Paints and Coatings: Field painting

1.03 REFERENCES

- A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council; 2003.
- B. ANSI A250.3 - Test Procedure and Acceptance Criteria for Factory-Applied Finish Painted Steel Surfaces for Steel Doors and Frames; 1999.
- C. ANSI A250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames; 2003.
- D. ANSI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 1998 (R2004).
- E. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2005a.
- F. ASTM C 236 - Standard Test Method for Steady-State Thermal Performance of Building Assemblies by Means of a Guarded Hot Box; 1989 (Reapproved 1993).
- G. ASTM C 1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus; 2005.
- H. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2004.
- I. ASTM E 413 - Classification for Rating Sound Insulation; 2004.
- J. ASTM E 1408 - Standard Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems; 1991 (Reapproved 2000).
- K. DHI A115 Series - Specifications for Steel Doors and Frame Preparation for Hardware; Door and Hardware Institute; 2000 (ANSI/DHI A115 Series).
- L. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.

- M. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 1999.
- N. NAAMM HMMA 860 - Guide Specifications for Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 1992.
- O. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2000.
- P. NAAMM HMMA 862 - Guide Specifications for Commercial Security Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2003.
- Q. NAAMM HMMA 863 - Guide Specifications for Detention Security Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2004.
- R. NAAMM HMMA 865 - Guide Specifications for Swinging Sound Control Hollow Metal Doors and Frames; The National Association of Architectural Metal Manufacturers; 2003.
- S. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association; 2007.
- T. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association; 2003.
- U. UBC Std 7-2, Part II - Test Standard for Smoke- and Draft-control Assemblies; International Conference of Building Officials; 1997.
- V. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.
- W. UL 10B - Standard for Fire Tests of Door Assemblies; 1997.
- X. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies; 1998.
- Y. UL 1784 - Standard for Air Leakage Tests of Door Assemblies; 2001.

1.04 SUBMITTALS

- A. See Section 01300 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.
- D. Samples: Submit two samples of metal, 2 x 2 inches (50 x 50 mm) in size showing factory finishes, colors, and surface texture.
- E. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.
- F. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Maintain at the project site a copy of all reference standards dealing with installation.

1.06 DELIVERY, STORAGE, AND PROTECTION

- A. Store in accordance with NAAMM HMMA 840.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Steel Doors and Frames:
 - 1. Steelcraft; www.steelcraft.com.
 - 2. Assa Abloy Ceco,; www.assaabloydss.com.
 - 3. Windsor Republic Doors; www.republicdoor.com.
 - 4. Substitutions: See Section 01600 - Product Requirements.

2.02 DOORS AND FRAMES

- A. Requirements for All Doors and Frames:
 - 1. Accessibility: Comply with ANSI/ICC A117.1.
 - 2. Door Top Closures: Flush with top of faces and edges.
 - 3. Door Edge Profile: Beveled on both edges.
 - 4. Door Texture: Smooth faces.
 - 5. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
 - 6. Hardware Preparation: In accordance with DHI A115 Series, with reinforcement welded in place, in addition to other requirements specified in door grade standard.
 - 7. Galvanizing for Units in Wet Areas: All components hot-dipped zinc-iron alloy-coated (galvannealed), manufacturer's standard coating thickness.
 - 8. Finish: Factory primed, for field finishing.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with all the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 STEEL DOORS

- A. Exterior Doors Type L-Series:
 - 1. Grade: ANSI A250.8 Level 3, physical performance Level A, Model 2, seamless.
 - 2. Grade: NAAMM HMMA 861, physical performance Level A.
 - 3. Core: Honeycomb core system.
 - 4. Top Closures for Outswinging Doors:
 - a. Flush with top of faces and edges.
 - b. Not less than 16 ga. Flush or inverted.
 - c. Welded to the face sheet.
 - 5. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
 - 6. Texture: Smooth faces.
 - 7. Astragals: Flat security type.
 - 8. Weatherstripping: Separate, see Section 08 71 00.
 - 9. Finish: Kynar.

2.04 STEEL FRAMES

- A. General:
 - 1. Comply with the requirements of grade specified for corresponding door, except:
 - a. ANSI A250.8 Level 1 Doors: 16 gage frames.
 - b. ANSI A250.8 Level 4 Doors: 12 gage frames.
 - 2. Finish: Same as for door.
 - 3. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
 - 4. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches (100

- mm) high to fill opening without cutting masonry units.
5. Frames wider than 48 Inches (1200 mm): Reinforce with steel channel fitted tightly into frame head, flush with top.
 6. Frames Installed Back-to-Back: Reinforce with steel channels anchored to floor and overhead structure.
 7. Frame Anchors
 - a. Existing Masonry or Concrete
 1. 3/8 inch countersunk flat head bolt and expansion shields.
 2. Locate 6 inches from top and bottom and maximum 24 inches on center.
 3. Weld pipe spacers or other type of spacers, per manufacturers standard design, in back of frame soffit.
 - b. Attachment to Drywall Construction:
 1. Steel or Wood Stud type to accommodate frame jamb depth and face dimension on welded type frame.
 - c. Provide one anchor for every 30 inches of jamb or fraction thereof.
 - d. Floor Anchor: angle clip type.
 1. 16 Gauge.
 2. Two fasteners per jamb.
 3. Weld to bottom of each jamb.
 8. Preparation for Hardware
 - a. Reinforce per SDI 107.
 - b. Lock and Closer reinforcement: box type.
 - c. Door Hinge reinforcement: 7 gauge or equivalent, manufacturer's standard.
 - d. Punch strike jambs to receive three silencers; double leaf frames to receive manufacturer's standard preparation.
 - e. Hardware locations per "Recommended Locations for Builders' Hardware for Standard Steel Doors and Frames".
 - f. Provide welded in place guards for all hardware cutouts in frame.
 - g. Electrical preps: provide welded-in-place boxes, special designed anchors, raceways and access panels as required.
- B. Interior Door Frames: F16 Series, SUA (set-up and welded) 3-sided flush frames; meet ANSI A250.8 – 1998.
1. Single rabbet frame.
 2. 4" head where shown on the Drawings.
 3. Fire-rated when shown on the Drawings.
 4. Finish: Factory primed.
- C. Exterior Door Frames: Face welded, F16 Series, sanded and grinded smooth, seamless with joints filled.
1. Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A 653/A 653M, with manufacturer's standard coating thickness.
 2. Finish: Kynar
 3. Weatherstripping: Separate, see Section 08 71 00.
- D. Interior Door Frames: See Section 08 12 00.
- E. Mullions for Pairs of Doors: Fixed, of profile similar to jambs.
- F. Frames for Interior Glazing or Borrowed Lights: Construction and face dimensions to match door frames, and as indicated on drawings.
- G. Transom Bars: Fixed, of profile same as jamb and head.

2.05 ACCESSORY MATERIALS

- A. Glazing: As specified in Section 08 80 00, factory installed.

- B. Removable Stops: Formed sheet steel, shape as indicated on drawings, mitered or butted corners; prepared for countersink style tamper proof screws.
- C. Astragals for Double Doors: Specified in Section 08 71 00.
 - 1. Exterior Doors: Steel, Z-shaped.
 - 2. Fire-Rated Doors: Steel, shape as required to accomplish fire rating.
- D. Grout for Frames: Portland cement grout of maximum 4-inch slump for hand troweling; thinner pumpable grout is prohibited.
- E. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.
- F. Temporary Frame Spreaders: Provide for all factory- or shop-assembled frames.

2.06 FINISH MATERIALS

- A. Interior Doors: Factory primed. Exterior Doors:
- B. Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.
- C. Kynar finish. Color to be selected.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.
- B. Coat inside of other frames with bituminous coating to a thickness of 1/16 inch (1.5 mm).

3.03 INSTALLATION

- A. Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.
- B. In addition, install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- E. Coordinate installation of hardware.
- F. Coordinate installation of glazing.
- G. Coordinate installation of electrical connections to electrical hardware items.
- H. Touch up damaged factory finishes.

3.04 ERECTION TOLERANCES

- A. Clearances Between Door and Frame: As specified in ANSI A250.8.
- B. Maximum Diagonal Distortion: 1/16 in (1.5 mm) measured with straight edge, corner to corner.

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.
- B. Adjust sound control doors so that seals are fully engaged when door is closed.
- C. Test sound control doors for force to close, latch, and unlatch in accordance with ASTM E 1408; adjust as required to comply.

3.06 SCHEDULE

- A. Refer to Door and Frame Schedule appended to this section.

END OF SECTION

SECTION 08 15 13

LAMINATE PLASTIC DOORS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide plastic faced wood doors, complete in place with finish hardware installed, where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.02 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 33 23.
- B. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
 - 3. Samples, approximately 200 mm x 200 mm (8" x 8") in size, of each of the proposed door face materials.

1.03 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- B. In addition to complying with pertinent codes and regulations of governmental agencies having jurisdiction, comply with:
 - 1. "Manual of Millwork" of the Woodwork Institute of California, for the grade or grades specified; or
 - 2. "Architectural Woodwork Quality Standards" of the Architectural Woodwork Institute, for the grade or grades specified.
 - 3. Certification and stamps will not be required.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 65 00.
- B. Delivery:
 - 1. Deliver doors to site after plaster and cement are dry, and after the building has reached average prevailing humidity of its locality.
 - 2. Deliver prefinished doors in manufacturers' original containers, clearly marked with manufacturer's name, brand name, size, thickness, and identifying symbol on the covering.

- C. Storage:
 - 1. Stack flat on 50 mm x 100 mm (2" x 4") lumber, laid 300 mm (12") from ends and across center.
 - 2. Under bottom door and over top of stack, provide plywood or corrugated cardboard to protect door surfaces.
 - 3. Store doors in area where there will be no great variations in heat, dryness, and humidity.
- D. Lift doors and carry them into position. Do not drag doors across one another.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Acceptable manufacturer: Marshfield Door System or equal products of:
 - 1. Algoma
 - 2. Edcers

2.02 MATERIALS

- A. Provide laminated plastic faced doors of the types, designs, and thicknesses shown on the Door Schedule in the Drawings, labeled or non-labeled as indicated and as required, and in solid core as shown on the Door Schedule.
- B. Except as may be shown otherwise on the Drawings, fabricate the work of this Section to "custom grade" of the referenced organization.
- C. Provide sound-insulated door where shown on the door schedule. Marshfield # DSR 45.
- D. Faces:
 - 1. On both faces, use .48 plastic laminate as manufactured by Wilsonart Division of Ralph Wilson Plastics, or an equal approved in advance by the Architect, in colors and patterns selected by the Architect from standard colors and patterns of the approved plastics manufacturer. Use .050 fire-rated laminate at fire-rated doors.
 - 2. On both vertical edges, as specifically approved in advance by the Architect, provide prefinished hardwood.
 - 3. On tops and bottoms of doors, provide a positive sealer applied after completion of machining and fitting.
- E. Vision Lite Frame: Square profile, satin aluminum. By: Air Louvers or equal.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Fitting and machining laminated plastic faced doors:
 - 1. Using measurements obtained in the field from installed frames, machine the doors at the factory to fit the prescribed frames with proper clearance at top, bottom, and vertical edges.
 - 2. Replace or rehang doors which are hinge bound and do not swing or operate freely.
- B. Finish hardware:
 - 1. Receive and retain custody of finish hardware furnished under Section 08710 of these Specifications for the work of this Section.
 - 2. Except as otherwise directed by the Architect, install finish hardware in accordance with its manufacturers' recommendations.

3.03 ADJUST AND CLEAN

- A. Upon completion of the installation, inspect each component.
 - 1. Verify that each item has been fabricated and installed in accordance with the specified requirements.
 - 2. Make necessary adjustments.
 - 3. Touch-up as necessary to make surface blemishes permanently invisible to the unaided eye from a distance of 1500 mm (5'-0").

3.04 COMPLIANCE

- A. The Owner reserves the right to request and pay for an inspection by a representative of the referenced organization to determine that the work of this Section has been performed in accordance with the specified standards.
- B. In the event such inspection determines the work of this Section does not comply with the specified requirements, immediately remove the non-complying items and replace them with items complying with the specified requirements, all at no additional cost to the Owner, and reimburse the Owner for the cost of the inspection.

END OF SECTION

SECTION 08 31 00

ACCESS DOORS AND PANELS

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Flush access doors and panels.
 - 2. Related hardware and attachments.

1.02 RELATED SECTION

- A. Section 09 29 00 - Gypsum Board Assemblies.
- B. Section 09 51 00 - Acoustical Ceilings.
- C. Section 09 90 00 - Paints and Coatings.
- D. Division 15 - Mechanical.
- E. Division 16 – Electrical.

1.03 SYSTEM DESCRIPTION

- A. Milcor M and MS Access Doors provide critical service access in drywall, masonry or tile walls and offer superior resistance to corrosion.

1.04 SUBMITTALS

- A. Comply with Sections 01 31 00 & 01 33 00.
- B. Shop Drawings:
 - 1. Door and panel units: Show types, elevations, thickness of metals, full size profiles of door members.
 - 2. Hardware: Show materials, finishes, locations of fasteners, types of fasteners, locations and types of operating hardware, and details of installation.
- C. General: Show connections of units and hardware to other Work. Include schedules showing location of each type and size of door and panel units.
- D. Product Data: Manufacturer's technical data for each type of access door and panel assembly, including setting drawings, templates, fire-resistive characteristics, finish requirements, and details of anchorage devices.
- E. Include complete schedule, types, locations, construction details, finishes, latching or locking provisions, and other pertinent data.
- F. Manufacturer's Installation Instructions: Indicate installation requirements and rough-in dimensions.

1.05 QUALITY ASSURANCE

- A. Comply with Section 01 40 00 and 01 41 00.

- B. Single Source Responsibility: Obtain access door and panel units, and frames for entire Project from 1 source and 1 single manufacturer.
- C. Fire-Resistance Ratings:
 1. Where a fire-resistance classification is indicated, provide access door and panel assemblies with panel door, frame, hinge, and latch from manufacturer listed in Underwriter's Laboratories (UL), "Building Materials Directory" for rating shown.
 2. Provide 90 minutes UL label at 20 hour rated partitions. Provide 3 hour label at horizontal applications, up to 24 inch wide x 36 inch high.
 3. Provide 2 hour label at horizontal applications greater than 24 inch wide x 36 inch high.
- D. Size Variations: Obtain Architect's acceptance and approval of manufacturer's standard size units that may vary slightly from sizes indicated on Drawings.
- E. Coordination: Provide inserts and anchoring devices that will be built into other Work for installation of access door assemblies. Coordinate delivery with other Work to avoid delay.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Comply with Section 01 62 00
 1. Package and ship per manufacturer's recommendations. One per carton.
 2. Store per manufacturer's instructions.
 3. Store in dry area out of direct sunlight.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Equal to Milcor, Telephone:800.624.8642
 1. Style M and MS Doors
 2. Finish: Style M Factory Primed field painted
 Style MS stainless steel
 3. Location: Use MS Style at wet areas

2.02 MATERIALS

- A. Style M, Prime Painted: 14-gauge steel frame and door panel. Style MS.
- B. Stainless Steel: 16-gauge stainless steel frame and door panel.

2.03. ACCESS PANELS

- A. Finishes: Milcor access doors are offered in corrosion-resistant, prime-painted and stainless steel surfaces. The prime-painted surface is factory-painted through an electro-static binding process with an ionized power paint and then thermo set in a curing cycle to eliminate runs and bubble. This paint able surface can be used as is, or painted to suit specific décor. Stainless steel models in a satin finish are available for added corrosion resistance
- B. Hinge: Concealed spring hinges open to 175 degrees. Extracting pin from hinge leaf attached to panel permits panel removal. Number of hinges varies with size of door: check with your Milcor representative for details.
- C. Flush: Screwdriver-operated with steel cam. Available with Allen head or spanner head cam on special order. Cylinder lock with two keys furnished to replace one cam lock, if required, at slight extra charge.

- D. Anchor: Milcor M & MS door frames are furnished with masonry anchors, if specified, at slight extra charge. Number of anchors varies per door size requirements.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Comply with Section 01 70 00
- B. Verify that rough openings for door and frame are correctly sized and located.
- C. Verify mechanical and electrical requirements for ceiling or wall access panels.

3.02 PREPARATION

- A. Advise installers of work relating to access panel installation including rough opening dimensions, locations of supports, and anchoring methods. Coordinate delivery with other work to avoid delay.

3.03 INSTALLATION

- A. Install access door and frame units per manufacturer's written instructions.
- B. Install frames plumb and level in opening. Secure rigidly in place.
- C. Position units to provide convenient access to concealed Work requiring access.

3.04 ADJUST AND CLEAN

- A. Adjust panel after installation for proper operation.
- B. Remove and replace panels or frames that are warped, bowed, or damaged.

END OF SECTION

SECTION 08 81 00

GLAZING

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Glass.
- B. Glazing compounds and accessories.

1.02 RELATED SECTIONS

- A. Section 07 92 00 - Sealant & Caulking
- B. Section 08 11 10 - Steel Doors and Frames: Glazed doors and borrowed lites.
- C. Section 08 14 00 – Solid Core Wood Doors

1.03 REFERENCES

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials; current edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test; 2004.
- C. ASTM C 864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers; 2005.
- D. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2005.
- E. ASTM C 1036 - Standard Specification for Flat Glass; 2001.
- F. ASTM C 1048 - Standard Specification for Heat-Treated Flat Glass--Kind HS, Kind FT Coated and Uncoated Glass; 2004.
- G. ASTM C 1172 - Standard Specification for Laminated Architectural Flat Glass; 2003.
- H. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2005a.
- I. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.
- J. ASTM E 773 - Standard Test Method for Accelerated Weathering of Sealed Insulating Glass Units; 2001.
- K. ASTM E 774 - Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units; 1997.
- L. ASTM E 1300 - Standard Practice for Determining Load Resistance of Glass in Buildings; 2004.

- M. ASTM E 2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation; 2002.
- N. GANA (GM) - GANA Glazing Manual; Glass Association of North America; 2004.
- O. GANA (SM) - FGMA Sealant Manual; Glass Association of North America; 1990.
- P. GANA (LGDG) - Laminated Glazing Reference Manual; Glass Association of North America; 2006.
- Q. SIGMA TM-3000 - Glazing Guidelines for Sealed Insulating Glass Units; Sealed Insulating Glass Manufacturers Association; 2004.

1.04 PERFORMANCE REQUIREMENTS

- A. Provide glass and glazing materials for continuity of building enclosure vapor retarder and air barrier:
 - 1. In conjunction with vapor retarder and joint sealer materials described in other sections.
 - 2. To utilize the inner pane of multiple pane sealed units for the continuity of the air barrier and vapor retarder seal.
 - 3. To maintain a continuous air barrier and vapor retarder throughout the glazed assembly from glass pane to heel bead of glazing sealant.
- B. Select type and thickness of exterior glass to withstand dead loads and wind loads acting normal to plane of glass at design pressures calculated in accordance with Chapter 24, California Building Code, 2001.
 - 1. Use the procedure specified in ASTM E 1300 to determine glass type and thickness.
 - 2. Limit glass deflection to 1/200 or flexure limit of glass, whichever is less, with full recovery of glazing materials.
 - 3. Thicknesses listed are minimum.

1.05 SUBMITTALS

- A. See Section 01 33 23 - Administrative Requirements, for submittal procedures.
- B. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- C. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.
- D. Samples: Submit two samples 12 x 12 inch (300 x 300 mm) in size of glass and plastic units, showing coloration and design.
- E. Samples: Submit 1-inch (25 mm) long bead of glazing sealant. Color to be selected.
- F. Certificates: Certify that products meet or exceed specified requirements.
- G. Manufacturer's Certificate: Certify that glass meets or exceeds specified requirements.

1.06 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA Glazing Manual and FGMA Sealant Manual for glazing installation methods.
- B. Installer Qualifications: Company specializing in performing the work of this section with documented experience.

1.07 PRE-INSTALLATION MEETING

- A. Convene one week before starting work of this section.

1.08 ENVIRONMENTAL REQUIREMENTS

- A. Do not install glazing when ambient temperature is less than 50 degrees F (10 degrees C).
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

1.09 WARRANTY

- A. See Section 01740 - Closeout Submittals, for additional warranty requirements.
- B. Provide a five (5) year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.
- C. Provide a five (5) year warranty to include coverage for delamination of laminated glass and replacement of same.

1.10 MAINTENANCE PRODUCTS

- A. Provide two of each glass size and each glass type, of insulated glass units.

PART 2 - PRODUCTS

2.01 FLAT GLASS MATERIALS

- A. Manufacturers:
 - 1. PPG Industries, Inc: www.ppg.com.
 - 2. Pilkington Building Products North America: www.pilkington.com.
 - 3. ACH Glass/Versalux: www.versaluxglass.com.
 - 4. Substitutions: Refer to Section 01 60 00 - Product Requirements.

INTERIOR:

- B. Clear Float Glass (Type II): Clear, fully tempered.
 - 1. Comply with ASTM C 1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select).
 - 2. Comply with ASTM C 1048.
 - 3. 3/8", 10mm thick where indicated on drawings
- C. Safety Glass (Type I): Clear; fully tempered with horizontal tempering.
 - 1. Laminated with 0.030 inch (0.76 mm) thick plastic interlayer; comply with ASTM C 1172
 - 2. Comply with ASTM C 1036, Type I, transparent flat, Class 1 clear, Quality Q3 (glazing select) and ASTM C 1048.
 - 3. Comply with 16 CFR 1201 test requirements for Category II.
 - 4. Comply with ANSI Z97.1.
 - 5. Where glazing is to be installed in fire-rated partition, provide glazing that is also fire-protection rated in accordance with applicable code.
 - 6. 1/4", 6 mm minimum thick.

7. Provide this type of glazing in the locations required by code.
 - a. Glazed lites in doors except fire doors.
 - b. Glazed sidelights to doors.
- D. Acid-Etched Laminated Glass (Type III) by: Vision Glass
 1. Distributor: Goldray Industries Ltd., 800.640.3709
 2. ¼" thick, tempered, Style # S10663 Royal Satin
 3. Comply with ASTM.

2.02 GLAZING COMPOUNDS

- A. Manufacturers:
 1. Bostik, Inc: www.bostik-us.com.
 2. GE Silicones: www.gesilicones.com.
 3. Pecora Corporation: www.pecora.com.
 4. BASF Construction Chemicals, Inc: www.chemrex.com.
 5. Substitutions: Refer to Section 01600 - Product Requirements.
- B. Glazing Putty: Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; custom color.
- C. Polyurethane Sealant (Type 2): Single component, chemical curing, non-staining, non-bleeding; ASTM C 920, Type S, Grade NS, Class 25, Uses M, A, and G; Shore A Hardness Range 20 to 35; color to be selected.
- D. Silicone Sealant (Type 3): Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C 920, Type S, Grade NS, Class 25, Uses M, A, and G; cured Shore A hardness of 15 to 25; clear color.

2.03 GLAZING ACCESSORIES

- A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C 864 Option I. Length of 0.1 inch for each square foot (25 mm for each square meter) of glazing or minimum 4 inch (100 mm) x width of glazing rabbet space minus 1/16 inch (1.5 mm) x height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 3 inch (75 mm) long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
- C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper.
 1. Manufacturers:
 - a. Pecora Corporation: www.pecora.com.
 - b. Tremco, Inc: www.tremcosealants.com.
 - c. Substitutions: Refer to Section 01 60 00 - Product Requirements.
- D. Glazing Tape: Closed cell polyvinyl chloride foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent, designed for compression of 25 percent to affect an air barrier and vapor retarder seal.
 1. Manufacturers:
 - a. Pecora Corporation: www.pecora.com.
 - b. Saint-Gobain Performance Plastics: www.plastics.saint-gobain.com.
 - c. Substitutions: Refer to Section 01 60 00 - Product Requirements.
- E. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C 864 Option I.

- F. Glazing Clips: Manufacturer's standard type.
- G. Smoke Removal Unit Targets: Adhesive targets affixed to glass to identify glass units intended for removal for smoke control.

2.04 SOURCE QUALITY CONTROL AND TESTS

- A. Provide shop inspection and testing for safety glass.
- B. Test samples in accordance with ANSI Z97.1.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that openings for glazing are correctly sized and within tolerance.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

3.02 PREPARATION

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.
- D. Install sealants in accordance with ASTM C 1193 and FGMA Sealant Manual.
- E. Install sealant in accordance with manufacturer's instructions.

3.03 INSTALLATION - EXTERIOR/INTERIOR DRY METHOD (GASKET GLAZING)

- A. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.
- B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.04 INSTALLATION - EXTERIOR DRY METHOD (TAPE AND GASKET SPLINE GLAZING)

- A. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.

- D. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.
- E. Trim protruding tape edge.

3.05 INSTALLATION - EXTERIOR WET/DRY METHOD (PREFORMED TAPE AND SEALANT)

- A. Cut glazing tape to length and set against permanent stops, 3/16 inch (5 mm) below sight line. Seal corners by butting tape and dabbing with butyl sealant.
- B. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete the continuity of the air and vapor seal.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.
- D. Rest glazing on setting blocks and push against tape and heel bead of sealant with sufficient pressure to attain full contact at perimeter of pane or glass unit.
- E. Install removable stops, with spacer strips inserted between glazing and applied stops below sight line. Place glazing tape on glazing pane or unit with tape flush with sight line.
- F. Fill gap between glazing and stop with sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch (9 mm) below sight line.
- G. Apply cap bead type sealant along void between the stop and the glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.06 INSTALLATION - EXTERIOR WET METHOD (SEALANT AND SEALANT)

- A. Place setting blocks at 1/4 points and install glazing pane or unit.
- B. Install removable stops with glazing centered in space by inserting spacer shims both sides at 24 inch (600 mm) intervals, 1/4 inch (6 mm) below sight line.
- C. Fill gaps between glazing and stops with sealant to depth of bite on glazing, but not more than 3/8 inch (9 mm) below sight line to ensure full contact with glazing and continue the air and vapor seal.
- D. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.07 INSTALLATION - EXTERIOR BUTT GLAZED METHOD (SEALANT ONLY)

- A. Temporarily brace glass in position for duration of glazing process. Mask edges of glass at adjoining glass edges and between glass edges and framing members.
- B. Temporarily secure a small diameter non-adhering foamed rod on back side of joint.
- C. Apply sealant to open side of joint in continuous operation; thoroughly fill the joint without displacing the foam rod. Tool the sealant surface smooth to concave profile.
- D. Permit sealant to cure then remove foam backer rod. Apply sealant to opposite side, tool smooth to concave profile.
- E. Remove masking tape.

3.08 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)

- A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.
- C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- D. Place glazing tape on free perimeter of glazing in same manner described above.
- E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- F. Knife trim protruding tape.

3.09 INSTALLATION - INTERIOR WET/DRY METHOD (TAPE AND SEALANT)

- A. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches (150 mm) from corners.
- C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.
- D. Install removable stops, spacer shims inserted between glazing and applied stops at 24 inch (600 mm) intervals, 1/4 inch (6 mm) below sight line.
- E. Fill gaps between pane and applied stop with sealant to depth equal to bite on glazing, to uniform and level line.
- F. Trim protruding tape edge.

3.10 INSTALLATION - INTERIOR WET METHOD (COMPOUND AND COMPOUND)

- A. Install glazing resting on setting blocks. Install applied stop and center pane by use of spacer shims at 24 inch (600 mm) centers, kept 1/4 inch (6 mm) below sight line.
- B. Locate and secure glazing pane using glazers' clips.
- C. Fill gaps between glazing and stops with glazing compound until flush with sight line. Tool surface to straight line.

3.11 INSTALLATION - PLASTIC FILM

- A. Install plastic film with adhesive, applied in accordance with film manufacturer's instructions.
- B. Place without air bubbles, creases or visible distortion.
- C. Fit tight to glass perimeter with razor cut edge.

3.12 MANUFACTURER'S FIELD SERVICES

- A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.
- B. Monitor and report installation procedures and unacceptable conditions.

3.13 CLEANING

- A. Remove glazing materials from finish surfaces.
- B. Remove labels after Work is complete.
- C. Clean glass and adjacent surfaces.

3.14 PROTECTION OF FINISHED WORK

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

3.15 SCHEDULE

- A. Aluminum Windows: Type 1.
- B. Steel Windows: Type 4, exterior wet method with Type 2 compound.
- C. Metal-Framed Storefronts and Curtain Wall: Type 2, thicknesses required to comply with performance requirements, exterior dry method.
- D. Flush Wood Doors:
 - 1. Fire-rated: Firelite glass, interior wet method.
 - 2. Interior: Type 1, 6 mm thick, interior wet method.
- E. Stile and Rail Wood Doors:
 - 1. Interior: Type 1, 6 mm thick, interior wet method.
- F. Glass Wall:
 - 1. Interior: Type 5

END OF SECTION

SECTION 09 22 16.13

NON-STRUCTURAL METAL STUD FRAMING

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Metal partition, ceiling, and soffit framing.
- B. Framing accessories.

1.02 RELATED SECTIONS

- A. Section 05 40 00 - Cold Formed Metal Framing: Structural load bearing metal stud framing and Exterior wall stud framing.
- B. Section 06 10 00 – Rough Carpentry.
- C. Section 07 21 00 - Thermal Insulation: Acoustic Insulation.
- D. Section 08 31 00 - Access Doors and Panels.
- E. Section 09 22 36.13 - Metal Lath.
- F. Section 09 26 00 - Gypsum Board Assemblies: Metal studs for gypsum board partition framing.

1.03 REFERENCES

- A. AISI SG02-1 - North American Specification for the Design of Cold-Formed Steel Structural Members; American Iron and Steel Institute; 2001 with 2004 supplement. (Replaced SG-971)
- B. ASTM C 645 - Standard Specification for Nonstructural Steel Framing Members; 2004a.
- C. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2001.
- D. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2004.
- E. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2004.
- F. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2004.
- G. ASTM E 413 - Classification for Rating Sound Insulation; 2004.
- H. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings; 2002 (Ed. 2004).

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate prefabricated work, component details, stud layout, framed openings, anchorage to structure, acoustic details, type and location of fasteners, accessories, and items of other related work.
 - 2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.

- C. Product Data: Provide data describing framing member materials and finish, product criteria, load charts, and limitations.
- D. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.05 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-structural steel framing, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency. Products used in the assembly shall carry a classification label from a testing laboratory acceptable to authority having jurisdiction.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

1.06 MOCK-UP

- A. Provide mock-up of stud wall, ceiling, and soffit framing including insulation, sheathing, window frame, and door frame and finish specified in other sections. Coordinate with installation of associated work specified in other sections.
 - 1. Mock-up Size: Full height, minimum 12 feet (3.5 m) long, including corner.
 - 2. Mock-up may remain as part of the Work.

1.07 PROJECT CONDITIONS

- A. Coordinate the placement of components to be installed within stud framing system.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Metal Framing, Connectors, and Accessories: Member of Steel Stud Manufacturer's Association.
 - 1. Dietrich Metal Framing; www.dietrichindustries.com.
 - 2. Equal products by: Clark Steel Framing Systems; www.clarksteel.com.
 - 3. Substitutions: See Section 01600 - Product Requirements.

2.02 FRAMING MATERIALS

- A. Fire Rated Assemblies: Comply with applicable code and as follows:
 - 1. Fire Rated Partitions: Listed assembly by UL, No. U419 or U448; 1-hour rating.
 - 2. Fire Rated Partitions: Listed assembly by UL, No. U412 or U419; 2-hour rating.
 - 3. Fire Rated Ceiling and Soffits: Listed assembly by UL, No. ____; ____ hour rating.
 - 4. Fire Rated Shaft Wall Requirements: Listed assembly by UL, No. ____; ____ hour rating.
- B. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf (240 Pa).
 - 1. Studs: C shaped with flat or formed webs with knurled faces.
 - 2. Runners: U shaped, sized to match studs.
 - 3. Ceiling Channels: C shaped.
 - 4. Furring: Hat-shaped sections, minimum depth of 7/8 inch (22 mm).

- C. Loadbearing Studs: As specified in Section 05 40 00.
- D. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.
- E. Partition Head to Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.
- F. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
 - 1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI North American Specification for the Design of Cold-Formed Steel Structural Members.
 - 2. Material: ASTM A 653/A 653M steel sheet, SS Grade 50, with G60/Z180 hot dipped galvanized coating.
 - 3. Provide components UL-listed for use in UL-listed fire-rated head of partition joint systems indicated on drawings.
 - 4. Provide top track preassembled with connection devices spaced to fit stud spacing indicated on drawings; minimum track length of 12 feet (3660 mm).
- G. Tracks and Runners: Same material and thickness as studs, bent leg retainer notched to receive studs with provision for crimp locking to stud.
- H. Furring and Bracing Members: Of same material as studs; thickness to suit purpose; complying with applicable requirements of ASTM C 754.
- I. Fasteners: ASTM C 1002 self-piercing tapping screws.
- J. Sheet Metal Backing: 0.036 inch (0.9 mm) thick, galvanized.
- K. Anchorage Devices: Power actuated.
- L. Acoustic Insulation: ASTM C 665; preformed glass fiber, friction fit type, unfaced. Thickness: As indicated on drawings.
- M. Acoustic Insulation: As specified in Section 09 81 00.
- N. Acoustic Sealant: Non-hardening, non-skinning, for use in conjunction with gypsum board. Provide Sheetrock Brand acoustical sealant manufactured by USG.
- O. Acoustic Sealant: As specified in Section 07 92 19.
- P. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic.

2.03 FABRICATION

- A. Fabricate assemblies of framed sections to sizes and profiles required.
- B. Fit, reinforce, and brace framing members to suit design requirements.
- C. Fit and assemble in largest practical sections for delivery to site, ready for installation.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that rough-in utilities are in proper location.

3.02 INSTALLATION OF STUD FRAMING

- A. Comply with requirements of ASTM C 754.
- B. Extend partition framing to structure where indicated and to ceiling in other locations.
- C. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
- D. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs as indicated.
- E. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- F. Align and secure top and bottom runners at 24 inches (600 mm) on center.
- G. At partitions indicated with an acoustic rating:
 - 1. Provide components and install as required to produce STC rating of 52, based on published tests by manufacturer conducted in accordance with ASTM E 90 with STC rating calculated in accordance with ASTM E 413.
 - 2. Place one bead of acoustic sealant between runners and substrate, studs and adjacent construction.
 - 3. Place one bead of acoustic sealant between studs and adjacent vertical surfaces.
- H. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- I. Install studs vertically at 12 inches (300 mm) on center.
- J. Install studs vertically at spacing indicated on drawings.
- K. Align stud web openings horizontally.
- L. Secure studs to tracks using crimping method. Do not weld.
- M. Stud splicing is not permissible.
- N. Stud splicing is permissible; splice studs with 8 inch (200 mm) nested lap, secure each stud flange with flush head screw.
- O. Fabricate corners using a minimum of three studs.
- P. Double stud at wall openings, door and window jambs, not more than 2 inches (50 mm) from each side of openings.
- Q. Brace stud framing system rigid.
- R. Coordinate erection of studs with requirements of door frames; install supports and attachments.
- S. Coordinate installation of bucks, anchors, and blocking with electrical and mechanical work to be placed within or behind stud framing.
- T. Blocking: Use wood blocking secured to studs. Provide blocking for support of plumbing fixtures.
- U. Use sheet metal backing for reinforcement of partitions with wall-hung cabinetry, and as indicated on the drawings.

3.03 CEILING AND SOFFIT FRAMING

- A. Comply with requirements of ASTM C 754.
- B. Install furring after work above ceiling or soffit is complete. Coordinate the location of hangers with other work.
- C. Install furring independent of walls, columns, and above-ceiling work.
- D. Securely anchor hangers to structural members or embed in structural slab. Space hangers as required to limit deflection to criteria indicated. Use rigid hangers at exterior soffits.
- E. Space main carrying channels at maximum 72 inch (1 800 mm) on center, and not more than 6 inches (150 mm) from wall surfaces. Lap splice securely.
- F. Securely fix carrying channels to hangers to prevent turning or twisting and to transmit full load to hangers.
- G. Place furring channels perpendicular to carrying channels, not more than 2 inches (50 mm) from perimeter walls, and rigidly secure. Lap splices securely.
- H. Reinforce openings in suspension system which interrupt main carrying channels or furring channels with lateral channel bracing. Extend bracing minimum 24 inches (600 mm) past each opening.
- I. Laterally brace suspension system.

3.04 ERECTION TOLERANCES

- A. Maximum Variation from True Position: 1/8 inch in 10 feet (3 mm in 3 m).
- B. Maximum Variation from Plumb: 1/8 inch in 10 feet (3 mm in 3 m).

END OF SECTION

SECTION 09 29 00

GYPSUM BOARD

PART 1 – GENERAL

1.1 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. Interior gypsum board.
 - 2. Exterior gypsum board for ceilings and soffits.
- B. Related Requirements:
 - 1. Section 06 16 00 "Sheathing" for gypsum sheathing for exterior walls.
 - 2. Section 09 22 16.13 "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board panels.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For the following products:
 - 1. Trim Accessories: Full-size Sample in 12-inch- (300-mm-) long length for each trim accessory indicated.

1.4 QUALITY ASSURANCE

- A. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. (9 sq. m) in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Install mockups for the following:
 - a. Each level of gypsum board finish indicated for use in exposed locations.
 - b. Each texture finish indicated.
 - 2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
 - 3. Simulate finished lighting conditions for review of mockups.
 - 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 – PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Moisture- and Mold-Resistant Assemblies: Provide and install moisture- and mold-resistant glass-mat gypsum wallboard products with moisture-resistant surfaces complying with ASTM C 1658 and ASTM C 1177 where indicated on Drawings and in all locations which might be subject to moisture exposure during construction.
- B. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- C. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.
- D. Low-Emitting Materials: For ceiling and wall assemblies, provide materials and construction identical to those tested in assembly and complying with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.2 GYPSUM BOARD, GENERAL

- A. Recycled Content of Gypsum Panel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 10% percent.
- B. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Basis-of-Design Product: The design for each type of gypsum board and related products is based on Georgia-Pacific Gypsum products named. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1. USG Corporation
 - 2. American Gypsum
 - 3. National Gypsum Company
 - 4. CertainTeed Corp.
 - 5. Lafarge North America Inc.
 - 6. PABCO Gypsum
- B. Gypsum Wallboard: ASTM C 1396/C 1396M.

1. Basis-of-Design Product: Georgia-Pacific Gypsum; DensArmor Plus High-Performance Interior Panel
 2. Thickness: 1/2 inch (12.7 mm).
 3. Long Edges: Tapered.
- C. Gypsum Board, Type X: ASTM C 1396/C 1396M.
1. Basis-of-Design Product: Georgia-Pacific Gypsum; DensArmor Plus Fireguard High-Performance Interior Panel
 2. Thickness: 5/8 inch (15.9 mm).
 3. Long Edges: Tapered.
- D. Flexible Gypsum Board: ASTM C 1396/C 1396M. Manufactured to bend to fit radii and to be more flexible than standard regular-type gypsum board of same thickness.
1. Basis-of-Design Product: Georgia-Pacific Gypsum; "ToughRock FlexRoc Gypsum Board".
 2. Thickness: 1/4 inch (6.4 mm).
 3. Long Edges: Tapered.
- E. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
1. Basis-of-Design Product: Georgia-Pacific Gypsum; DensArmor Plus High-Performance Interior Panel
 2. Thickness: 1/2 inch (12.7 mm).
 3. Long Edges: Tapered.
- F. Foil-Backed Gypsum Board: ASTM C 1396/C 1396M.
1. Core: [3/8 inch (9.5 mm), regular type] [1/2 inch (12.7 mm), regular type] [5/8 inch (15.9 mm), Type X] [Type C as required by fire-resistance-rated assembly indicated on Drawings].
 2. Long Edges: Tapered.
- G. Abuse-Resistant Gypsum Board: ASTM C 1629/C 1629M, Level 3.
1. Basis-of-Design Product: Georgia-Pacific Gypsum; DensArmor Plus Abuse-Resistant Panel.
 2. Thickness: 5/8 inch (15.9 mm).
 3. Long Edges: Tapered.
- H. Impact-Resistant Gypsum Board: ASTM C 1629/C 1629M.
1. Basis-of-Design Product: Georgia-Pacific Gypsum; "DensArmor Plus Impact-Resistant Panel".
 2. Thickness: 5/8 inch (15.9 mm).
 3. Long Edges: Tapered.
- I. Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
1. Basis-of-Design Product: Georgia-Pacific-P Gypsum; "[DensArmor Plus High-Performance Interior Panel] [DensArmor Plus Fireguard High-Performance Interior Panel] [DensArmor Plus Fireguard C High-Performance Interior Panel]"
 2. Core: [1/2 inch (12.7 mm), regular type] [5/8 inch (15.9 mm), Type X] [1/2 inch (12.7 mm), type C] [5/8 inch (15.9 mm), Type C].
 3. Long Edges: Tapered.
 4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 SPECIALTY GYPSUM BOARD

- A. Gypsum Board, Type C: ASTM C 1396/C 1396M. Manufactured to have increased fire-resistive capability.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "[DensArmor Plus Fireguard C High-Performance Interior Panel] or a comparable product by one of the following:
 - a. USG Corporation
 - b. American Gypsum
 - c. National Gypsum Company
 - d. CertainTeed Corp.
 - e. Lafarge North America Inc.
 - f. PABCO Gypsum
 - 2. Thickness: As required by fire-resistance-rated assembly indicated on Drawings.
 - 3. Long Edges: Tapered.
- B. Glass-Mat Interior Gypsum Board: ASTM C 1658/C 1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.
 - 1. Products: Subject to compliance with requirements
 - a. Georgia-Pacific Gypsum LLC; DensArmor Plus.
 - 2. Core: [5/8 inch (15.9 mm), Type X] [5/8 inch (15.9 mm), Type C] [5/8 inch (15.9 mm), abuse resistant] [5/8 inch (15.9 mm), impact resistant] and as indicated on the drawings
 - 3. Long Edges: Tapered.
 - 4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
- C. Acoustically Enhanced Gypsum Board: ASTM C 1396/C 1396M. Multilayer products constructed of two layers of gypsum boards sandwiching a viscoelastic sound-absorbing polymer core.
 - 1. Products: Subject to compliance with requirements,
 - a. National Gypsum Company; Sound Break.
 - b. Quiet Solution, Quiet Rock.
 - 2. Core: [5/8 inch (15.9 mm), regular type] [5/8 inch (15.9 mm), Type X] [1-3/8 inch (35 mm), regular type] and as indicated on the drawings.
 - 3. Long Edges: Tapered.
- D. Skim-Coated Gypsum Board: ASTM C 1396/C 1396M. Manufactured with a factory-applied skim coat.
 - 1. Products: Subject to compliance with requirements,
 - a. Lafarge North America Inc.; Rapid Deco L5.
 - 2. Core: [1/2 inch (12.7 mm), regular type] [5/8 inch (15.9 mm), Type X] an as indicated on the drawings.
 - 3. Long Edges: Tapered.

2.5 EXTERIOR GYPSUM BOARD FOR CEILINGS AND SOFFITS

- A. Exterior Gypsum Soffit Board: ASTM C 1396/C 1396M, with manufacturer's standard edges.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "ToughRock Soffit Board" or a comparable product by one of the following:

- a. USG Corporation
 - b. American Gypsum
 - c. National Gypsum Company
 - d. CertainTeed Corp.
 - e. Lafarge North America Inc.
 - f. PABCO Gypsum
2. Core: [As indicated] [1/2 inch (12.7 mm), regular type] [5/8 inch (15.9 mm), Type X].
- B. Glass-Mat Gypsum Sheathing Board: ASTM C 1177/C 1177M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.
- 1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "DensGlass Sheathing" or a comparable product by one of the following:
 - a. USG Corporation.
 - b. CertainTeed Corp.
 - c. National Gypsum Company.
 - d. Core: As indicated on the drawings.
 - 2. Size: [48 by 96 inches (1219 by 2438 mm)] [48 by 108 inches (1219 by 2743 mm)] [48 by 120 inches (1219 by 3048 mm)] [1200 by 2400 mm] [1200 by 2750 mm] [1200 by 3050 mm].
- C. Glass-Mat Gypsum Interior Board: ASTM C 1658/1658M, with fiberglass mat laminated to both sides and with manufacturer's standard edges.
- 1. Basis-of-Design Product: Subject to compliance with requirements, provide Georgia-Pacific Gypsum; "DensArmor Plus" or a comparable product by one of the following:
 - a. National Gypsum Company.
 - 2. Core: As indicated on the drawings
 - 3. Long Edges: Tapered.
- D. Fiberglass-Mat Faced Gypsum Sheathing: ASTM C1177:
- 1. Thickness: 1/2 inch.
 - 2. Width: 4 feet.
 - 3. Length: [8 feet] [9 feet] [10 feet].
 - 4. Weight: 1.9 lb/sq. ft.
 - 5. Edges: Square.
 - 6. Surfacing: Fiberglass mat on face, back, and long edges.
 - 7. Racking Strength (Ultimate, not design value) (ASTM E72): Not less than 540 pounds per square foot, dry.
 - 8. Flexural Strength, Parallel (ASTM C473): 80 lbf, parallel.
 - 9. Humidified Deflection (ASTM C1177): Not more than 2/8 inch.
 - 10. Permeance (ASTM E96): Not less than 23 perms.
 - 11. R-Value (ASTM C518): 0.56.
 - 12. Mold Resistance (ASTM D3273): 10, in a test as manufactured.
 - 13. Microbial Resistance (ASTM D6329, UL Environmental GREENGUARD 3-week protocol): Will not support microbial growth.
 - 14. Acceptable Products:
 - a. 1/2 inch DensGlass Sheathing, Georgia-Pacific Gypsum LLC.
- E. Fire-Rated Fiberglass-Mat Faced Gypsum Sheathing: ASTM C1177, Type X:

1. Thickness: 5/8 inch.
2. Width: 4 feet.
3. Length: [8 feet] [9 feet] [10 feet].
4. Weight: 2.5 lb/sq. ft.
5. Edges: Square.
6. Surfacing: Fiberglass mat on face, back, and long edges.
7. Racking Strength (Ultimate, not design value) (ASTM E72): Not less than 654 pounds per square foot, dry.
8. Flexural Strength, Parallel (ASTM C1177): 100 lbf, parallel.
9. Humidified Deflection (ASTM C1177): Not more than 1/8 inch.
10. Permeance (ASTM E96): Not less than 17 perms.
11. R-Value (ASTM C518): 0.67.
12. Mold Resistance (ASTM D3273): 10, in a test as manufactured.
13. Microbial Resistance (ASTM D6329, UL Environmental GREENGUARD 3-week protocol): Will not support microbial growth.
14. Acceptable Products:
 - a. 5/8 inch DensGlass Fireguard Sheathing, Georgia-Pacific Gypsum LLC.

2.6 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc
2. Shapes:
 - a. Cornerbead.
 - b. Bullnose bead.
 - c. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - d. L-Bead: L-shaped; exposed long flange receives joint compound.
 - e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - f. Expansion (control) joint.
 - g. Curved-Edge Cornerbead: With notched or flexible flanges.

B. Exterior Trim: ASTM C 1047.

1. Material: Hot-dip galvanized steel sheet
2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

C. Aluminum Trim: Extruded accessories of profiles and dimensions indicated.

1. Manufacturers: Subject to compliance with requirements:
 - a. Fry Reglet Corp.
 - b. Flannery
 - c. Pittcon Industries
2. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221 (ASTM B 221M), Alloy 6063-T5.
3. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified

2.7 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Exterior Gypsum Soffit Board: Paper.
3. Exterior Glass Mat Gypsum Soffit: Fiberglass mesh.
4. Glass-Mat Gypsum Wallboard: 10-by-10 fiberglass meh.
5. Glass-Mat Gypsum Sheathing Board: 10-by-10 fiberglass mesh.
6. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.
 - a. Basis-of-Design Product: Georgia-Pacific Gypsum; ToughRock Sandable Setting Compound.
2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use drying-type, all-purpose compound.
 - a. Basis-of-Design Product: Georgia-Pacific Gypsum; ToughRock Sandable Setting Compound, ToughRock Ready Mix All-Purpose Joint Compound.
 - b. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 - a. Basis-of-Design Product: Georgia-Pacific Gypsum; ToughRock Sandable Setting Compound, ToughRock Ready Mix All-Purpose Joint Compound, ToughRock Ready Mix Topping Joint Compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
 - a. Basis-of-Design Product: Georgia-Pacific Gypsum; ToughRock Sandable Setting Compound, ToughRock Ready Mix All-Purpose Joint Compound, ToughRock Ready Mix Topping Joint Compound.
5. Skim Coat: For final coat of Level 5 finish, use [setting-type, sandable topping compound] [drying-type, all-purpose compound].
 - a. Basis-of-Design Product: Georgia-Pacific Gypsum; ToughRock Sandable Setting Compound, ToughRock Ready Mix All-Purpose Joint Compound, ToughRock Ready Mix Topping Joint Compound.

D. Joint Compound for Exterior Soffit Applications:

1. Basis-of-Design Product: Georgia-Pacific Gypsum; "ToughRock Setting Compound."
2. Exterior Gypsum Soffit Board: Use setting-type taping compound and setting-type, sandable topping compound.
3. Glass-Mat Gypsum Sheathing Board: As recommended by sheathing board manufacturer.

E. Joint Compound for Tile Backing Panels:

1. Glass-Mat, Water-Resistant Backing Panel: As recommended by backing panel manufacturer.
2. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.8 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
 - 1. Laminating adhesive shall have a VOC content of 50g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 2. Laminating adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 - 1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.
 - 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 - 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
 - 2. Recycled Content of Blankets: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 10% percent.
- E. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. USG Corporation; SHEETROCK Acoustical Sealant.
 - b. Accumetric LLC; BOSS 824 Acoustical Sound Sealant.
 - c. Grabber Construction Products; Acoustical Sealant GSC.
 - d. Pecora Corporation; [AC-20 FTR] [AIS-919].
 - 2. Acoustical joint sealant shall have a VOC content of 250g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 3. Acoustical joint sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- F. Thermal Insulation: As indicated on the drawings.
- G. Vapor Retarder: As indicated on the drawings.

2.9 FINISHES

- A. Primer: As recommended by textured finish manufacturer.

Part 3 – EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.

- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. Wood Framing: Install gypsum panels over wood framing, with floating internal corner construction. Do not attach gypsum panels across the flat grain of wide-dimension lumber, including floor joists and headers. Float gypsum panels over these members or provide control joints to counteract wood shrinkage.
- J. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
- K. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Wallboard Type: As indicated on drawings.
2. Type X As indicated on drawings.
3. Ceiling Type: As indicated on drawings.
4. Foil-Backed Type: As indicated on drawings.
5. Abuse-Resistant Type: As indicated on drawings.
6. Impact-Resistant Type: As indicated on drawings.
7. Moisture- and Mold-Resistant Type: As indicated on drawings.
8. Type C: As indicated on drawings.
9. Glass-Mat Interior Type: As indicated on drawings.
10. Acoustically Enhanced Type: As indicated on drawings.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. Usually retain first subparagraph below if vertical application of panels is specified.
3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints.
4. Locate edge joints over furring members.
5. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches (400 mm) minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.
3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

E. Curved Surfaces:

1. Install panels horizontally (perpendicular to supports) and unbroken, to extent possible, across curved surface plus 12-inch- (300-mm-) long straight sections at ends of curves and tangent to them.
2. For double-layer construction, fasten base layer to studs with screws 16 inches (400 mm) o.c. Center gypsum board face layer over joints in base layer, and fasten to studs with screws spaced 12 inches (300 mm) o.c.

3.4 APPLYING EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS

- A. Apply panels perpendicular to supports, with end joints staggered and located over supports.
1. Install with 1/4-inch (6.4-mm) open space where panels abut other construction or structural penetrations.
 2. Fasten with corrosion-resistant screws.

3.5 APPLYING TILE BACKING PANELS

- A. Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and install at [showers, tubs, and where indicated] [locations indicated to receive tile]. Install with 1/4-inch (6.4-mm) gap where panels abut other construction or penetrations.
- B. Cementitious Backer Units: ANSI A108.11, at [showers, tubs, and where indicated] [locations indicated to receive tile].
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.6 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints [at locations indicated on Drawings] [according to ASTM C 840 and in specific locations approved by Architect for visual effect].
- C. Interior Trim: Install in the following locations:
1. Cornerbead: Use at outside corners [unless otherwise indicated].
 2. Bullnose Bead: Use [at outside corners] [where indicated] <Insert requirements>.
 3. LC-Bead: Use [at exposed panel edges] <Insert requirements>.
 4. L-Bead: Use [where indicated] <Insert requirements>.
 5. U-Bead: Use [at exposed panel edges] [where indicated] <Insert requirements>.
 6. Curved-Edge Cornerbead: Use at curved openings.
- D. Exterior Trim: Install in the following locations:
1. Cornerbead: Use at outside corners.
 2. LC-Bead: Use [at exposed panel edges] <Insert requirements>.
- E. Aluminum Trim: Install in locations [indicated on Drawings] <Insert requirements>.

3.7 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints[, rounded or beveled edges,] and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 2: [Panels that are substrate for tile] [Panels that are substrate for acoustical tile] [Where indicated on Drawings] <Insert locations>.
 - 3. Level 3 is suitable for surfaces receiving medium- or heavy-textured finishes before painting or heavy wallcoverings where lighting conditions are not critical.
 - 4. Level 3: [Where indicated on Drawings] <Insert locations>.
 - 5. Level 4: [At panel surfaces that will be exposed to view unless otherwise indicated] <Insert locations>.
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
 - 6. Level 5: [Where indicated on Drawings] <Insert locations>.
 - a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
- E. Glass-Mat Gypsum Sheathing Panel: Finish according to manufacturer's written instructions for use as exposed soffit board.
- F. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.
- G. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.8 APPLYING TEXTURE FINISHES

- A. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- B. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture[matching approved mockup and] free of starved spots or other evidence of thin application or of application patterns.
- C. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written recommendations.

3.9 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 09 53 00

ACOUSTICAL CEILING SUSPENSIONS ASSEMBLIES

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling system.
- B. Acoustical units.
- C. Supplementary acoustical insulation above ceiling.

1.02 RELATED SECTIONS

- A. Section 07 210 00 - Board and Batt Insulation: Acoustical insulation.
- B. Section 07 92 00 - Joint Sealers: Acoustical sealant.
- C. Section 08 31 00 - Access Doors and Panels: Access panels.
- D. Section 28 30 00 - Fire Alarm System: Fire alarm components in ceiling system.
- E. Section 21 11 00 - Fire Suppression Sprinklers: Sprinkler heads in ceiling system.
- F. Section 23 05 93 - Air Outlets and Inlets: Air diffusion devices in ceiling.
- G. Section 26 05 00 - Interior Luminaires: Light fixtures in ceiling system.

1.03 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; 2004.
- B. ASTM C 636 - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels; 2004.
- C. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2001.
- D. ASTM E 580 - Standard Practice for Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint; 2002.
- E. ASTM E 1264 - Standard Classification for Acoustical Ceiling Products; 1998 (Reapproved 2005).
- F. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.
- G. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.04 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate grid layout and related dimensioning.

- C. Product Data: Provide data on suspension system components.
- D. Samples: Submit two samples 6 x 6 inches in size illustrating material and finish of acoustical units.
- E. Samples: Submit two full size samples illustrating material and finish of acoustical units.
- F. Samples: Submit two samples each, 12 inches long, of suspension system main runner.
- G. Manufacturer's Installation Instructions: Indicate special procedures.

1.04.1 QUALITY ASSURANCE

- A. Fire-Resistive Assemblies: Complete assembly listed and classified by UL for the fire resistance indicated.
- B. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.04.2 ENVIRONMENTAL REQUIREMENTS

- A. Maintain uniform temperature of minimum 60 degrees F (16 degrees C), and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

1.04.3 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.

1.04.4 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Provide 5 sq ft of each type of acoustical unit for Owner's use in maintenance of project.
- C. Provide 5 percent of total acoustical unit area of each type of acoustical unit for Owner's use in maintenance of project.

PART 2 - PRODUCTS

2.01 ACOUSTICAL UNITS

- A. Manufacturers:
 - 1. Armstrong World Industries, Inc., - www.armstrong.com.
2500 Columbia Ave. (17603)
P.O. Box 3001
Lancaster, PA 17604
Tel: 717-397-0611
 - 2. USG - www.usg.com
 - 3. Substitutions: See Section 01600 - Product Requirements.

- B. Ceiling System:
1. Type 1: To match existing 'T' Bar System
 2. Type 2: Armstrong – 2' x 2' Standard 'T' Bar System
- C. Acoustical Tile, **Type 1**: Mineral fiber, ASTM E 1264 Type III, Class A, with to the following characteristics:
1. Size: 24 x 24 inches (600 x 600 mm)
 2. Product: To match existing
- D. Acoustical Tile, **Type 2**: Mineral fiber, ASTM E 1264 Type III, Class A.
- E. Armstrong Optima – Open plan tegular, # 3251, with the following characteristics:
1. Size: 24 x 24 inches (600 x 600 mm)
 2. Thickness: 1 inch (25 mm).
 3. Class: A, flame spread 25 or under (UL labeled), per ASTM E1264
 4. Light Reflectance: 90 percent, determined as specified in ASTM E 1264.
 5. NRC Range: 0.70 determined as specified in ASTM E 1264.
 6. Articulation Class (AC): A, determined as specified in ASTM E 1264.
 7. Ceiling Attenuation Class (CAC): 40, determined as specified in ASTM E 1264.
 8. Joint: Kerfed and rabbeted.
 9. Edge: Square Tegular
 10. Surface Color: White.
 11. Product: # 3251 by Armstrong.
 12. Suspension System: Type 1: Exposed 9/16" tee.
- F. Acoustical Units - General: ASTM E 1264, Class A.

2.02 SUSPENSION SYSTEM(S)

- A. Manufacturers:
1. Same as for acoustical units.
 2. Armstrong World Industries, Inc; Product Exposed T-Grid: www.armstrong.com.
 3. Chicago Metallic Corporation; Equal Product: www.chicagometallic.com.
 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. Type 1:
 - To match existing.
 2. Type 2:
 - Interlude Sonata – 9/16" Grid

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:
 - a. Provide L-shaped molding for mounting at same elevation as face of grid.
 - b. Provide Shadow molding where indicated on the drawings.
 - b. Provide custom perimeter trim where shown on the drawings.
 - c. Provide 'C' channel where recessed window shades (Mecho shade) occurs –

- See drawings

- C. Acoustical Insulation: Specified in Section 09 81 00.
 - 1. Thickness: 2 inch (50 mm).
 - 2. Size: To fit acoustical suspension system.
- D. Gypsum Board: Fire rated type; 5/8 inch (15 mm) thick, ends and edges square, paper faced.
- E. Acoustical Sealant For Perimeter Moldings: Specified in Section 07900.
- F. Gasket For Perimeter Moldings: Closed cell rubber sponge tape.
- G. Touch-up Paint: Type and color to match acoustical and grid units.

2.04 CUSTOM PERIMETER TRIM

- A. Product/Manufacturer: Axiom - Interlude Custom Perimeter Trim; Armstrong World Industries, Inc.
- B. Components: Edge trim system that compliments the unique Armstrong Interlude grid system visual (full panel installations only), 10 foot sections, extruded aluminum alloy 6063 trim channel, factory-finished in (factory-applied baked polyester paint to match Armstrong) (WH) color.
 - 1. Axiom Interlude Trim Channel: (2") (4") (6") extruded aluminum with special bosses formed for attachment to the Axiom tee-bar connection clip or hanging clip.
 - a. AXLD2STR – Axiom Interlude 2" straight
 - b. AXLD4STR – Axiom Interlude 4" straight
 - c. AXLD6STR – Axiom Interlude 6" straight
 - 2. Axiom Interlude Outside Corners (Straight Only): Commercial quality extruded aluminum sections formed to match the Axiom trim channel profile; pre-assembled with built-in splice plates that connect to straight Axiom sections; 12 inch x 3/4 inch x (2") (4") (6"); factory-finished in (factory-applied baked polyester paint to match Armstrong) () color; (architectural film textured finish), (color custom paint finish color-matched to approved sample).
 - a. AXLD2QSOS – 2" Axiom Interlude Outside Corner
 - b. AXLD4QSOS – 4" Axiom Interlude Outside Corner
 - c. AXLD6QSOS – 6" Axiom Interlude Outside Corner
 - 3. Axiom Interlude Inside Corners (Straight Only): Commercial quality extruded aluminum sections formed to match the Axiom trim channel profile that connect to straight Axiom sections, 12 inch x 3/4 inch x (2") (4") (6") factory-finished in (factory-applied baked polyester paint to match Armstrong) () color; (architectural film textured finish), (color custom paint finish color-matched to approved sample).
 - a. AXLD2QISIS – 2" Axiom Interlude Inside Corner
 - b. AXLD4QISIS – 4" Axiom Interlude Inside Corner
 - c. AXLD6QISIS – 6" Axiom Interlude Inside Corner
 - 4. Accessories:
 - a. AXHGC – Hanging clip, commercial quality aluminum, unfinished, used to align grid members that extend beyond the lower edge of the trim.
 - b. AX2HGC – Hanging clip, commercial quality aluminum, unfinished, used when suspension wires must be attached directly to the trim sections.
 - c. AXSPICE – Splice with set screws, galvanized steel, unfinished, used to attached factory-mitered inside corners

- d. AX4SPLICE – Splice with set screws, galvanized steel, unfinished, used to attach joints between sections of trim.
- e. IES3 – Interlude Expansion Sleeve

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. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.
- D. Locate system on room axis according to reflected plan.
- E. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
- F. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.
- G. 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.
- H. 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.
- I. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- J. Support fixture loads using supplementary hangers located within 6 inches (150 mm) of each corner, or support components independently.
- K. Do not eccentrically load system or induce rotation of runners.
- L. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
 - 1. Install with continuous gasket.
 - 2. Use longest practical lengths.
 - 3. Overlap and rivet corners.
- M. Form expansion joints as detailed. Form to accommodate plus or minus 1 inch (25 mm) movement. Maintain visual closure.
- N. Install light fixture boxes constructed of gypsum board above light fixtures in accordance with fire rated assembly requirements and light fixture ventilation requirements.

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. Lay directional patterned units with pattern parallel to longest room axis.
- D. Fit border trim neatly against abutting surfaces.
- E. Install units after above-ceiling work is complete.
- F. Install acoustical unit level, in uniform plane, and free from twist, warp, and dents.
- G. 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.
 - 4. Where round obstructions occur, provide preformed closures to match perimeter molding.
- H. Lay acoustical insulation for a distance of 48 inches (1 200 mm) either side of acoustical partitions as indicated.
- I. Install hold-down clips on each panel to retain panels tight to grid system; comply with fire rating requirements.
- J. Install hold-down clips on panels within 20 ft (6 m) of an exterior door.

3.04 ERECTION TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 09 65 00
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 RELATED SECTIONS

- A. Section 03 54 00 - Self-Leveling Underlayment.
- B. Section 26 05 00 - Electrical floor cover plates for installation of resilient flooring specified in this section.

1.03 REFERENCES

- A. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2006.
- B. ASTM F 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2005.
- C. ASTM F 1066 - Standard Specification for Vinyl Composition Floor Tile; 2004.
- D. ASTM F 1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing; 2004.
- E. ASTM F 1344 - Standard Specification for Rubber Floor Tile; 2004.
- F. ASTM F 1700 - Standard Specification for Solid Vinyl Floor Tile; 2004.
- G. ASTM F 1861 - Standard Specification for Resilient Wall Base; 2002.
- H. ASTM F 1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2004.
- I. ASTM F 2034 - Standard Specification for Sheet Linoleum Floor Covering; 2003.
- J. ASTM F 2195 - Standard Specification for Linoleum Floor Tile; 2003.
- K. BAAQMD 8-51 - Bay Area Air Quality Management District Regulation 8, Rule 51, Adhesive and Sealant Products; www.baaqmd.gov; current edition.
- L. FS RR-T-650 - Treads, Metallic and Nonmetallic, Skid Resistant; Federal Specifications and Standards; Revision E, 1994.
- M. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; National Fire Protection Association; 2006.
- N. RFCI - Recommended Work Practices for Removal of Resilient Floor Coverings; Resilient Floor Covering Institute; 1998.
- O. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.04 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. Shop Drawings: Indicate seaming plan.
- D. Selection Samples: Submit manufacturer's complete set of color samples for Design Professional's initial selection.
- E. Verification Samples: Submit two samples, 12 x 12 inch in size illustrating color and pattern for each resilient flooring product specified.
- F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- G. LEED Report: Report recycled content and VOC emission of flooring; VOC content of adhesives.
 - 1. For linoleum flooring, report rapidly-renewable content and urea-formaldehyde content.

1.05 DELIVERY, STORAGE, AND PROTECTION

- A. Protect roll materials from damage by storing on end.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).
- B. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

1.07 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Provide 5% of flooring, 10 lineal feet of base, and installed materials of each type and color specified.

PART 2 PRODUCTS

2.01 MATERIALS - TILE FLOORING

- A. Vinyl Tile: Solid vinyl with color and pattern throughout thickness, and:
 - 1. Minimum Requirements: Comply with ASTM F1700, Class corresponding to type specified.
 - 2. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
 - 3. Size: 13 x 13 inch
 - 4. Wear Layer Thickness: 0.020 inch (0.50 mm).
 - 5. Total Thickness: 0.100 inch (2.5 mm).
 - 6. Pattern: Forbo – Marmoleum Dual
 - 7. Color: To be selected.
 - 8. Manufacturers:
 - Forbo Flooring: Marmoleum Dual. www.forbo.com
 - or Approved equal product by one of the following:
 - a. Flexco, Inc; Product: Solid Vinyl Tile: www.flexcofloors.com.
 - b. Roppe, www.roppe.com.
 - c. Substitutions: See Section 01600 - Product Requirements.

2.02 MATERIALS - BASE

- A. Resilient Base: ASTM F 1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove, and as follows:

1. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
2. Height: 4 inch (100 mm) and 2 inch (50mm) where indicated on the drawings.
3. Thickness: 0.125 inch (3.2 mm) thick.
4. Finish: Satin.
5. Length: 4 foot (1.2 m) sections, where indicated on the finish schedule.
6. Length: Roll.
7. Color: Color as selected from manufacturer's standards.
8. Accessories: Premolded external corners and end stops.
9. Manufacturers:
 - a. BurkeMercer Flooring Products; www.burkemercer.com.
 - b. Johnsonite, Inc; www.johnsonite.com.
 - c. Substitutions: See Section 01600 - Product Requirements.

2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.
 1. Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168 and the Bay Area Air Quality Management District Regulation 8, Rule 51.
- C. Moldings and Edge Strips: Vinyl
 1. Product: Carpet to vinyl tile transition piece manufactured by Johnsonite. Color: To be selected.
- D. Filler for Coved Base: Plastic.
- E. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive resilient flooring.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Verify that sub-floor surfaces are dust-free and free of substances which would impair bonding of adhesive materials to sub-floor surfaces.
- D. Verify that concrete sub-floor surfaces are ready for resilient flooring installation by testing for moisture emission rate and alkalinity in accordance with ASTM F 710; obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- E. Verify that concrete sub-floor surfaces are ready for resilient flooring installation by testing for moisture emission rate 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 (7.1 kg per 100 sq m) per 24 hours when tested using calcium chloride moisture test kit for 72 hours.
 2. Alkalinity: pH range of 5-9.
- F. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings.
- B. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with sub-floor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is cured.
- D. Clean substrate.
- E. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed. Apply primer to concrete surfaces.

3.03 INSTALLATION - TILE FLOORING

- A. Install in accordance with manufacturer's instructions.
- B. Mix tile from container to ensure shade variations are consistent when tile is placed.
- C. Spread only enough adhesive to permit installation of materials before initial set.
- D. Set flooring in place, press with heavy roller to attain full adhesion.
- E. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern.
- F. Install tile to ashlar pattern. Allow minimum 1/2 full size tile width at room or area perimeter.
- G. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.
- H. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated. After installation of flooring, secure metal strips with stainless steel screws.
- I. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- J. Install flooring in recessed floor access covers. Maintain floor pattern.
- K. At movable partitions, install flooring under partitions without interrupting floor pattern.
- L. Install feature strips and floor markings where indicated. Fit joints tightly.

3.04 INSTALLATION - BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.
- B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.
- C. Install base on solid backing. Bond tightly to wall and floor surfaces.
- D. Scribe and fit to door frames and other interruptions.

3.05 CLEANING

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

3.06 PROTECTION OF FINISHED WORK

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09 68 13

TILE CARPETING

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Carpet tile, loose laid with edges and control grid adhered.
- B. Removal of existing carpet tile.
- C. Matching roll carpet for direct glue installation on base.

1.02 RELATED SECTIONS

- A. Section 01732 - Waste Management: Reclamation/Recycling of new carpet tile scrap
- B. Section 16000: Electrical floor cover plates with recess for carpet.

1.03 ALLOWANCES

- A. Section 01210 - Allowances: Cash allowances affecting this section.

1.04 REFERENCES

- A. ASTM D 2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials; 2004.
- B. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.
- C. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2006.
- D. CRI 104 - Standard for Installation of Commercial Textile Floorcovering Materials; Carpet and Rug Institute; 2002.
- E. CRI (GLA) - Green Label Testing Program - Approved Adhesive Products; www.carpet-rug.org; current edition.
- F. CRI (GLC) - Green Label Testing Program - Approved Product Categories for Carpet; www.carpet-rug.org; current edition.
- G. CRI (GLP) - Green Label Plus Carpet Testing Program - Approved Products; www.carpet-rug.org; current edition.
- H. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; National Fire Protection Association; 2006.

1.05 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate layout of joints.

- 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 carpet tiles illustrating color and pattern design for each carpet color selected.
- E. Submit two, 12 inch long samples of edge strip.
- F. LEED Report: Submit data documenting VOC content of carpet tile and adhesives; copy of current CRI Approved Products Listing is acceptable.
- G. Manufacturer's Installation Instructions: Indicate special procedures.
- H. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing carpet with minimum 5 years experience.

1.07 ENVIRONMENTAL REQUIREMENTS

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

1.08 EXTRA MATERIALS

- A. See Section 01600 - Product Requirements, for additional provisions.
- B. Provide two (2) of carpet tiles of each color and pattern selected.

PART 2 – PRODUCTS

2.01 MANUFACTURERS

- A. Shaw Contract Group; Product: Knit
- B. Other Acceptable Manufacturers:
 1. Interface, Inc; www.interfaceinc.com.
 2. Milliken & Company; www.milliken.com.
 3. Substitutions: See Section 01600 - Product Requirements.

2.02 MATERIALS

- A. Carpet Tile Type I: Tufted, manufactured in one color dye lot.
 1. Product: Knit Tile, manufactured by Shaw Contract Group.
 2. Tile Size: 24" x 24" inch, nominal.
 3. Thickness: .242 inch.
 4. Construction: Multi-level pattern loop.
 5. Pattern: # 59492
 6. Surface Burning Characteristics: Flame spread/Smoke developed index of Class 1, maximum, when tested in accordance with ASTM E 84.

7. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E 648 or NFPA 253.
8. Surface Flammability Ignition: Pass ASTM D 2859 (the "pill test").
9. VOC Content: Provide CRI Green Label Plus certified product; in lieu of labeling, independent test report showing compliance is acceptable.
10. Static Control Fiber: Permanent Conductive Fiber.
11. Max. Electrostatic Charge: 3 Kv. at 20 percent relative humidity.
12. Dye Method: 92% Solution-dyed / 8% Yarn-died.
13. Gage: 1/12 inch.
14. Stitches: 10.0 per inch.
15. Fiber: Eco Solution q^R nylon
16. Flaming Mode: < 450
17. Warranty: Lifetime Commercial Limited
18. Primary Backing Material: Synthetic
19. Secondary Backing Material: Ecoworx.Tile
20. Tufted Weight: 28 oz/yd(2)
21. Protective treatment: ssp^R shaw soil protection
22. Color: To be selected.

2.03 ACCESSORIES

- A. Sub-Floor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Adhesives: Acceptable to carpet manufacturers, compatible with materials being adhered; maximum VOC of 50 g/L; CRI Green Label certified; in lieu of labeled product, independent test report showing compliance is acceptable.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive carpet tile.
- C. Verify that sub-floor surfaces are dust-free and free of substances which would impair bonding of adhesive materials to sub-floor surfaces.
- D. Verify that concrete sub-floor surfaces are ready for carpet tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by carpet tile manufacturer and adhesive materials manufacturer.
- E. Verify that concrete sub-floor surfaces are ready for carpet tile installation by testing for moisture emission rate 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 (7.1 kg per 100 sq m) per 24 hours when tested using calcium chloride moisture test kit for 72 hours.
 2. Alkalinity: pH range of 5-9.
- F. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Remove existing carpet tile.
- B. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- D. Vacuum clean substrate.

3.03 INSTALLATION

- A. Install carpet tile in accordance with manufacturer's instructions and CRI 104.
- B. Blend carpet from different cartons to ensure minimal variation in color match.
- C. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- D. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- E. Locate change of color or pattern between rooms under door centerline.
- F. Adhere carpet tile to substrate along centerline of rooms, at perimeter of rooms, where tiles are cut, and at 15 foot (4.5 m) intervals throughout rooms. Lay remainder of tile dry over substrate.
- G. Adhere carpet tile as base finish up vertical surfaces to form base. Terminate top of base with cap strip.
- H. Trim carpet tile neatly at walls and around interruptions.
- I. Complete installation of edge strips, concealing exposed edges.

3.04 INSTALLATION ON STAIRS

- A. Use one piece of carpet for each tread and the riser below. Apply seam adhesive to all cut edges.
- B. Lay carpet with pile direction in the length of the stair.
- C. Adhere carpet tight to stair treads and risers.

3.05 CLEANING

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

END OF SECTION

SECTION 09 90 00

PAINTING & COATING

PARTS 1 – GENERAL

1.01 SUMMARY:

- A. Section Includes: Painting and finishing of all interior and exterior items and surfaces, unless otherwise indicated or listed under exclusions below:
 - 1. Paint all exposed surfaces, except as otherwise indicated, whether or not colors are designated. Include field painting of exposed exterior and interior plumbing, mechanical and electrical work, except as indicated below.
 - 2. Paint exterior stucco where indicated on Drawings.
- B. Work Included:
 - 1. The intent and requirements of this Section is that all work, items and surfaces which are normally painted and finished in a building of this type and quality, shall be so included in this contract, whether or not said work, item or surface is specifically called out and included in the schedules and notes on the drawings, or is, or is not, specifically mentioned in these specifications.
- C. The following general categories of work and items that are included under other sections shall not be a part of this section:
 - 1. Shop prime painting of structural and miscellaneous iron or steel.
 - 2. Shop prime painting of hollow metal work.
 - 3. Shop finished items.
- D. The Room Finish Schedules indicated on the drawings indicates the location of interior room surfaces to be painted or finished. The schedule indications are general and do not necessarily define the detail requirements. Include all detailed refinements and further instructions as may be given for the required complete finishing of all spaces and rooms.

1.02 SUBMITTALS:

- A. Product Data: Submit complete manufacturer's descriptive literature and specifications in accordance with the provisions of Section 01 30 00.
 - 1. Materials List: Submit complete lists of materials proposed for use, giving the manufacturer's name, catalog number, and catalog cut for each item when applicable. When required, provide a list of paint and coating materials proposed for use, which equates such materials with the design-basis products specified.
- B. Samples: In accordance with provisions of Section 01300, submit, on 8-1/2 inch by 11 inch hardboard, samples of each color, gloss, texture and material selected by the Architect from standard colors available for the coatings required.
 - 1. For natural and stained finishes, provide sample on each type and quality of wood used on the project.
- C. Manufacturer's Instructions: Submit the manufacturer's current recommended methods of installation, including relevant limitations, safety and environmental cautions, application rates, and composition analysis

1.03 QUALITY ASSURANCE:

- A. Regulatory Requirements: Comply with applicable codes and regulations of governmental agencies having jurisdiction including those having jurisdiction over airborne emissions and industrial waste disposal. Where those requirements conflict with this Specification, comply with the more stringent provisions. Regulatory changes may affect the formulation, availability, or use of specified coatings. Confirm availability of coatings to be used prior to job going out to bid and before start of painting project.
 - a. Comply with the current applicable regulations of the California Air Resources Board (CARB) and the Environmental Protection Agency (EPA).
 - b. Comply with South Coast Air Quality Management District (SCAQMD) Rule 1113. A copy of this regulation can be obtained from <http://www.aqmd.gov/rules/reg/reg11/r1113.pdf>.
- B. Field Sample: When and as directed by the Architect, apply one complete coating system for each color, gloss and texture required. When approved, the sample panel areas will be deemed incorporated into the Work and will serve as the standards by which the subsequent Work of this Section will be judged.

1.04 DELIVERY, STORAGE, AND HANDLING:

- A. Storage and Protection: Use all means necessary to protect the materials of this Section before, during, and after installation.
- B. Deliver materials to job site in new, original, and unopened containers bearing manufacturer's name and trade name. Store where directed in accordance with manufacturer's instructions.

1.05 PROJECT CONDITIONS:

- A. Do not apply exterior materials during fog, rain or mist, or when inclement weather is expected within the dry time specified by the manufacturer. No exterior or interior painting shall be done until the surfaces are thoroughly dry and cured. Do not apply paint when temperature is below 50^o F. Avoid painting surfaces when exposed to direct sunlight.

PART 2 - PRODUCTS

2.01 MANUFACTURERS:

- A. Manufacturer's catalog names and number of paint types in this Section herein are based on products manufactured or distributed by the Dunn-Edwards Corporation www.dunnedwards.com and are the basis of design against which the Architect will judge equivalency. The quantity of titanium dioxide, the use of clays, aluminum silicate, talc and the purity of acrylic materials are a few of the criteria which will be used by the Architect in determining equivalency of materials.
- B. Substitutions: Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 Product Requirements. When submitting request for substitution, provide complete product data specified above under Submittals, for each substitute product.

- C. Acceptable Manufacturers
 - 1. Carboline www.carboline.com
 - 2. Deft www.deftfinishes.com
 - 3. Dumond Chemicals www.dumondchemicals.com
 - 4. Okon www.okoninc.com
 - 5. Rustoleum www.rustoleumibg.com
 - 6. Valspar www.valsparwood.com

2.02 MATERIALS:

- A. Paints: Provide ready-mixed, except field catalyzed coatings. Pigments shall be fully ground maintaining soft paste consistency, capable of being readily and uniformly dispersed to complete homogeneous mixture. Paints shall have good flowing and brushing properties and be capable of drying or curing free of streaks and sags.
- B. Accessory Materials: Linseed oil, shellac, solvents, and other materials not specified but required to achieve required finishes shall be of high quality and approved by manufacturer.
- C. Colors shall be selected from color chip samples provided by manufacturer of paint system approved for use. Match approved samples for color, texture and coverage.
- D. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
- E. Restricted Components: Paints and coatings shall not contain any of the following.
 - 1. Acrolein.
 - 2. Acrylonitrile.
 - 3. Antimony.
 - 4. Benzene.
 - 5. Butyl benzyl phthalate.
 - 6. Cadmium.
 - 7. Di (2-ethylhexyl) phthalate.
 - 8. Di-n-butyl phthalate.
 - 9. Di-n-octyl phthalate.
 - 10. 1,2-dichlorobenzene.
 - 11. Diethyl phthalate.
 - 12. Dimethyl phthalate.
 - 13. Ethylbenzene.
 - 14. Ethylene Glycol.
 - 15. Formaldehyde.
 - 16. Hexavalent chromium.
 - 17. Isophorone.
 - 18. Lead.
 - 19. Mercury.
 - 20. Methyl ethyl ketone.
 - 21. Methyl isobutyl ketone.
 - 22. Methylene chloride.
 - 23. Naphthalene.
 - 24. Toluene (methylbenzene).
 - 25. 1,1,1-trichloroethane.
 - 26. Vinyl chloride.

2.04 MIXES:

- A. Mix, prepare, and store painting and finishing materials in accordance with manufacturer's directions.

PART 3 - EXECUTION

3.01 EXAMINATION:

- A. Examine surfaces to be painted before beginning painting work. Work of other trades that has been left or installed in a condition not suitable to receive paint, stain other specified finish shall be repaired or corrected by the applicable trade before painting. Painting of defective or unsuitable surface implies acceptance of the surfaces.
- B. Beware of a condition known as critical lighting. This condition causes shadows that accentuate even the slightest surface variations. A pigmented sealer will provide tooth for succeeding decorative coating, but "does not" equalize smoothness or surface texture. Any corrective action to drywall must be done by the drywall contractor prior to decorating.

3.02 PROTECTION:

- A. Protect previously installed work and materials, which may be affected by Work of this Section.
 - 1. Protect prefinished surfaces, lawns, shrubbery and adjacent surfaces against paint and damage.
 - 2. Furnish sufficient drop cloths, shields, and protective equipment to prevent spray or splatter from fouling surfaces not being painted.
 - 3. Protect surfaces, equipment, and fixtures from damage resulting from use of fixed, movable and hanging scaffolding, planking, and staging.
- B. Provide wet paint signs, barricades, and other devices required to protect newly finished surfaces. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

3.03 PREPARATION:

- A. Perform preparation and cleaning procedures in strict accordance with coating manufacturer's instructions for each substrate condition.
- B. Concrete and Masonry: Surfaces shall be dry, clean, and free of dirt, efflorescence, encrustation, and other foreign matter. Glazed surfaces on concrete shall be roughened or etched to uniform texture.
- C. Ferrous Metal: Clean oil, grease, and foreign matter with solvent. Surface shall be primed within 3 hours after preparation.
- D. Sand and scrape metal to remove loose primer and rust.
- E. Non-Ferrous Metal: Chemically or solvent clean and then treat with an etching-type solution if recommended by the finish manufacturer. Cleaned and retreated Non-Ferrous Metal shall be primed the same day that cleaning has been performed.

- F. Wood Surfaces: Remove dust, grit and foreign matter. Sand surfaces and dust clean. Spot coat knots, pitch streaks, and sappy section with pigmented stain sealer when surfaces are to be painted. Fill nail holes, cracks and other defects after priming and spot prime repairs when fully cured.
- G. Remove hardware and accessories, machined surfaces, plates, lighting fixtures and similar items in place and not-to-be-finish painted, or provide surface-applied protection. Reinstall removed items upon completion of work in each area.
- H. Existing surfaces to be recoated shall be thoroughly cleaned and deglossed by sanding or other means prior to painting. Patched and bare areas shall be spot primed with same primer as specified for new work.
- I. Thoroughly backpaint all surfaces of exterior and interior finish lumber and millwork, including doors and window frames, trim, cabinetwork, etc., which will be concealed after installation. Backpaint items to be painted or enameled with the priming coat. Use a clear sealer for backpriming where transparent finish is required.

3.03 PREPARATION:

- J. Bare and covered pipes, ducts, hangers, exposed steel and ironwork, and primed metal surfaces of equipment installed under mechanical and electrical work shall be cleaned prior to priming.
- K. Preparation of other surfaces shall be performed following specific recommendations of the coatings manufacturer.
- L. Bond breakers and curing agents shall be removed and the surface cleaned before primers, sealers or finish paints can be applied.
- M. All drywall surfaces shall be completely dry and dust free before painting. Skim coated drywall shall be sealed with a sealer recommended by the paint manufacturer for this surface. Use the appropriate light or medium tack masking tape.

3.04 APPLICATION:

- A. Apply painting and finishing materials in accordance with the manufacturer's recommendations.
 - 1. The number of coats specified is the minimum that shall be applied. Apply additional coats when undercoats, stains or other conditions show through final paint coat, until paint film is of uniform finish, color and appearance.
- B. Apply each material at not less than the manufacturer's recommended spreading rate:
- C. Apply prime coat to surface which is required to be painted or finished.
- D. Finish exterior doors on tops, bottoms, and edges same as exterior faces, after fitting.
- E. Sand lightly and dust clean between succeeding coats.

3.05 CLEANING, TOUCH-UP AND REFINISHING:

- A. Carefully remove all spattering, spots and blemishes caused by work under this section from surfaces throughout the project.

- B. Upon completion of painting work remove all rubbish, paint cans, and accumulated materials resulting from work in each space or room. All areas shall be left in a clean, orderly condition.
- C. Runs, sags, misses, holidays, stains and other defects in the painted surfaces, including inadequate coverage and mil thickness shall be satisfactorily touched up, or refinished, or repainted as necessary.

3.06 FINISH SCHEDULE

- A. Apply the following finishes to the surfaces specified on the finish schedule or on the drawings. Apply all materials in accordance with manufacturer's instructions on properly prepared surfaces and foundation coats. All intermediate undercoats must be tinted to approximate the final color.
 - 1. Architect will issue a color schedule prior to start of painting to designate the various colors and locations required for the work.

B. Exterior Systems:

1. Masonry Concrete Tilt-up

a. Flat - 100% Acrylic

- First Coat EFF-STOP Select Masonry Primer/Sealer (ESSL00)
- Second Coat SPARTASHIELD Exterior Flat Paint (SSHL10)
- Third Coat SPARTASHIELD Exterior Flat Paint (SSHL10)

b. Velvet - 100% Acrylic

- First Coat EFF-STOP Select Masonry Primer/Sealer (ESSL00)
- Second Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)
- Third Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)

c. Eggshell - 100% Acrylic

- First Coat EFF-STOP Select Masonry Primer/Sealer (ESSL00)
- Second Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)
- Third Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)

e. Low Sheen - 100% Acrylic

- First Coat Eff-Stop Select Masonry Primer/Sealer (ESSL00)
- Second Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)
- Third Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)

f. Semi-Gloss or Gloss - 100 % Acrylic

- First Coat Eff-Stop Select Masonry Primer/Sealer (ESSL00)
- Second Coat SPARTASHIELD, Exterior Semi-Gloss or Gloss Paint (SSHL50)
or (SSHL60)
- Third Coat SPARTASHIELD, Exterior Semi-Gloss or Gloss Paint (SSHL50)
or (SSHL60)

2. Masonry and Stucco

a. Flat – Modified Copolymer / 100% Acrylic

First Coat FLEX-PRIME Select, Flexible Crack-Resistant Primer (FPSL00)
Second Coat SPARTASHIELD Exterior Flat Paint (SSHL10)
Third Coat SPARTASHIELD Exterior Flat Paint (SSHL10)

b. Velvet Sheen - Modified Copolymer / 100% Acrylic

First Coat FLEX-PRIME Select, Flexible Crack-Resistant Primer (FPSL00)
Second Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)
Third Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)

c. Eggshell - Modified Copolymer / 100% Acrylic

First Coat FLEX-PRIME Select, Flexible Crack-Resistant Primer (FPSL00)
Second Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)
Third Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)

d. Low Sheen – Modified Copolymer / 100% Acrylic

First Coat FLEX-PRIME Select, Flexible Crack-Resistant Primer (FPSL00)
Second Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)
Third Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)

e. Semi-Gloss or Gloss – Modified Copolymer / 100% Acrylic

First Coat FLEX-PRIME Select, Flexible Crack-Resistant Primer (FPSL00)
Second Coat SPARTASHIELD, Exterior Semi-Gloss or Gloss Paint (SSHL50)
or (SSHL60)
Third Coat SPARTASHIELD, Exterior Semi-Gloss or Gloss Paint (SSHL50)
or (SSHL60)

f. Elastomeric - Modified Acrylic

First Coat ELAST-O-KOTE Surface Conditioner
Second Coat ELAST-O-KOTE 5, High Build Elastomeric Waterproofing
Third Coat ELAST-O-KOTE 5, High Build Elastomeric Waterproofing

g. Graffiti Barrier - Unpainted Surface - Waterborne Urethane/Waterborne Polyurethane

First Coat DUMOND CHEMICAL, WATCH DOG CPU, Masonry
Primer/Sealer
Second Coat DUMOND CHEMICAL, WATCH DOG CPU-747, Polyurethane

h. Graffiti Barrier - Painted Surface - Waterborne Polyurethane

One Coat DUMOND CHEMICAL, WATCH DOG CPU-747, Polyurethane

3. Exterior Gypsum Board

a. Flat – 100% Acrylic

First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SPARTASHIELD Exterior Flat Paint (SSHL10)
Third Coat SPARTASHIELD Exterior Flat Paint (SSHL10)

b. Velvet Sheen – 100% Acrylic

First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)
Third Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)

c. Eggshell – 100% Acrylic

First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)
Third Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)

d. Low Sheen – 100% Acrylic

First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)
Third Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)

e. Semi-Gloss or Gloss – 100% Acrylic

First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SPARTASHIELD, Exterior Semi-Gloss or Gloss Paint (SSHL50) or (SSHL60)
Third Coat SPARTASHIELD, Exterior Semi-Gloss or Gloss Paint (SSHL50) or (SSHL60)

4. Concrete Block – CMU

a. Flat –Acrylic Copolymer / 100% Acrylic

First Coat SMOOTH BLOCFIL SELECT
CONCRETE BLOCK FILLER (SBSL00)
Second Coat SPARTASHIELD Exterior Flat Paint (SSHL10)
Third Coat SPARTASHIELD Exterior Flat Paint (SSHL10)

b. Velvet - Acrylic Copolymer / Acrylic

First Coat SMOOTH BLOCFIL SELECT
CONCRETE BLOCK FILLER (SBSL00)
Second Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)
Third Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)

c. Eggshell - Acrylic Copolymer / Acrylic

First Coat SMOOTH BLOCFIL SELECT
CONCRETE BLOCK FILLER (SBSL00)
Second Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)
Third Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)

d. Low Sheen – Acrylic Copolymer / Acrylic

First Coat SMOOTH BLOCFIL SELECT
CONCRETE BLOCK FILLER (SBSL00)
Second Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)
Third Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)

e. Semi-Gloss or Gloss – Acrylic Copolymer / Acrylic

First Coat SMOOTH BLOCFIL SELECT
CONCRETE BLOCK FILLER (SBSL00)
Second Coat SPARTASHIELD, Exterior Semi-
Gloss or Gloss Paint (SSHL50) or (SSHL60)
Third Coat SPARTASHIELD, Exterior Semi-Gloss or
Gloss Paint (SSHL50) or (SSHL60)

f. Graffiti Barrier - Unpainted Surface - Waterborne Urethane/Waterborne Polyurethane

First Coat DUMOND CHEMICAL, WATCH DOG
CPU, Masonry Primer/Sealer
Second Coat DUMOND CHEMICAL, WATCH
DOG CPU-747, Polyurethane 09 90 00-9

g. Graffiti Barrier - Painted Surface - Waterborne Polyurethane

One Coat DUMOND CHEMICAL, WATCH DOG CPU-747, Polyurethane

5. Wood – Paint Finish

a. Flat – 100% Acrylic

First Coat EZ-PRIME Premium, Exterior Wood Primer (EZPR00)
Second Coat SPARTASHIELD Exterior Flat Paint (SSHL10)
Third Coat SPARTASHIELD Exterior Flat Paint (SSHL10)

b. Velvet - 100% Acrylic

First Coat EZ-PRIME Premium, Exterior Wood Primer (EZPR00)
Second Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)
Third Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)

c. Eggshell - 100% Acrylic

First Coat EZ-PRIME Premium, Exterior Wood Primer (EZPR00)
Second Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)
Third Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)

d. Low Sheen – 100% Acrylic

First Coat EZ-PRIME Premium, Exterior Wood Primer (EZPR00)
Second Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)
Third Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)

e. Semi-Gloss or Gloss – 100% Acrylic

First Coat EZ-PRIME Premium, Exterior Wood Primer (EZPR00)
Second Coat SPARTASHIELD, Exterior Semi-Gloss or Gloss Paint (SSHL50) or (SSHL60)
Third Coat SPARTASHIELD, Exterior Semi-Gloss or Gloss Paint (SSHL50) or (SSHL60)

f. Graffiti Barrier - Painted Surface - Waterborne Urethane/Waterborne Polyurethane

One Coat DUMOND CHEMICAL, WATCH DOG CPU-747, Polyurethane

6. Wood Rough Sawn – Stain Finish – Opaque:

Two Coats SPARTASHIELD Exterior Flat Paint (SSHL10)

7. Wood – Stain Finish – Semi-Transparent:

Two Coats OKON WEATHER PRO, 100% Acrylic
Semi-Transparent Stain (WPT3)

8. Ferrous Metal

a. Flat – Alkyd Emulsion / 100% Acrylic

First Coat BLOC-RUST Premium, Rust Preventative
Metal Primer (BRPR00-1 series)
Second Coat SPARTASHIELD Exterior Flat Paint (SSHL10)
Third Coat SPARTASHIELD Exterior Flat Paint (SSHL10)

b. Velvet – Alkyd Emulsion / 100% Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer
(BRPR00-1 series)
Second Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)
Third Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)

c. Eggshell – Alkyd Emulsion / 100% Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer
(BRPR00-1 series)
Second Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)
Third Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)

d. Low Sheen - Alkyd Emulsion / 100% Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer
(BRPR00-1 series)
Second Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)

Third Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)

e. Semi-Gloss – Alkyd Emulsion / 100% Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer
(BRPR00-1 series)

Second Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Semi-Gloss Paint
(W-9)

Third Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Semi-Gloss Paint
(W-9)

B. Exterior Systems: (Continued)

8. Ferrous Metal (Continued)

f. Semi-Gloss – Modified Aluminum Epoxy Mastic / Aliphatic Acrylic Polyurethane

First Coat CARBOLINE, CARBOMASTIC, Epoxy 15

Second Coat CARBOLINE, CARBOTHANE, Acrylic Polyurethane 133 Series

Third Coat CARBOLINE, CARBOTHANE, Acrylic Polyurethane 133 Series

g. Gloss – Alkyd Emulsion / 100% Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer
(BRPR00-1 series)

Second Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Gloss Paint
(W-10)

Third Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Gloss Paint
(W-10)

h. Gloss - Modified Aluminum Epoxy Mastic / Aliphatic Acrylic Polyurethane

First Coat CARBOLINE, CARBOMASTIC, Epoxy 15

Second Coat CARBOLINE, CARBOTHANE, Acrylic Polyurethane 134 Series

Third Coat CARBOLINE, CARBOTHANE, Acrylic Polyurethane 134 Series

i. Graffiti Barrier - Painted Surface - Waterborne Urethane/Waterborne Polyurethane

One Coat DUMOND CHEMICAL, WATCH DOG CPU-747, Polyurethane

9. Non-Ferrous Metal

a. Flat – Alkyd / 100% Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)

First Coat GALV-ALUM Premium, Non Ferrous Metal Primer (GAPR00)

Second Coat SPARTASHIELD Exterior Flat Paint (SSHL10)

Third Coat SPARTASHIELD Exterior Flat Paint (SSHL10)

b. Velvet Sheen - Alkyd / 100% Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)

First Coat GALV-ALUM Premium, Non Ferrous Metal Primer (GAPR00)
Second Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)
Third Coat SPARTASHIELD Exterior Velvet Paint (SSHL20)

c. Eggshell - Alkyd / 100% Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat GALV-ALUM Premium, Non Ferrous Metal Primer (GAPR00)
Second Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)
Third Coat SPARTASHIELD, Exterior Eggshell Paint (SSHL30)

d. **Low Sheen - Alkyd / 100% Acrylic** (Existing Exterior/Site Metals)

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat GALV-ALUM Premium, Non Ferrous Metal Primer (GAPR00)
Second Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)
Third Coat SPARTASHIELD, Exterior Low Sheen Paint (SSHL40)

e. **Semi-Gloss – Alkyd / 100% Acrylic** (Exterior Metal Doors, factory primed)

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat GALV-ALUM Premium, Non Ferrous Metal Primer (GAPR00)
Second Coat SYN-LUSTRO, Rust Preventive
100% Acrylic Semi-Gloss Paint (W-9)
Third Coat SYN-LUSTRO, Rust Preventive 100%
Acrylic Semi-Gloss Paint (W-9)

f. Semi-Gloss – Modified Aluminum Epoxy Mastic / Aliphatic Polyurethane

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat CARBOLINE, CORBOMASTIC EPOXY 15
Second Coat CARBOLINE, CARBOTHANE, Acrylic Polyurethane 133 Series
Third Coat CARBOLINE, CARBOTHANE, Acrylic Polyurethane 133 Series

g. Gloss – Alkyd / 100%Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat GALV-ALUM Premium, Non Ferrous Metal Primer (GAPR00)
Second Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Gloss Paint (W10)
Third Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Gloss Paint (W10)

h. Gloss - Modified Aluminum Epoxy Mastic Aliphatic Polyurethane

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat CARBOLINE, CARBOLINE, CORBOMASTIC EPOXY 15
Second Coat CARBOLINE, CARBOTHANE, Acrylic Polyurethane 134 Series
Third Coat CARBOLINE, CARBOTHANE, Acrylic Polyurethane 134 Series

i. Graffiti Barrier - Painted Surface - Waterborne Urethane/Waterborne Polyurethane

One Coat DUMOND CHEMICAL, WATCH DOG CPU-747, Polyurethane

C. Interior Systems:

1. Gypsum Board

a. Flat - Acrylic Copolymer

First Coat VINYLASTIC Select, Interior Wall Sealer (VNSL00)
Second Coat SPARTAWALL, Interior Flat Paint (SWLL10)
Third Coat SPARTAWALL, Interior Flat Paint (SWLL10)

b. Velvet Sheen – Acrylic Copolymer

First Coat VINYLASTIC Select, Interior Wall Sealer (VNSL00)
Second Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)
Third Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)

c. Eggshell – Acrylic Copolymer / Acrylic

First Coat VINYLASTIC Select, Interior Wall Sealer (VNSL00)
Second Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)
Third Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)

d Low Sheen - Acrylic Copolymer / Acrylic

First Coat VINYLASTIC Select, Interior Wall Sealer (VNSL00)
Second Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)
Third Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)

**e. Semi-Gloss or Gloss – Acrylic Copolymer / Acrylic or 100% Acrylic
(Toilet Rooms)**

First Coat VINYLASTIC Select, Interior Wall Sealer (VNSL00)
Second Coat SPARTAWALL, Interior Semi-Gloss or Gloss Paint (SWLL50 or

SSHL60)

Third Coat SPARTAWALL, Interior Semi-Gloss or
Gloss Paint (SWLL50 or SSLH60)

f. Gloss - Waterborne Acrylic / Cycloaliphatic Amine Epoxy

First Coat CARBOLINE, CARBOCRYLIC,
Waterborne Acrylic Bonding Primer 120
Second Coat CARBOLINE, CARBOGUARD, Epoxy 890
Third Coat CARBOLINE, CARBOGUARD, Epoxy 890

g. Flat - Zero VOC / Modified Copolymer

First Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Primer (W600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Interior
Latex Flat Paint (W601)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex
Flat Paint (W601)

h. Low Sheen - Zero VOC / Modified Copolymer

First Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Primer (W600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Low Sheen Paint (W 602)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Low Sheen Paint (W 602)

i. Semi-Gloss - Zero VOC / Modified Copolymer / 100% Acrylic

First Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Primer (W600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Semi-Gloss (W 603)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Semi-Gloss (W 603)

j. Gloss - Zero VOC / Acrylic / Epoxy

First Coat RUSTOLEUM, SIERRA GRIPTEC, Multi-Surface Primer S30
Second Coat RUSTOLEUM, SIERRA, Industrial Epoxy Enamel S60
Third Coat RUSTOLEUM, SIERRA, Industrial Epoxy Enamel S60

2. Masonry Concrete Tilt-up / Plaster

a. Flat – 100% Acrylic / Acrylic Copolymer

First Coat EFF-STOP Select Masonry Primer/Sealer (ESSL00)
Second Coat SPARTAWALL, Interior Flat Paint (SWLL10)
Third Coat SPARTAWALL, Interior Flat Paint (SWLL10)

b. Velvet Sheen – 100% Acrylic / Acrylic

First Coat EFF-STOP Select Masonry Primer/Sealer (ESSL00)
Second Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)
Third Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)

c. Eggshell – 100% Acrylic / Acrylic

First Coat EFF-STOP Select Masonry Primer/Sealer (ESSL00)
Second Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)
Third Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)

d. Low Sheen – 100% Acrylic / Acrylic

First Coat EFF-STOP Select Masonry Primer/Sealer (ESSL00)
Second Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)
Third Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)

e. Semi-Gloss or Gloss – 100% Acrylic / Acrylic or 100% Acrylic

First Coat EFF-STOP Select Masonry Primer/Sealer (ESSL00)
Second Coat SPARTAWALL, Interior Semi-Gloss or Gloss Paint (SWLL50 or

SSHL60)

Third Coat SPARTAWALL, Interior Semi-Gloss or Gloss Paint (SWLL50 or SSSL60)

f. Gloss - Waterborne Acrylic / Cycloaliphatic Epoxy

First Coat CARBOLINE, CARBOCRYLIC,
Waterborne Acrylic Bonding Primer 120
Second Coat CARBOLINE, CARBOGUARD, Epoxy 890
Third Coat CARBOLINE, CARBOGUARD, Epoxy 890

g. Flat - Zero VOC / Modified Copolymer

First Coat ECOSHIELD, Low-Order/Zero VOC Int.Latex Primer (W600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Flat Paint (W 601)
Third Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Flat Paint (W 601)

h. Low Sheen - Zero VOC / Modified Copolymer

First Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Primer (W 600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex
Low Sheen Paint (W 602)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex
Low Sheen Paint (W 602)

i. Semi-Gloss - Zero VOC / Modified Copolymer / 100% Acrylic

First Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Primer (W600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Interior
Latex Semi-Gloss (W 603)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex
Semi-Gloss (W 603)

j. Gloss - Zero VOC / Acrylic / Epoxy

First Coat RUSTOLEUM, SIERRA GRIPTEC, Multi-Surface Primer S-30
Second Coat RUSTOLEUM, SIERRA, Industrial Epoxy Gloss Enamel S60
Third Coat RUSTOLEUM, SIERRA, Industrial Epoxy Gloss Enamel S60

3. Concrete Block – CMU

a. Flat – Modified Copolymer / Acrylic Copolymer

First Coat SMOOTH BLOCFIL SELECT CONCRETE BLOCK FILLER
(SBSL00)
Second Coat SPARTAWALL, Interior Flat Paint (SWLL10)
Third Coat SPARTAWALL, Interior Flat Paint (SWLL10)

b. Velvet Sheen – Modified Copolymer / Acrylic Copolymer

First Coat SMOOTH BLOCFIL SELECT
CONCRETE BLOCK FILLER (SBSL00)
Second Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)
Third Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)

c. Eggshell – Modified Copolymer / Acrylic

First Coat SMOOTH BLOCFIL SELECT CONCRETE BLOCK FILLER
(SBSL00)

Second Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)
Third Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)

d. Low Sheen – Modified Copolymer / Acrylic

First Coat SMOOTH BLOCFIL SELECT CONCRETE BLOCK FILLER
(SBSL00)
Second Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)
Third Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)

e. Semi-Gloss or Gloss – Modified Copolymer / Acrylic

First Coat SMOOTH BLOCFIL SELECT CONCRETE BLOCK FILLER
(SBSL00)
Second Coat SPARTAWALL, Interior Semi-Gloss or Gloss Paint (SWLL50 or
SSHL60)
Third Coat SPARTAWALL, Interior Semi-Gloss
or Gloss Paint (SWLL50 or SSSL60)

f. Gloss - Waterborne Acrylic / Cycloaliphatic Amine Epoxy

First Coat CARBOLINE, SANTILE Waterborne Acrylic Block Filler 100
Second Coat CARBOLINE, CARBOGUARD, Epoxy 890
Third Coat CARBOLINE, CARBOGUARD, Epoxy 890

g. Flat - Zero VOC - Finish Coat / Modified Copolymer

First Coat SMOOTH BLOCFIL SELECT CONCRETE BLOCK
FILLER
(SBSL00)
Second Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Flat Paint (W 601)
Third Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Flat Paint (W 601)

h. Low Sheen - Zero VOC - Finish Coat / Modified Copolymer

First Coat SMOOTH BLOCFIL SELECT CONCRETE BLOCK
FILLER (SBSL00)
Second Coat ECOSHIELD, Low-Order/Zero VOC Interior
Latex Low Sheen Paint (W 602)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Low Sheen
Paint (W 602)

i. Semi-Gloss - Zero VOC - Finish Coat / Modified Copolymer / 100% Acrylic

First Coat SMOOTH BLOCFIL SELECT CONCRETE BLOCK
FILLER (SBSL00)
Second Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Low Sheen Paint (W
603)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Low Sheen Paint (W
603)

4. Wood – Paint Finish

a. Flat – 100% Acrylic / Acrylic Copolymer

First Coat INTER-KOTE, Interior Undercoater (W 6325)
Second Coat SPARTAWALL, Interior Flat Paint (SWLL10)
Third Coat SPARTAWALL, Interior Flat Paint (SWLL10)

b. Velvet Sheen – 100% Acrylic / Acrylic Copolymer

First Coat INTER-KOTE, Interior Undercoater (W 6325)
Second Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)
Third Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)

c. Eggshell – 100% Acrylic / Acrylic (Interior Wood Doors, factory primed)

First Coat INTER-KOTE, Interior Undercoater (W 6325)
Second Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)
Third Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)

d. Low Sheen – 100% Acrylic / Acrylic

First Coat INTER-KOTE, Interior Undercoater (W 6325)
Second Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)
Third Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)

e. Semi-Gloss or Gloss – 100 %Acrylic / Acrylic

First Coat INTER-KOTE, Interior Undercoater (W 6325)
Second Coat SPARTAWALL, Interior Semi-Gloss or Gloss Paint (SWLL50 or SSSL60)
Third Coat SPARTAWALL, Interior Semi-Gloss or Gloss Paint (SWLL50 or SSSL60)

f. Flat - Zero VOC / Modified Copolymer

First Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Primer (W600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Flat Paint (W601)
Third Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Flat Paint (W 601)

g. Low Sheen - Zero VOC / Modified Copolymer

First Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Primer (W 600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Low Sheen Paint (W 602)
Third Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Low Sheen Paint (W 602)

h. Semi-Gloss - Zero VOC / Modified Copolymer / 100% Acrylic

First Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Primer (W600)
Second Coat ECOSHIELD, Low-Order/Zero VOC Int. Latex Semi-Gloss (W 603)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Semi-Gloss (W 603)

5. Wood – Stain & Clear Finishes

a. Satin – Alkyd / Alkyd Polyurethane

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat DEFTHANE, Polyurethane Clear Satin
Second Coat DEFTHANE, Polyurethane Clear Satin
Third Coat DEFTHANE, Polyurethane Clear Satin

b. Semi-Gloss – Alkyd / Alkyd Polyurethane

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat DEFTHANE, Polyurethane Clear Semi-Gloss
Second Coat DEFTHANE, Polyurethane Clear Semi-Gloss
Third Coat DEFTHANE, Polyurethane Clear Satin

c. Gloss – Alkyd / Alkyd Polyurethane

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat DEFTHANE, Polyurethane Clear Gloss
Second Coat DEFTHANE, Polyurethane Clear Gloss
Third Coat DEFTHANE, Polyurethane Clear Satin

d. Satin – Alkyd / Acrylic Polyurethane

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat CABOT, Water-Borne Polyurethane (8082)
Second Coat CABOT, Water-Borne Polyurethane (8082)
Third Coat CABOT, Water-Borne Polyurethane (8082)

e. Semi-Gloss – Alkyd / Acrylic Polyurethane

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat CABOT, Water-Borne Polyurethane (8087)
Second Coat CABOT, Water-Borne Polyurethane (8087)
Third Coat CABOT, Water-Borne Polyurethane (8087)

f. Gloss – Alkyd / Acrylic Polyurethane

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat CABOT, Water-Borne Polyurethane (8080)
Second Coat CABOT, Water-Borne Polyurethane (8080)
Third Coat CABOT, Water-Borne Polyurethane (8080)

g. Eggshell – Alkyd / Lacquer

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat CONTRACTOR'S EDGE, Production Sanding Sealer
(CE-PROSS)
Second Coat CONTRACTOR'S EDGE, Production Clear Lacquer
(CE-PRO 20)
Third Coat CONTRACTOR'S EDGE, Production Clear Lacquer
(CE-PRO 20)

h. Semi-Gloss – Alkyd / Lacquer

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat CONTRACTOR'S EDGE, Production Sanding Sealer
(CE-PROSS)
Second Coat CONTRACTOR'S EDGE, Production Clear Lacquer
(CE-PRO60)
Third Coat CONTRACTOR'S EDGE, Production Clear Lacquer
(CE-PRO60)

i. Gloss – Alkyd / Lacquer

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat CONTRACTOR'S EDGE, Sanding Sealer (CE- PROSS)
Second Coat CONTRACTOR'S EDGE, Production Clear Lacquer
(CE-PRO90)
Third Coat CONTRACTOR'S EDGE, Production Clear Lacquer
(CE-PRO90)

j. Low Sheen – Alkyd / Water White Lacquer

Stain STAINSEAL (V-QYB or V-QYR Series) Interior Wiping Oil Stain
First Coat CONTRACTOR'S EDGE, Water White Sanding Sealer
(CE-WWSS)
Second Coat CONTRACTOR'S EDGE, Water White Clear Lacquer
(CE-WW10)
Third Coat CONTRACTOR'S EDGE, Water White Clear Lacquer
(CE-WW10)

6. Ferrous Metal

a. Flat – Alkyd Emulsion / Acrylic Copolymer

First Coat BLOC-RUST Premium, Rust Preventative Metal
Primer (BRPR00-1 series)
Second Coat SPARTAWALL, Interior Flat Paint (SWLL10)
Third Coat SPARTAWALL, Interior Flat Paint (SWLL10)

b. Velvet Sheen – Alkyd Emulsion / Acrylic Copolymer

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer
(BRPR00-1 series)
Second Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)
Third Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)

c. Eggshell Sheen - Alkyd Emulsion / Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer
(BRPR00-1 series)
Second Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)
Third Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)

d. Low Sheen– Alkyd Emulsion / Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal
Primer (BRPR00-1 series)
Second Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)

Third Coat SPARTAWALL, Interior Low Sheen Paint (SWLL40)

e. Semi-Gloss or Gloss – Alkyd Emulsion / Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer (BRPR00-1 series)

Second Coat SPARTAWALL, Interior Semi-Gloss or Gloss Paint (SWLL50 or SSSL60)

Third Coat SPARTAWALL, Interior Semi-Gloss or Gloss Paint (SWLL50 or SSSL60)

f. Semi-Gloss – Alkyd Emulsion / 100% Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer (BRPR00-1 series)

Second Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Semi-Gloss Paint (W-9)

Third Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Semi-Gloss Paint (W-9)

g. Gloss – Alkyd Emulsion / 100% Acrylic

First Coat BLOC-RUST Premium, Rust Preventative Metal Primer (BRPR00-1 series)

Second Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Gloss Paint (W-10)

Third Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Semi-Gloss Paint (W-10)

h. Flat – Zero VOC / Acrylic Urethane / Modified Copolymer

First Coat RUSTOLEUM, METALMAX, DTM Acrylic Urethane Enamel S37

Second Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Flat (W 601)

Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Flat (W 601)

i. Low Sheen – Zero VOC / Acrylic Urethane / Modified Copolymer

First Coat RUSTOLEUM, METALMAX, DTM Acrylic Urethane Enamel S37

Second Coat ECOSHIELD, Low-Odor/Zero VOC Interior Latex Low Sheen Paint (W 602)

Third Coat ECOSHIELD, Low-Odor/Zero VOC Interior Latex Low Sheen Paint (W 602)

j. Semi-Gloss – Zero VOC /Acrylic Urethane /100% Acrylic

First Coat RUSTOLEUM, METALMAX, DTM Acrylic Urethane Enamel S37

Second Coat ECOSHIELD, Low-Odor/Zero VOC Interior Latex Semi-Gloss Paint (W 603)

Third Coat ECOSHIELD, Low-Odor/Zero VOC Interior Latex Semi-Gloss Paint (W 603)

l. **Low sheen Interior** (metal deck9s0, Exposed ducts, exposed beams and columns)

First Coat: Ultrashield DTM Gray primer

Second Coat DE ULMS00

Third Coat DE Ultrashield ULSH40

6. Non Ferrous Metal

a. Flat – 100% Acrylic / Acrylic Copolymer

(UGPR00-1)
Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat ULTRA-GRIP Premium, Multi Purpose Primer
Second Coat SPARTAWALL, Interior Flat Paint (SWLL10)
Third Coat SPARTAWALL, Interior Flat Paint (SWLL10)

b. Velvet Sheen – 100% Acrylic / Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)
Third Coat SPARTAWALL, Interior Velvet Sheen Paint (SWLL20)

c. Eggshell – 100% Acrylic / Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)
Third Coat SPARTAWALL, Interior Eggshell Sheen Paint (SWLL30)

d. Low Sheen – 100% Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SYN-LUSTRO, Rust Preventive
100% Acrylic Semi-Gloss Paint (W-9)
Third Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Semi-Gloss Paint
(W-9)

e. Semi-Gloss or Gloss – 100% Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat ULTRA-GRIP Premium, Multi Purpose Primer (UGPR00-1)
Second Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Gloss Paint
(W-10)
Third Coat SYN-LUSTRO, Rust Preventive 100% Acrylic Semi-Gloss Paint
(W-10)

f. Flat - Zero VOC / Acrylic Urethane / Modified Copolymer

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat RUSTOLUEM, METALMAX, DTM Acrylic Urethane Enamel S37
Second Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Flat (W 601)
Third Coat ECOSHIELD, Low-Order/Zero VOC Interior Latex Flat (W 601)

g. Low Sheen - Zero VOC / Acrylic Urethane /Modified Copolymer

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)

First Coat RUSTOLUEM, METALMAX, DTM Acrylic Urethane Enamel S37
Second Coat ECOSHIELD, Low-Odor/Zero VOC Interior Latex Low Sheen
Paint (W 602)
Third Coat ECOSHIELD, Low-Odor/Zero VOC Interior Latex Low Sheen
Paint (W 602)

h. Semi-Gloss - Zero VOC / Acrylic Urethane /100% Acrylic

Pretreatment SUPREME CHEMICAL, METAL CLEAN AND ETCH (ME 01)
First Coat RUSTOLUEM, METALMAX, DTM Acrylic Urethane Enamel S37
Second Coat ECOSHIELD, Low-Odor/Zero VOC Interior Latex Semi-Gloss
Paint (W 603)
Third Coat ECOSHIELD, Low-Odor/Zero VOC Interior Latex Semi-Gloss
Paint (W 603)

3.07 Specialty Painting and Coatings (Professional Line Products)

1. EXTERIOR ACRYLIC LOW VOC METALLIC FINISH WITH HP CLEAR COAT – GLOSS AS SELECTED

Primer: 1st coat: Rustoleum Sierra S 70 Epoxy Primer
Finish: 1st coat: Modern Masters Metallic Paint Collection – Color as Selected
Finish: 2nd coat: Modern Masters Metallic Paint Collection – Color as Selected
Finish: 3rd coat: Deft Industrial 36 Series Acrylic Polyurethane Clear Protective Topcoat

2. DUCTWORK/VENTS/MISC. METAL INCLUDING DECKING – EXTERIOR (at louvers adjacent to metal paneling at higher roof of Multi-purpose room)

Rustoleum Modern Masters Ext. Grade Metallc Architectural coating 274223 Bright silver
Primer Galv. Or Non-ferrous with Rustoleum Griptec primer/ prime metal max DTM

Note: Important to apply the Metallic over the S70 Primer within timeframes for adhesion – see data sheets / application guidelines

NOTICE

Availability of products listed in this specification may be affected by local, state, or federal regulatory requirements for architectural coatings. Consult your Dunn-Edwards representative for information on current product availability. Submittals prepared by Dunn-Edwards in accordance with this specification may include product codes that are modified with a letter suffix (e.g., W 901V or W 901E) to indicate the specific product formulation currently available to meet applicable requirements.

END OF SECTION

SECTION 10 11 00

MARKER BOARDS AND TACK BOARDS

PART 1 - GENERAL

1.01 SUMMARY

- A. Provide Marker boards, tack boards and Peg Boards where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

1.02 SUBMITTALS

- A. Comply with pertinent provisions of Section 01 33 00.
- B. Product data: Within 35 calendar days after the Contractor has received the Owner's Notice to Proceed, submit:
 - 1. Materials list of items proposed to be provided under this Section;
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements;
 - 3. Shop Drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this Section with the work of adjacent trades;
 - 4. Manufacturer's recommended installation procedures which, when approved by the Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.

1.03 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Comply with pertinent provisions of Section 01 66 00.

PART 2 - PRODUCTS

2.01 MARKERBOARDS, TACKBOARDS AND CABINETS

- A. Marker boards:
 - 1. Provide marker boards in the arrangements shown on the Drawings, and with the following attributes.
 - a. Factory-built units equal to Egan Visual, Inc. for surface installation.
 - b. Square corner aluminum frame with marker tray and Egan grip. Provide wood frame where indicated on the drawings.
 - c. Surface color to be selected.
 - d. Size: 8'-0" w. x 4'-0" h., unless noted otherwise on the Drawings.

- B. Tack boards:
 - 1. Provide tack boards in the dimensions and arrangements shown on the Drawings, and with the following attributes.
 - a. Factory-built units equal to Egan "A" series with vinyl earth tone fabrics.
 - b. At built-in cabinets, use cork board faced with vinyl earth tone fabrics.
 - c. Color to be selected.
- C. Acceptable manufacturer:
 - 1. Other manufacturers approved in advance by the Architect.

2.02 OTHER MATERIALS

- A. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 INSTALLATION

- A. Install the work of this Section in strict accordance with the original design, the approved Shop Drawings, and the manufacturer's recommended installation procedures as approved by the Architect, anchoring all components firmly into position for long life under hard use.

END OF SECTION

SECTION 10 44 13

FIRE EXTINGUISHERS CABINETS & ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire extinguishers.
- B. Fire blankets.
- C. Fire extinguisher cabinets.
- D. Accessories.

1.02 RELATED SECTIONS

- A. Section 09 22 16 - Metal Framing: Roughed-in wall openings.
- B. Section 09 90 00 - Paints and Coatings: Field paint finish.

1.03 REFERENCES

- A. NFPA 10 - Standard for Portable Fire Extinguishers; National Fire Protection Association; 2007.
- B. UL (FPED) - Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

1.04 PERFORMANCE REQUIREMENTS

- A. Conform to NFPA 10.
- B. Provide extinguishers classified and labeled by Underwriters Laboratories Inc. for the purpose specified and indicated.

1.05 SUBMITTALS

- A. See Section 01300 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate cabinet physical dimensions.
- C. Product Data: Provide extinguisher operational features.
- D. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- F. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.06 ENVIRONMENTAL REQUIREMENTS

- A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Extinguishers, Cabinets and Accessories:
 - 1. Potter-Roemer; Product: Recessed cabinet, Alta series: www.potterroemer.com.
 - 2. Equal product by JL Industries, Inc; www.jlindustries.com.
 - 3. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 FIRE EXTINGUISHERS

- A. Dry Chemical Type: Polyester-coated steel tank, with pressure gage # 3002 with UL rating of 1A:10B:C =
 - 1. Class 2A.
 - 2. Size 10.
 - 3. Size and classification as scheduled.
 - 4. Finish: Baked enamel.

2.03 FIRE EXTINGUISHER CABINETS

- A. Metal: Formed primed steel sheet; 0.036 inch (0.9 mm) thick base metal, # 7010 DV, factory primed, painted to match wall color. (General, unless noted below.)
- B. Cabinet Configuration: Recessed type.
 - 1. Sized to accommodate accessories.
 - 2. Exterior nominal dimensions of 10 inch wide x 25 inch high x 4 3/8 inch deep.
 - 3. Trimless type.
 - 4. Trim: Flat.
 - 5. Trim: Returned to wall surface, with 1/2 inch projection.
 - 6. Form cabinet enclosure with right angle inside corners and seams. Form perimeter trim and door stiles.
- C. Door: 0.036 inch (0.9 mm) thick, reinforced for flatness and rigidity; latch. Hinge doors for 180 degree opening with two butt hinge. Provide nylon catch.
- D. Door Glazing: Glass, clear, 1/8 inch (3 mm) thick float. Set in resilient channel gasket glazing.
- E. Door Glazing: Plastic, clear, 1/8 inch (3 mm) thick acrylic. Set in resilient channel gasket glazing.
- F. Cabinet Mounting Hardware: Appropriate to cabinet. Pre-drill for anchors.
- G. Weld, fill, and grind components smooth.
- H. Finish of Cabinet Exterior Trim and Door: Primed for field paint finish.
- I. Finish of Cabinet Interior: White enamel.

2.04 ACCESSORIES

- A. Fire Blanket: Fire retardant treated wool; red, 62 x 84 inch (1 575 x 2 135 mm) size.
- B. Extinguisher Brackets: Formed steel, chrome-plated.
- C. Extinguisher Theft Alarm: Battery operated alarm, 10 second delay for disarming, activated by opening cabinet door.
- D. Cabinet Signage: Vertical ascending (black).

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install cabinets plumb and level in wall openings, 24 inches from finished floor to inside bottom of cabinet.
- C. Secure rigidly in place.
- D. Place extinguishers and accessories in cabinets.
- E. Position cabinet signage at extinguisher door vertical in line with the view window.

3.03 SCHEDULES

- A. Furnish and Install 5 Fire Extinguisher Cabinets at location directed by the City during construction.
- B. Corridors: Multipurpose Chemical Type 4A:60B:C, 2 1/2 gallon (11 L) capacity, polished chrome finish, placed in 12 inch (300 mm) wide x 30 inch (760 mm) high x 10 inch (250 mm) deep recessed cabinet; locate 2 per department unless noted otherwise on the drawings.

END OF SECTION

SECTION 12 36 00

COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Countertops for architectural cabinetwork.
- B. Countertops for manufactured casework.
- C. Wall-hung counters and vanity tops.

1.02 RELATED SECTIONS

- A. Section 06 41 00 - Architectural Wood Casework
- B. Section 22 40 00 - Plumbing Fixtures: Sinks.

1.03 REFERENCES

- A. ANSI A161.2 - Performance Standards for Fabricated High Pressure Decorative Laminate Countertops; 1998.
- B. ANSI A208.1 - American National Standard for Particleboard; 1999.
- C. ANSI A208.2 - American National Standard for Medium Density Fiberboard for Interior Use; 2002.
- D. ANSI Z124.3 - American National Standard for Plastic Lavatories; 2005.
- E. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2003.
- F. ASTM D 635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position; 2003.
- G. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.
- H. AWI/WI/AWMAC – Architectural Woodwork Standards, Latest edition (AWS)
- I. ISSFA-2 - Classification and Standards for Solid Surfacing Material; International Solid Surface Fabricators Association; 2001 (2002)
- J. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.
- K. PS 1 - Construction and Industrial Plywood; 1995.

1.04 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. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections. Shop drawings to comply with AWS requirements.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.

- E. Verification Samples: For each finish product specified, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- F. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- G. Installation Instructions: Manufacturer's installation instructions and recommendations.
- H. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: Same fabricator as for cabinets on which tops are to be installed.
- B. Installer Qualifications: Fabricator.

1.06 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.

1.07 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 COUNTERTOP ASSEMBLIES

- A. Plastic Laminate Countertops: High pressure decorative laminate sheet bonded to substrate.
 1. Laminate Sheet, Unless Otherwise Indicated: NEMA LD 3 Grade HGP, for postforming, 0.039 inch (HGP, for postforming, 1.0 mm) nominal thickness.
 - a. Surface Burning Characteristics: Flame spread 200 (Class III), maximum, when tested in accordance with ASTM E 84.
 - b. NSF approved for food contact.
 - c. Wear Resistance: In addition to specified grade, comply with NEMA LD 3 High Wear Grade requirements for wear resistance.
 - d. Laminate Core Color: Same as decorative surface.
 - e. Finish: Matte or suede, gloss rating of 5 to 20.
 - f. Surface Color and Pattern: To be selected from manufacturer's standard line.
 - g. Manufacturers:
 - 1) Formica Corporation: www.formica.com.
 - 2) Nevamar Company: www.nevamar.com.
 - 3) Wilsonart International, Inc: www.wilsonart.com.
 - 4) Substitutions: See Section 01 60 00 - Product Requirements.
 2. Exposed Edge Treatment: Postformed laminate; front edge substrate built up to minimum 1-1/4 inch (32 mm) thick with raised radiused edge, integral covered backsplash with radiused top edge. At Laminate counter tops with sink(s).
 3. Exposed Edge Treatment: Square, substrate built up to minimum 1-1/4 inch (32 mm) thick; covered with matching laminate. At Laminate countertops without sink(s).
 4. Exposed Edge Treatment: Hardwood nosing as indicated on drawings, natural spar varnish finish; back and end splashes with square top covered with matching laminate.
 5. Back and End Splashes: Same material, same construction.
 6. Fabricate in accordance with AWI/WI/AWMAC Quality Standards Illustrated Premium Grade.

- B. Stone Countertops: Stone slabs bonded to substrate; use as large pieces as possible with inconspicuous adhesive joints.
 - 1. Stone: Cesar Stone Quartz Surface
 - 2. Color: To be selected.
 - 3. Stone Thickness: 3/4 inch, minimum.
 - 4. Surface Finish: Polished.
 - 5. Exposed Edge Treatment: Square profile stone, 1 inch (25 mm) thick, with 3/16 inch (5 mm) radius corner.
 - 6. Back and End Splashes: Same material, same thickness; for field attachment.
 - 7. Sealants: Per stone distributor's recommendation.

- C. Stainless Steel Countertops: ASTM A 666 Type 304 stainless steel sheet, 14-gauge thickness.
 - 1. Finish: 4 satin brushed finish.
 - 2. Edge and Backsplash Sink Details: As indicated on drawings.
 - 3. Exposed Edge Shape: Straight turndown with return; 1 ½ inch (38 mm) high face; ½ inch return to face of case.
 - 4. Exposed Edge Shape: Bullnose with return; 5/8 inch (16mm) radius, return to face of case; reinforced with steel.
 - 5. Exposed Edge Shape in Sink Areas: Marine edge with return; edge raised 3/16 inch (5 mm); above counter with 45 degree transition, minimum 1 inch flat rim; 1 ½ inch (38mm) high turndown; ½ inch (12mm) return to face of case; reinforced with steel.
 - 6. Back and End Splashes: Same material; welded ¼ inch (6 mm); ground smooth, finish to match adjacent surfaces; radius coved joint to countertop; square top edge with 1 inch (25 mm) wide top surface and minimum ½ inch (12 mm) turndown.
 - 7. Splash Dimensions: 4 inch (100 mm); 6 inch (150 mm) by 1 inch (25 mm) thick, unless otherwise indicated. Comply with NSF standard radiused requirements.
 - 8. Splash Depth Where Faucets are Mounted in Splash: 2 inches (50 mm).
 - 9. Splash Height: See Drawings.
 - 10. Sinks: Same material, same thickness; flush welded to counter; bottom sloped to outlet; radiused interior corners; drain outlet located in back corner.
 - 11. Metal Top Construction: Metal tops shall be one-piece welded construction, including field joints. A full perimeter galvanized steel channel frame cross-braced will be secured at a spacing of not farther than 2'-6" (760 mm) on center. Fasten top with stud bolts or tack welds. If hat sections are used in lieu of channels, close ends.
 - 12. Structural Framing: Except as otherwise indicated, provide framing of minimum 1 inch (25 mm) pipe-size round pipe or tube members, with mitered and welded joints and gusset plates, ground smooth. Provide 14-gauge (2.0 mm) stainless steel tube for exposed framing, and galvanized steel pipe for concealed framing.

2.02 ACCESSORY MATERIALS

- A. Wood-Based Components:
 - 1. Wood fabricated from old growth timber is not permitted.
 - 2. Provide sustainably harvested wood, certified or labeled as specified in Section 01 60 00.
 - 3. Provide wood harvested within a 500 mile (535 km) radius of the project site.
 - 4. Wood fabricated from timber recovered from riverbeds or otherwise abandoned is permitted, unless otherwise noted, provided it is clean and free of contamination; identify source; provide lumber re-graded by an inspection service accredited by the American Lumber Standard Committee, Inc.

- B. Plywood for Supporting Substrate: PS 1 Exterior Type, AC veneer grade, minimum 5-ply; minimum 3/4 inch (19 mm) thick; join lengths using metal splines.

- C. Particleboard for Supporting Substrate: ANSI A208.1 Grade 2-M-2, 45 pcf (20 kg/cu m) minimum density; minimum 3/4 inch (19 mm) thick; join lengths using metal splines.

- D. Medium Density Fiberboard for Supporting Substrate: ANSI A208.2.

- E. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- F. Cove Molding for Top of Splashes: Rubber with semi-gloss finish and T-spline to fit between splash and wall; 1/2 inch (12 mm) by 1/2 inch (12 mm); color as selected.
- G. Joint Sealant: Mildew-resistant silicone sealant, white.

2.03 FABRICATION

- A. Fabricate in accordance with standards governing fabrication quality that are specified in Section 06410.
- B. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
 - 1. Join lengths of tops using best method recommended by manufacturer.
 - 2. Fabricate to overhang fronts and ends of cabinets 1 inch (25 mm) except where top butts against cabinet or wall.
 - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- C. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
 - 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
 - 2. Height: 4 inches (102 mm), unless otherwise indicated.
- D. Solid Surfacing: Fabricate tops up to 144 inches (3657 mm) long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.
- E. Stainless Steel: Fabricate tops up to 144 inches (3657 mm) long in one piece including nosings and back and end splashes; accurately fitted mechanical field joints in lengths over that dimension are permitted.
 - 1. Weld joints; grind smooth and polish to match.
 - 2. Provide stainless steel hat channel stiffeners, welded or soldered to underside, where indicated on drawings.
 - 3. Provide wall clips for support of back/end splash turndowns.
 - 4. Sound Deadening: Apply water resistant, fire resistant sound deadening mastic to entire bottom surface.
- F. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

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 Design Professional of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch (16 mm).
- C. Attach wood countertops using screws with minimum penetration into substrate board of 5/8 inch (16 mm).
- D. Install tile as specified in Section 09 30 00.
- E. Attach stainless steel countertops using stainless steel fasteners and clips.
- F. Attach epoxy resin countertops using compatible adhesive.
- G. Seal joint between back/end splashes and vertical surfaces.
 - 1. Where indicated use rubber cove molding.
 - 2. Where applied cove molding is not indicated use specified sealant.

3.04 CLEANING AND PROTECTION

- A. Clean countertops surfaces thoroughly.
- B. Protect installed products until completion of project.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION